A Systems Analysis and Design Reader

By Gian Carlo Torres

For
Mommy, Daddy, Kuya, Popet
Finc Familia
Block O1S and DF1
&
Dboys07

Preface

Going through this subject was oh-so hard. Too much papers, too much case studies, too much use case narratives, too much book reviews! I was beginning to get sick of it. Until the day I realized that these were all worth it. I didn't exactly saw "the light" or got inspired or whatever cheesy thing to think about, but I predicted what was going to happen if I didn't do these time-wasting, energy-draining deeds.

Well, most probably, I would have a hard time designing proposals, implementing algorithms, and continue on the rest of the cycle (which is never-ending). I mean, Analysis of Computer Systems is the basic of all, and we all know, even children know what is basic, is the easiest of all. But in reality, Analysis isn't that extra-curricular activity you come at the end of the day, nor that organization you need to spend time with until you graduate and get a loyalty award.

It was about competence. Fundamentals are essential in all aspects of the subject, especially in major ones. Even if you pass the subject, you'll never survive the next in the flowchart because you don't have the prerequisite of having the required knowledge of that subject that will be taken.

My life this term crashes because of too much paperwork. Not having to attend reunions of high school cliques, computer video gaming days, and the like, just because of a dumb old paperwork. One instance, after about 9 or 10 weeks of constant bloody paperwork, our professor decides to let us attend the seminar that same night. What the speaker asked us to do was to read an article and jot down all significant details. All of us were surprised that we have improved a lot in reading in an analytical manner, and identifying significant data for what was expected for us to accomplish.

Basic analytical skills were developed in our analysis class. In my opinion, our professor didn't want us to know that we are unconsciously developing analytical skills while doing our paperwork, and until now, he doesn't mention a thing. All in all, I have seen my improvements, even if my expectations were not even met – but surpassed.

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UNIT ONE

BOOK REVIEWS

"We read about 1,000 times more than we write."

- Xerox PARC

Information as Key Resource

Quote: "Organizations have long recognized the importance of managing key resources such as labor and raw materials. Information has now moved to its rightful place as a key resource. Decision makers now understand that information is not just a byproduct of conducting business; rather, it fuels business and can be the critical factor in determining the success or failure of a business." –Kendall and Kendall

Review: In the corporate world, managing key resources, for example labor and raw materials is essential because it holds the future of the business. With these key resources managed, the organization would have order to avoid any difficulties and delay. It is important that it is managed carefully and correctly, because every system or subsystem is dependent to each other. One mistake would bring disorder to the whole business plan, and it will be difficult to be maintained.

Now, information is a key resource that can be easily managed, but to maximize its potentials to have a working system, every aspect under it should be closely taken care of. As most users do not know, information is all around us, but significantly it is not free. Building strategies for positioning a business competition is a very delicate plan and should not be taken for granted. Now, we are networking through the use of the Internet and the World Wide Web to make it easy for us to transfer back and forth, delicate information for business uses.

Information is now an important aspect for the management to make it easy for them to use essential processes. Before, information is just used to create forms, paperwork and word processing, now it boosts the accuracy and speed of business' systems. For example is the cash register. The process of getting a lot of information from the product to be bought takes a lot of time. By the use of the system software for this business sector, the manual-based information system can easily be obtained by the use of the barcode.

Management Information Systems

Quote: "Management Information Systems (MIS) would be in short- to medium-term forecasting and budgeting and in inventory control, while Decision Support Systems (DSS) would be in analysis of sales, pricing and costing and in the scheduling of production." – Graham Curtis
Chapter 1: Information Systems

Review: I have found out that information computer-based systems are extremely useful and vital for managing a company's simultaneous operations. Through the use of cutting-edge technology, application software would bring ease, precision and accuracy to all data and information carefully flowing in the system.

These aids for supporting business information systems lead companies to success because of foreseeing events that would likely be helpful or bring nuisance. Another is because the element of time, which is essential to management. It would help the organization schedule their activities without hassle.

In short, Information Systems have top capabilities in terms of Business functions, because it lightens the load of managers for quick decision-making to all interrelated subsystems. Information systems under MIS and DSS have basically aided the development of modern business organizations which, in fact, has guided our world to the next level of technology.

Software Engineering Methodologies

Quote: "As a generalization, methodologies which concentrate on the first two phases identified by the National Computer Centre tend to be called Systems Analysis Methodologies, while those focusing on phases 3 and 4 are often termed Software Engineering Methodologies." – Bob Ritchie

Chapter 9: Systems Analysis and Design

Review: According to the chapter, categories of systems of development methodologies are characterized differently by how they are derived. When these methods are established in the system and process is the main function of the system, naturally, PROCESS-driven is the system development used. DATA-driven, however is the system development used when piles of data are built up. Lastly is USER-driven, a development based on Human Activity Systems which is the most interactive system development among the three.

Process-driven refers to an emphasis on the functions which are carried out in the system. Basically, process-driven is the "power-house" system, which is in charge of computerizing a manual process. Being computer-based would certainly bring ease to techies, just not user-friendly.

Data-driven development proponents claim that to concentrate on modeling detailed activities or processes is bound to create an unstable system. Being more constant will bring consistency and therefore would create a better working and stable system. It has brought importance on the entities, their attributes and their relationship with each other. Data-driven is just like storing data: storing is most important, and changing it most of the time would ruin it.

User-driven development, however concentrates of the behavioral aspects of information systems. Its physical attributes are most important in user evaluation and seek the users' satisfaction with technically developed systems by recognizing user interactivity and encouraging participation in systems development processes.

Methodologies that are process-driven are a structure framework for information systems planning, development, management and maintenance. IS Strategy Creation would be the initial step that involves strategic development on the project being started. Secondly, looking at technical and economic feasibility of developing the information system is being identified. Next, analyzing the system, which includes diagrams, summaries, use cases and data structures would certainly finish the strategic phase in the framework. Designing the proposed system to show specifications what is needed to avoid informalities and disturbances. Implementing or Program Development would be the next step: to use flowcharts and data structures for codes for the system. Lastly, testing the system would certainly be good for the project to know the weaknesses and bugs to be fixed.

These methodologies are complicated structures that would be treated with the utmost care when being managed or fixed because the more refined the methodology, the more likely it is to become structured. Having separate steps would certainly show that these are processes or activities of the organization that might be information engineering.

Classes and Objects

Quote: "Both the engineer and the artist must be intimately familiar with the materials of their trade. When we use object-oriented methods to analyze or design a complex software system, our basic building blocks are classes and objects. Since we have thus far provided only informal definitions of these two elements, in this chapter we turn to a detailed study of the nature of classes, objects and their relationships,

and along the way provide several rules of thumb for crafting quality abstractions and mechanisms." – Grady Booch

Chapter 3: Classes and Objects

Review: Recognizing the nature of an object is an important ability because objects are tangible entity that exhibits some well-defined behavior, but on the other hand, an object from the human perspective is a tangible and/or visible thing, something that may be understood intellectually, or a thing toward which thought or action is directed. Some people are unable to recognize objects, because some objects aren't classified as humans see in conspicuous terms.

Users are very particular or "choosy" of what they want to work with as an environment. For example, if the user interface is just pure text, the design is ugly, but the program is working perfectly, the user will then leave that program alone and never open it again. Users need both object-oriented systems, not just systems that work perfectly, but appealing in appearance as well.

Now, in the chapter read, classes and objects are indeed mutual because in programming, they are the elements that usually need to be perfected. Processes are perfected, but these classes and objects are usually harder because it has a lot of properties to be filled.

Objects and classes have state, behavior and identity. The element that encompasses all of the usually static properties of the object plus the current, usually dynamic values of each of these properties are called State. It's simply the abilities of the object. What it can receive and give to users. Behavior is how the object acts and reacts, in terms of its state changes and message passing. It also means that the state can change, according to its abilities, and it depends on the change of the state on how it will behave, acts or reacts. Lastly, Identity is that property of an object, which distinguishes it from all other objects. It indicates that an object can be different from others, thus having an identity for itself. It can do a special behavior that others may, may not, can or cannot do.

Object-Oriented Systems Analysis

Quote: "Many approaches to systems analysis have been tried with varying degrees of success. The approach we advocate in this text is object-oriented. Before immersing ourselves in object-oriented ideas, however, we wish to explain why an object-oriented approach is likely to lead to greater success in understanding and documenting systems

than the more traditional natural-language and process-oriented approaches."

Chapter 1.2: Approaches to Systems Analysis

Review: In systems analysis, we have three approaches: Natural Language Analysis, Process-Oriented Analysis and Object-Oriented Analysis.

Natural Language Analysis is a very simple approach because the systems analyst narrates how the process has undergone. | Small systems are appropriate for this approach because it is difficult to document all details when looking into a system.

Users are very particular or "choosy" of what they want to work with as an environment. For example, if the user interface is just pure text, the design is ugly, but the program is working perfectly, the user will then leave that program alone and never open it again. Users need both object-oriented systems, not just systems that work perfectly, but appealing in appearance as well.

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Model-driven Analysis

Quote: "**Model-driven analysis** is a problem-solving approach that emphasizes the drawing of pictorial system models to document and validate existing and/or proposed systems. Ultimately, the system model becomes the blueprint for designing and constructing an improved system."

Chapter 5: Systems Analysis

Review: What makes it easy to analyze systems is to use easy-to-understand approaches to make the most of the proposing system that will be designed. Analyzing business information systems, in general is a complicated task, because every single detail of data input and data process, especially the result of information output for the benefit of an organization is very significant. One missed or forgotten element in a system would lead to numerous problems that is difficult to be solved.

An approach that computer systems analysts often use is Model-Driven Analysis. Using graphics, such as flowcharts, hierarchy charts, organization charts and flowcharts is an example of modeling. These representations of either a reality or vision, "since a picture is worth a thousand words", are called models.

Most analysts use Visio Professional to generate these helpful diagrams to view all specific details in analyzing and most definitely designing a proposition for the system. There are three examples of model-driven analysis: Structured Analysis, Information Engineering and Object-Oriented Analysis.

One approach that is commonly used by analysts is the structured, whose main focus is on the flow of data in business and software processes. Structured is also called process-centered, because techniques used in this approach is that they emphasize processes as building blocks in a system framework. Data Flow Diagrams are used to show all inputs, outputs and processes, etc. These DFDs basically just show where the data is and where it is going through processes.

Information Engineering and Data Modeling centers itself on data. It is widely practiced because it emphasizes the study and requirements analysis of data requirements before it undergoes a process. Entity Relationship Diagrams show the association of data to each other to gain knowledge from each piece of data, as a group.

Finally, Object-Oriented Paradigm focuses more on objects, which encapsulates data that describes a discrete person, object, place, event or thing with all of the methods that are allowed to use some data and properties. Object technology use languages to show their data or properties, for example: C#, Java, VisualBasic, etc. This approach uses Unified Modeling Language to provide graphical syntax for the whole series of objects.

Information Systems Management

Quote: "**Information systems analysis and design** is a simple method used by companies ranging from IBM to Pepsi to Amazon.com to create and maintain information systems that perform basic business functions such as keeping track of customer names and addresses, processing orders, and paying employees. The main goal of systems analysis and design is to improve organizational system, typically by applying software that can help employees accomplish key business tasks more easily, efficiently and effectively. A systems analyst is at center of developing this software. The analysis and design of information systems are based on the following: (a) an understanding of the organization's objectives, structure, and processes; (b) knowledge of how to exploit information technology for advantage."

Chapter 1: Foundations of Object-Oriented Systems Development

Review: Using model-driven analysis, the key to approach those computer systems analysts is often used. Using graphics, such as flowcharts, and hierarchy charts is an example of modeling.

For example in data-driven development proponents claim that to concentrate on modeling detailed activities or processes is bound to create an unstable system. Being more constant will bring consistency and therefore would create a better working and stable system. It has brought importance on the entities, their attributes and their relationship with each other. Data-driven is just like storing data: storing is most important, and changing it most of the time would ruin it.

Information is now an important aspect for the management to make it easy for them to use essential processes. Before, information is just used to create forms, paperwork and word processing, now it boosts the accuracy and speed of business' systems. For example is the cash register. The process of getting a lot of information from the product to be bought takes a lot of time. By the use of the system software for this business sector, the manual-based information system can easily be obtained by the use of the barcode.

Finally, decision makers now understand that information is not just a byproduct of conducting business; rather, it fuels business and can be the critical factor in determining the success or failure of a business firm.

Operating Systems

Quote: "Operating Systems such as Linux, Microsoft Windows XP and Apple's MAC OS X, are computer programs that interface between a computer's hardware and its user. An operating system's purpose is to provide a stable environment in which users may execute programs. Thus, the primary goal of an operating system is to make the computer reliable and convenient. Its secondary goal is to make efficient use of the computer hardware.

Chapter 5: Hardware and Software Trends

Review: Before the microprocessor was ever innovated in the 20th century, users attempted to solve specific problems and to answer specific questions. These individuals wrote programs, called "hands on", to interface with direct manner to specific hardware: storage, memory, etc. On the other hand, programs managed, called "system monitoring" by computer maintenance personnel who accepts users' programs and data and afterwards, returns processed data output to the same users later.

Though operating systems developed from executing consecutive programs also known as Uniprocessing, to executing several programs concurrently or simultaneously, called Multiprogramming, now it advanced to managing several interconnected processors popularly known as Multiprocessing.

Multiprogramming systems schedule the executing programs according to pre-determined algorithms that are created to minimize the idle system resources. This kind of system is extremely complex and developing this would require large amounts of time and resources. Presently known as Multitasking, Multiprogramming operating systems are common characteristics on personal computers these days.

Lastly, Multiprocessor hardware configurations have lived for more than two decades now, and operating systems in them include the hardware that comes with it. These systems handle all functions, in addition manages interconnected multiprogramming CPUs.

IT Manager's Roles

Quote: "The study of information technology management concentrates on accomplishing business results, attaining efficiency and effectiveness, and, achieving and maintaining competitiveness with the external

environment. For a systems analyst or manager, the goal always is to improve operations for the firm."

Chapter 1: Management in Information Age

Review: Strategy and Planning, Technology and Business Trends, Applications and Data, Operational Disciplines, Resource Control, and Organizations and People: each element is essential to the firm's success.

To develop IT strategic actions and to plan successful and controlled implementations being critical factors is needed to be the initiation part to incorporate every single detail for the development of a system. Competent IT managers is competent in strategy development and planning to capitalize on all major opportunities and technological advances completed by advantages not just in information, but in telecommunications as well.

Advancing in computer hardware, software technology, operating systems software, telecommunication systems and industry trends are elements signaling IT managers to inform every individual of the organization to prepare for their future based on forecasting information.

Application resources must always be taken cared of and to achieve this by IT managers, they need the grandiose skill to manage it with proper treatment. Software applications' output such as databases and data is an essential part of the whole organizational system, so this part is a critically necessary piece that builds up that lets the firm alive.

Business operations needs disciplined approaches to handle delicate operational activities. Most IT managers are trained to obtain patience and proper values to enrich their personality towards this stage. Being systematic leads to success and success may lead to high levels of customer responsiveness from the firm's information systems.

Controlling resources is one of the fundamentally taught lessons in management – an increasingly important and critical with most IT systems. As technology further penetrates organizations more and more, most industries use IT as a guide to success. Information is a key resource that carries out vital pieces of detail to form organization infrastructures.

Lastly, managing human resources effectively is one significant role of an IT manager. Monitoring and controlling every single action of the

personnel is a very competitive role that needs interpersonal skills to be achieved. Desirable results may be acquired if the IT manager is erudite in most psychological concepts that greatly help understand every individual of the internal environment of the organization.

Strategic Information Systems

Quote: "Strategic information systems or SIS are information systems whose unique functions or specific applications shape an organization's competitive strategy and provide it with competitive advantage. SIS may operate in any area of the firm, supporting administrative or operational activities."

Chapter 2: IT's Strategic Importance

Review: The fact that a system has obtained or maintained competitive advantage for the owner makes it a part of the organization's strategic information systems. Enhancing the competitive advantage distinguishes a strategic system from all others in different organizations.

Strategic Information Systems comes in unique categories. For instance, telecommunication-based transaction processing systems (TPS) are the fundamentals of airline-reservation, retail brokerage, banking systems, e-bay, etc. Another would be decision-support system, which have basis on confidential algorithms and investment banking firms for trading stocks and bonds profitably for personal accounts.

"Propriety programs help traders capture profits from small, fleeting price discrepancies in securities." (Frenzel, C., p.38)

Prototyping as Evaluation

Quote: "Designing and building a scaled-down but functional version of a desired system is known as prototyping."

Chapter 1: Heart of the Systems Development Process

Review: Having alternatives in developing systems is a helpful plan to create 'small' computer systems that are for beginners. In this chapter, prototyping was labeled an advantage in systems development alternatives because one of the most important elements in creating systems is the user. Users are greatly involved in the prototyping processes because they perform experimentation and evaluation to the system they are about to use and such.

Incorporating users in the development process would indeed be an advantage because of the feedback to be accepted by the developer would most probably be unexpected. In reality, it is an honor if the developer's experimenting evaluators are high-end programmers and systems analysts who have developed intensive software applications and systems of massive global companies. The developer most certainly has a high chance to improve more on the existing system if the evaluators are skilled critics who have skills in studying the system with great scope and correct judgment.

UNIT TWO

CASE STUDIES

“Reading, after a certain age, diverts the mind too much from its creative pursuits. Any man who reads too much and uses his own brain too little falls into lazy habits of thinking.”

- Albert Einstein

PayPal (Max Levchin)

PayPal had undergone a lot of changes in its final state. Having crypto as a form of security, the system continued to become the inevitable because what the customers are usually doing is not advised.

First, the business firm focused on the handheld devices development and set the company's main product as the Palm Pilot. After terms of success, he abstracted the handheld device to perform numerous tasks such as cryptographic algorithm for security and wallet application for online purchasing. The company innovates a website for the customers to have a solution for online purchasing that gave way to handful problems like fraud and crashing. Most users didn't believe in the PayPal's engineering team, so eventually the team tried to prove them wrong that PayPal will impress them, and this was the dawn of the new age of internet security.

Having a very skillful and erudite co-founder was advised by Max Levchin to build a successful startup. Doing it on your own is hard work, but yet, it's possible. PayPal has intellect that has shown improvement since the last crashing and cases of fraud, since the team doesn't even give a hint to their users that they will give up for that simple situation.

Hotmail (Sabeer Bhatia)

Founded in 1996, Sabeer Bhatia, together with Jack Smith founded the first free web-based electronic mailing service, Hotmail. They started as colleagues in Apple Computers in developing the PowerBook and their hit was the product chips to design Personal Computers for companies who are interested, and those who became interested were Java Soft and Draper Fisher Jurvetson who approved in funding their innovative product.

They founded a free e-mail service because of Java Soft's firewall that prevent the exchange of information between networks. Being full time programmers of Hotmail didn't bring them enough profit, as much as other e-mail services. People started to use their product because of numerous interesting features that are inevitably useful for 'choosy' users.

Microsoft acquired Hotmail because of too much irritation from Draper Fisher Jurvetson that is Hotmail's biggest competitor. Inconceivable problems such as bad-resulting criticisms and lack of strategic planning made Microsoft become their light.

Apple Computers (Steve Wozniak)

Steve Wozniak, as I've heard about him was that he was Steve Jobs' partner for a long time, and he let Jobs freeload his work. Wozniak or WOZ, has this thing with technical stuff, specifically on programming codes, algorithms and such.

He even was designing a scientific calculator for Hewlett-Packard before he and Jobs discovered Apple I. Although, his creativity was left in Jobs' hands, he continued to develop his skills in creating programs for hardware, which later became the Apple Computer. One significant event was Woz and Jobs' argument, which led to a big and serious effect on Apple. Anyways, the problem isn't important anymore because what the engineer Wozniak has taught readers to continue to become diligent, if to become successful in starting a startup is desired.

Every single mistake that would be missed and not carefully taken cared of wouldn't bring equilibrium, either.

Excite (Joe Kraus)

Of all the founders I have read, Joe Kraus would be one of those whom beliefs are capable of bringing life to technology.

I've studied that he has helped millions of people to become passionate of learning all significant things in our surroundings. An online spreadsheet wiki, was a possible solution that Joe introduced to the new generation. The interactivity of technology and people would certainly bring life to both sides: development of information to be known globally and education of people to know almost about all things. Kraus has contributed Excite, which made Internet portals to consist animated features. He has taken the users' favor of giving the user the freedom to edit his own homepage for leisure.

Software Arts (Dan Bricklin)

Dan Bricklin persevered in designing VisiCalc, which was developed not only because computers are just for word processing and such, but for the rise of Information Systems.

More and more business companies who could probably afford it have helped them achieve numerous calculations for their own processes for their systems. During the ascension of the Apple Computers as a dawn to the new generation of technology, Software Arts have entered the scene to complement the brand new computing system.

People have given Bricklin importance because without his intelligence and innovativity, the most powerful and useful electronic spreadsheets wouldn't be around in the present. Being influential would be helpful when you know that what you believe would change and make the world into a better place.

Lotus 1-2-3 (Mitchell Kapor)

Mitchell Kapor had done an incredible breakthrough of electronic spreadsheets in the 80s. Although he was a part of the VisiCalc family, he decided to go to a different path that other International IT Companies have opened their doors for Kapor's invention: a better spreadsheet, Lotus 1-2-3.

Even I would underestimate Kapor if I were in their time, because who would, if everybody wouldn't see him or take him seriously as a professional. But was struck me was his longing patience that took him miles away from the industry in that specific time. He decided to leave all those behind to get ahead. Together with his partner, Jonathan Sachs, they endeavored long moments of pure programming and implementation to create a new and better software.

Lotus Development has given people ease and integration with graphs, charts and other features through the use of electronic spreadsheets. It has helped large companies' business structures and systems to manage every single process.

What I can't forget about this case study was the 64K memory that serves as the storage for the spreadsheet. I remembered that Kapor emphasized on Kilobytes not Megabytes, because now, 1 megabyte is just a minute away from being downloaded. In reality, modernization truly has accelerated; even the Church can't follow with that up speed.

Groove Networks (Ray Ozzie)

Ozzie truly has been inspirational since he had been in the shadows of Microsoft Corporation. I've learned that innovators such as him have endeavored a lot 'til his product has reached its peak.

He made his program just as pried interaction within business systems over the World Wide Web. Peer to peer networking had gone to a level that business systems are available to share ideas and files.

Groove entered a market full of business standards that gave his program a very good name. The world wide web opened for itself for the product to be very usable not only for large businesses who can afford, but also small ones to learn more in managing online business systems.

Well now, we have video and audio conferencing, instant messaging and peer-to-peer networking which Ozzie really originated. His ideas were an eye-

opener about how the future of real-time business planning would be accessible and be effective over the Internet. This technology had become efficient enough to become a worldwide solution.

Blogger.com (Evan Williams)

Now, Blogger.com has revolutionized how keeping a journal even over the Internet would be available. It has been a breakthrough that people wanted to personalize their diaries and journals through the use of electronic capabilities, such as word processors. This online application would integrate the bloggers' journal entries, friends' lists, calendar, etc.

This has been developed by Evan Williams who made it possible for businessmen to share ideas online. But on the other side, what struck me is the point of keeping a diary, if blogging would be displaying entries in public. Having a diary is all about ranting, screaming and scratching the journalists' experiences through a simple notebook to record for future purposes. The present's online applications such as personals, blogspots, etc. are now hitting the top charts on what people are mostly doing online.

We have experienced most of these innovative breakthroughs that gave way to both aesthetic and entrepreneurial standards for present users.

Yahoo (Tim Brady)

Yahoo was first made for research paper links but somehow developed to become a collection of interests and hobbies for users. As Stanford graduates, they had a lot of resources for their startup to work and even used the school's servers for it.

All of them, not just the founders, but employees in addition are indefinite entities that show us to become analysts who show patience and ethical characteristics.

I just want to share on how founders of Yahoo have contributed in Information Technology ethics would be how the word: "BUSINESS ETHICS" is an oxymoron. Just for a very shallow fact that business, in a capitalists' perspective would be ethical.

They took the advantage of making this startup for users because the Internet's size and capabilities are still unknown. Having these kinds of thoughts of knowing and educating others of the possibilities on how a resource such as the Internet at that time would certainly be significant, because in the present, the Internet is giving a huge impact on the people. Not just Information Technology

people or others who understand it, but users as well could simply afford and can understand the computer.

Research in Motion (Mike Lazaridis)

Mike Lazaridis, who cofounded Research in Motion, would be one of the most admired people. He certainly didn't give up on what he believed in. He didn't stop hoping that not all great things are impossible. What he foresaw in the past became a very huge help to most business and information technology companies, in our world today.

Blackberry was the mobile phone, which is the dominant in 1999. Lizaridis had found out about mobile e-mail and wireless technology is really possible to be developed. But before these innovations, he researched on Local Area Networks, which is a breakthrough in this time in Computer History because connecting of computers via networking is absolutely relevant especially in real-time computing.

Blackberry in their time was very popular. It was used by one of the most popular and most significant: NASA. A startup used by one of the biggest organizations in a country and known all over the world would be an honor and Lazaridis had really contributed in making this technological breakthrough a success.

Marimba (Arthur van Hoff)

Again, like startup stories before Marimba, these people who didn't want to be locked in a company for a very long time just be bossed around and live under one rule would certainly have a great deal of success in the future. Of course through natural forces internally within the person, obviously patience and fortitude is required. These people are very unstable with their jobs, keeps on working until they want to start another one.

After he had left Sun Microsystems, Arthur van Hoff created a startup, which is Marimba a software distribution company. After so much work and effort in doing this startup that had been successful eventually, van Hoff had left to found another startup. This kind of attitude of Keep Moving Forward has never let innovators down.

Gmail (Paul Buchheit)

All startups start very unsure of what they want to accomplish, because most of the time, these founders start with the most general of ideas.

For example, Mike Ramsay and Jim Barton whose original plans for TiVo should be a Network Server. They narrowed the wide idea into a Digital Video Recorder. A product or service being user-friendly is one of the most significant featuring the founder uses as a key to catch the users' attention. Also, TiVo was made for the users to tweak their preferences to recording videos and other features. Making the system very open for customization and exceptional user interface would impress the users more.

Another for being user-friendly would be Google's famous customized easy-to-use web-based electronic mail. Gmail has brought out unique features in its interface to make the Internet mailing experience accessible and impressive.

Having a search attribute would identify the whole service's being remarkable. Searching lost and important e-mails in an Internet mailbox has certainly ended because of Gmail.

WebTV (Steve Perlman)

A fact before and about WebTV is that Perlman started in re-programming and re-engineering video games, by hacking and trying to manipulate inputs over the telephone line. They were trying to make an online multiple player features for the game through the use of the Internet. I was impressed when I've learned about putting a high-resolution image on a TV screen that Perlman was working on during his work in Atari and Coleco. I've found out what Interlaced is all about.

After working more than 20 movie projects, I finally knew what Interlaced means because of the narrative Perlman has shared with Livingston. I never knew it was just that simple of 1/60 of a second that all odd lines are being drawn, alternately, even lines. Perlman was innovatively wise in all that he'd done. After all his ingenuity of programming nonstop for 2 days, with only four hours of sleep, he didn't stop his work until he sees it working. I was surprised that he graduated Liberal Arts and took programming as a vocational course.

He has interest in software development and engineering, and took it as a hobby instead of a major thing, because it became a part of him. I wouldn't do the same because I know that programming is not yet a part of me, but soon going to be.

TiVo (Mike Ramsay)

Having a very well thought plan that became a very distinct result is a very unexpected scenario that is very uncommon in starting up. Mike Ramsay and Jim Barton founded TiVo in year 1997, which they planned to create a network server for homes, but eventually became the digital video recorder. It was released in 1999 and lots of people would change the television experience by controlling

most normal television sets features have offered: skipping commercial breaks, pausing live telecasts, and automatic recording.

Because the founders worried that it will have a huge impact on the users, they want to hold it in a little while. Ramsay soon inquired to vendor companies to show his work and hope for some VCs to acquire it from him. Fortunately, most investors and VCs that brought him up to the high level of business organization helped him. TiVo was founded and it wasn't that expensive.

He added more features that helped his product become one-of-a-kind and never-before-seen. Being that innovative is a key to success because without it, the process will not be iterative. Abstraction is always a part of a systems life cycle because the system always needs to be improved.

del.icio.us (Joshua Schachter)

A creative work of art. It started when it was just a hobby. Managing more than two hundred bookmarks would certainly bring pain at those times in computer history.

The first tags were made that is usually a great tip in search engines, blogs and lists. Not being available yet in public, but exposing the website built would certainly fascinate hundreds of users. But having the website of del.icio.us to a lot of users would not bring Joshua profit, so he didn't focus on the website full-time. It was just like another hobby for him.

After other competitors disappear, Joshua has decided to complete his product. Being a venture, del.icio.us would never earn profit, so having it as a service would help even Joshua to have motivation to continue and maintain the website service. Bookmarking is one of the greatest startups in Web history because now, we wouldn't view a lot of webpages if the bookmarking feature hasn't been added yet.

Another don't-give-up story would be when the server crashed and the site's bandwidth was about to exceed. Joshua never gave up in these kinds of problems. "Just fix it." In that time, SQL files has crashed and every piece of file was connected by links and everything, so all is corrupted. For all companies, time is precious. Fixing the service in 24 hours would be a great deal and in business perspective, they were losing money. Another story would be the Vendor Companies who are found significant by Schachter because VCs work very differently and distinctively. Many says that VCs never close their doors to startups because they wouldn't know if that startup would be successful or not. Others think that VCs would bring hope to the company because the startup company would see that the VCs would help them earn a lot from their startup (depending on how big the startup is). Worse, the VC would rip the startup into shreds due to high shares and low invest.

But for every crashes and corruption events in this company, they had to add more and more features for, ofcourse, to benefit. New features are always important because of the never-ending evolution of information technology. When you're way behind, you can't win. Competitive advantage is the key to win a user's hand. Loyalty isn't directly applied in users, just the internal environment of a company would have possessed it.

ONElist and BlogLines (Mark Fletcher)

An Internet E-mail List Service once started because of spam. Mark Fletcher was imperfect to a business of the spam feature, so he decided to start a mailing list web application to his parents called ONElist to keep in touch. The service started very small because it was intended to be used by family members. Initially, it was only to be used for keeping in touch. The e-mail list service was only for his own pleasure, not as a business. It wasn't gonna happen, but it did.

The big turning point started when the Need To Know newsletter had came and Mark Fletcher's service was recognized by the press. Usually, it will be forgotten after a month or so, so Fletcher started quickly.

He thought of journals, blogs, news and other written materials to be sort of "in" because the Internet has been growing in that time in computer history. Bloglines users were growing and more users were getting the hang of it. Most reporters interviewing Fletcher would mention that they were Bloglines users, even. Having a 150-person company would lessen their funding because they don't need much people on handling a company like this. Maintaining is only the thing to do. In economical perspective, the startup is a success with lesser people because the profit they make doesn't acquire all people in the company. That's why Fletcher often didn't want Vendor Companies to lead his company to the highest level. He wanted to do it on his own.

Their biggest competitor became News is Free, and even they are still better and has the competitive advantage, they didn't mind the problem of competition. The scary thing, at first for Fletcher would be that the system would be in danger because of crashes and data corruptions. After a while, the pager existed and helped him to become more aware, but in great distance to be able to monitor the system.

Finally, the easy thing about web-based service applications, is that when the application has a bug, it can be fixed in less than an hour or so, and the software can be fixed without upgrades. This is one of the greatest breakthrough in computer history and it eases software maintenance.

ViaWeb (Paul Graham)

Paul Graham has intended to create an art gallery online as his first startup. But as he identified all disadvantages and the disapproval of art directors and managers at that certain time, he was left with a choice on online shopping carts. Ofcourse starting up isn't that easy. Of all startups read, difficulty cannot be ran from. Hiring people, budgeting expenses and maintaining business functions are some identified being knowledgably challenging. Having these opportunities, on the other hand, for example is the promotion using other successful startups, like Netscape, etc. Another is showing first investors to obtain helpful budget for the startup. Finally is having technical bookstores as customers, because they have a competitive advantage against other companies, especially another who uses a similar system.

A problem encountered would be the need of users. Users, economically are scarce resources in the Information Technology world. Launching a website would be dead without users using and just visiting the site. It's all free on whatever requests the users wanted because the startup is in desperate need of users. Having to scan images, publishing web pages, etc. are examples of what they had done for their users. What they were worried the most was how the site has been maintained. It is also significant that the website would look intrinsically attractive. As learned in class about computer history, User Interface is one element that is probably being forgotten, because the system processes are just the important elements in making the software. But as the evolution of software development has occurred dramatically, information technologists have treated the User Interface as an equal to the quality of processes. Good coding, processing and successful programming would indeed be a failure without good design in the user interface.

The important qualities of being a startup has been told every single case study written. In Graham's team, he didn't give up in hard times of their company, especially when the lowest point of their business arrived. Fred Egan has saved their company, but when one summer, this employee went away, the company had fallen into the traps of investors pressuring to take businessmen to take over the company. Lastly, even if the evolution of information technology is still happening in the industry, abstraction would never stop everyone from doing it. And for everyone's information abstraction is the one thing the systems analyst applies into designing propositions for better improvements for an organization. Copying is a very serious matter and an unethical act to commit, but abstraction would just be a competitive advantage.

craigslist (Craig Newmark)

Once again, a startup had first experienced being a hobby that developed later into a corporate business firm. It was just created to post events for San Franciscans, and because it became known to a lot of people, he added a lot of

features. Just when he was about to have thousands of users, he decided to bring craigslist to the next level. Forming a hobby into a business wouldn't be so bad. It would even bring you good, because the saying, "you will be happy, if what you are doing is what you like." Agreeing with that cliché, I noticed how the business firm grew and how numerous people wanted to become users of the website built by Craig Newmark.

It became a Classified Ad website afterwards, keeping people posted and also, Craig Newmark was keeping the site as free as possible, with no advertisements whatsoever. It was important for a lot of people to know the internet because Newmark believed that equity brokerage business would work someday. Being a very wise person with inferences that someday would work is a good characteristic in startups, in their time. Proving that nothing is impossible if they just predict hypothetically.

Hundreds of cities have been continuing to support this site and agreed to pay the small company of 20 employees, to make sure that the service would grow more and more. Even eBay purchased stakes of the company that gave away evidence that craigslist was a killer app in that specific time in computer and imformation technology history.

Flickr (Caterina Fake)

I have been using Flickr for quite sometime now. Photosharing was a thing of the future, and will be on-line because people want keepsakes for themselves. Memories are quite hard to record and store in computer systems nowadays, because of data crashes and virus attacks in CPUs. Flickr took memories-storing to a level of both security and sharing co-exist.

First, the reading was totally remarkable, how the startup people had started to envision pretty big with the project that they will be doing. An MMORG or Massively Multiplayer Online Roleplaying Game was added for an Instant Messaging service. It was truly vision that was quite hard to reach but was made possible. But the users wanted the feature on photosharing. It was more interesting than the game itself. Users wanted to share photos more and more while playing the game. It was in fact a breakthrough that a small feature was selected by the users, rather than the bigger feature that was so harder than any. I guess the startup people was shocked when they knew that photosharing was used more often than the main game.

So Caterina Fake, Stewart Butterfield and Jason Classon had put Game Neverending on hold for a while because they developed a new and improved community for photosharers in a form of a website, a true exemplar for Web2.0, called Flickr. It was a site to remember, a lot of users had joined and uploaded a lot of photos to be shared to many other users, worldwide. It was truly inspiring that

even the smallest feature, would bring amazement to millions of users all over the world, and it would help them in security matters and sharing ideas to others.

WAIS, Internet Archive and Alexa Internet (Brewster Kahle)

The startup people weren't always starting by themselves. It was important for them to have experience first before they move and innovate new ideas for the development of computer systems. The Information Technology age has brought a lot of help in our world today, and it must be recognized all over the world, the reasons why these startups had the "guts" to give it a shot to be given a chance to make a piece in the history book of Computers and Information Systems. These inspirational ideas that gave us Information Systems students very interesting details on how we can be capable of doing after graduating college.

The Wide Area Information Servers was a big help for users, to search for a whole lot of details in the early Internet times. WAIS became a predefined separate software that proved that the search engine was going to be made. In the computer age of innovation, even continuing nowadays, the forecasting of what would happen to software development in the future is a good thing, because the people would know what we can do by predicting what would happen. It was not a thing of magic or even being powerful, but it was about innovation, creativity and instinct.

The Alexa Toolbar has interesting features of recording history on web surfing. While surfing, the collaborative filters were working to give related links to the users that would find them helpful. What users need at that time would absolutely be the helpful features, because the Web is just a starting object at that time in computer history. Having a helpful collaborative feature would bring balance in the uprising of the Web and the continuing demand of users.

Adobe Systems (Charles Geschke)

Charles Geschke and John Warnock innovated Interpress when they were still employees in Xerox PARC. But due to inevitable reasons like the duration of how long they are going to wait for the release of their program, the developers decided to give up their exquisite job. Waiting seven years for the release of Interpress would certainly bring problems for them, for reasons that other companies might found the same concept and release in an earlier date and that the concept might be an "old" one at that specified time.

A business plan was developed when Geschke and Warnock met Bill Hambrecht who found their concept desirable, and even loaned amounts for them. Adobe Systems was founded as the two developers quit Xerox PARC and immediately developed the same concept as Interpress, and called it PostScript. "PostScript is used by print service providers, publishers, corporations and agencies globally that gives the power to print visually rich documents reliably." Digital

Equipment's Gordon Bell and Apple's Steve Jobs were impressed on the concept possessed by Adobe Systems and informed them to simply give a call, in case they change their mind in selling their software to those big companies. Hambrecht was ambivalent when Geschke and Warnock asked for his advice, but afterwards, decided to ask help from Apple, and Digital Entertainment.

Steve Jobs designed a proposal in order for Apple to have license for Adobe Systems. Since then, the two developers worked on the Laser Printer for Apple Computers and led with an agreement after Adobe Systems initiated business. After so much programming and developing, they released LaserWriter that introduced Desktop Publishing in the IT world. Products such as Illustrator, Photoshop and Acrobat and the like were founded also after several years in Adobe Systems and now recognized as the top notcher and leader software for Desktop Publishing.

Open Systems and Hummer Winblad (Ann Winblad)

Ann Winblad started with nothing: ideas from scratch, continuing without stopping and finally, founded Open Systems. But before all the success happened, she was working in a bank at day, and doing her simple startup at night. Five hundred bucks was even borrowed from her brother, for the reason that her own were cut short. Sequoia was the company that funded Open Systems and luckily, Open Systems was strong against competitors such as the newbie of Microsoft: BASIC.

Winblad has never intended or occupied ambivalence in her decision-making nor affected her gender. As a related issue, gender discrimination wasn't the greatest hindrance she endeavored but, to fight for the gold. She gave credit to all her failures and contested a handful to speak her heart out, and just keep moving forward. A very inspirational story it was when she was cornered by college papers, problem sets and the like, and in addition is the heavy burden (for us) she called blessing. The significance of college was what she really fell into, but what was the essence of college for her?

Based on what I've read, underestimation of co-curricular activities is one characteristic that can never be found in her. Possessing an intellectual, logical and passionate attitude towards these activities can also bring equilibrium to a fulcrum of the jumbling seesaw of schedules. She balanced her hobbies and studies until she was found to be a well-rounded individual.

37 Signals (David Heinemeier Hansson)

David Heinemeier Hansson helped in developing this company from a manual consulting company into a product company. Base Camp is the product name that made their firm a stable company. Base Camp is an online tool for

handling project management in succession to the transition of the company from consultation to production.

Products such as BackPack, CampFire and Ta-Da List are some of Hansson's self-programmed products that inspired many startup companies that having one developer in one specific company would never stop them from becoming a successful business firm. Continuing to be the best, even without time in their hands being wasted, is the key in starting up because a lot of business firms are having a lot of problems in leading their company to the peak, even when they're just starting.

In helping a number of clients in managing projects and business processes, BaseCamp software has never been of ease because of using a blog system to distribute significant information to the online community of the clients. Here, in this scene, is where the software, Noise, became ahead of the BaseCamp. Abstraction is one key in successing the increasing competitiveness of other business firms and as abstraction became the center of every company's strategy, 37Signals was soon founded by the company.

ArsDigita (Philip Greenspun)

Philip Greenspun cofounded ArsDigita in aiding consulting projects for research and projects for all users and clients. Greenspun didn't have a clue on what was going to be the future of his recent software of managing a photography site. I guess that surprising events really struck his startup days and ArsDigita was one big thing that suddenly developed and burst out of it.

The startup team was flexible. They knew that the idea of a consulting software would be inevitably phenomenal, so what they disambivalently constructed the technology to be open source-licensed. In this strategic manner, more companies have carefully studied and spontaneously evaluated their program, causing clients to ask for more features, even ask for customizations and the like. In addition to their marvelous and outright scheme in entrepreneurship, they had become a more passionate and extensive on their company, having one of the important stakeholders, the employees to have continually own some supremacy in office. In this continuum, the company has matured in a state that the program has simultaneously grew in its share of impressive featurettes and customized showcases.

The ArsDigita startup group didn't think they would beat the profitable strategies of Microsoft Enterprises but in the long run of the evolution and abstraction of information technology and systems, they succeeded in consulting for research and projects for all business functions of an organization. All they needed was continuous interconnectivity with their users and clients to evaluate their software for improvements, maintenance, etc. In contrast to the Microsoft startup,

the ArsDigita started with an uncomfortable setting, with incompatible infrastructures used only as experiment to tell that their startup system is working and whould increase their productivity. They thought their efforts were a loss because of the first draft's incompetence and ineffectivity, but in time, they had made corrections that made humongous improvements for the whole firm.

Fog Creek (Joel Spolsky)

Joel Spolsky founded the software Fog Creek in the year 2000 with his colleague, Michael Pryor. Having several softwares that is unique in every way in one product company would certainly bring succession in strategically running the business firm. Several products such as Fog Creek Capilot, FogBugz and the Fog Creek software are powerful anti-hacking system for users who try to avoid hackers from incapacitating his or her system.

It is theoretically proven that being a powerful and skilled hacker would certainly stop another hacker from going into his or her system. This set of products is iterative in contributing to bring anti-virus software into place in that specific time in Information Systems history. Once again, abstraction is the key to bring these modern-day diabolics in silence.

These founders have a very resilient background. After the hardwork they have been through, the Fog Creek software finally paid off. But after a while, compression in market strategies have increased, that gave their product a low-end name. Fog Bugz, City Desk and Tintin didn't even become a hit in the IT market, because of too much abstraction from other companies.

Trip Advisor (Stephen Kaufer)

The Trip Advisor is a very powerful online travel site that helps a lot of tourist users to know where, when and what to do in travelling. I can't believe that their site started because of the founder's wife who wanted to find a venue for their vacation. Other founders, Thomas Palka, Nick Shanny and Langley Steinert were helpful in developing the site, and their first work were to become travel agents.

As travel agents, they usefully counted the internet as a wide environment for them to work on. Their funding is low because their site wasn't that popular yet. But after they've learned that interactivity is very important in dealing with popularity, so they decided to edit their demo to proceed in gathering ratings, comments and reviews for the users to know if the vacation spot was convincingly beautiful. Now in profitting, they came up with brilliant ideas in collecting amounts in helping their servers work in effeciency and effectivity. Their plans were immensely innovative, executed them in perfect condition, and the Trip Advisor, soon became a hit of the public.

Hot or Not (James Hong)

In letting users upload their photos on the web, Hot or Not is a personals website to let users show their personality and background in their respective page. Jim Young is James Hong's cofounder who had a difficulty solving the problem of users posting indecent photos of themselves, but as the abstraction continues iteratively, the website was built in close perfection.

The concept of individuality and friendship is a common lesson they've learned in building this website, and also us as social persons in need of others. Hot or Not helps us as they become the communication device used in having conversations with others. The relationship bonding in between is a continuous process that served as the gold of what they've dug so far as personals administrators.

In low profitting, close to no profitting, they continued the site even without financial support from users. Thus, they became a public figure that everyone counts on. Being appreciated is one thing the founders want from their users. At the end, James Hong even advised the information systems community who will startup: (1) the starter must have people that will understand the product; (2) the starter must 'hustle' because you need to know your path; (3) while still young, commence your own startup; (4) spend money in a very wise manner; and (5) always remember that entrepreneurship is not easy as it looks.

Tickle (James Currier)

After graduating Harvard Business School, James Currier founded Tickle, formerly known as Emode. It is an online evaluation of personal questions for users to enjoy. Having very interesting results would let them answer so much more! James Currier was brilliant when he came up with this idea of user interactivity and such.

An important event in Tickle history was the Dog Test. A long list of tests such as anxiety, educational and relationships were very comprehensive and numerous people are trying the test online. As an advice, Tickle used the Test on Dogs' Breed, from advertising agencies, which led to heavy traffic, that led to the disruption and exhaustion of the site's server.

The competition awaits when iVillage decided to go into the online test sites. But because of Tickle's long-lived abstraction strategies and neverending iterative development of new features, the competitors vanished because Tickle was just tickled by their ferocious and tauntive planning. This startup is a historical event in the IT world for the reason that Tickle had overcome high-end competitors, inconceivable problems and disambivalent users.

Firefox (Blake Ross)

In the Mozilla company, Blake Ross and David Hyatt founded Firefox, an open source project which is known as Phoenix. Blake Ross started to help fix errors and bugs when he was fourteen years old.

Pop-ups, viruses, and other nuisance in the browsers were fixed in the Firefox application, and Blake Ross was one young programmer who intends to make it the best independent browser in the world. But the competition was the greatest challenge Ross ever encountered. Microsoft was unbeatable at that time, but of course, being the abstracted and wise challenger, Blake Ross fired up Firefox and won as the winner of all browsers in 2001 and finally let Microsoft stop developing the new versions of Internet Explorer.

Blake Ross started to think about quitting the Mozilla community to return to school. His greatness in business processes and computer programming has been an inspiration to us future analysts and startup managers. His intelligence over competition and advantage over dependence, worked his name up to the highest level, bringing his innovation to the peak of the world's expectations from what the definition of perfect is about.

Six Apart (Mena Trott)

Mena and Ben Trott encapsulate the bloging systems in their time, so in result, they developed Six Apart with high-end features including networking installments, etc and was called Comet, later on called Vox.

They created a tool to blog with ease, and it the development was incidental with the release of the movable type of blogging. From the first interesting day of launching, they used TypePad as their tool to work on developing, and accidentally used a movable type, that their first user was thrilled on the way he or she composed a blog.

"Since 2001, Six Apart has enabled millions of individuals, media companies and enterprises to create blogs and form rich, interactive communities. We now power conversations among passionate people and leading organizations around the globe, and provide services and media solutions to help bloggers to be more successful. That might sound like a lot, but we're just getting started." - SixApart

The thought of building relationships and communities of this company, the main lesson is whatever the profit they get, they have helped people in building stronger communities that may have helped their relationships become a better group of people, as a part of building great communities of the modern world.

Lycos (Bob Davis)

Started in 1995, Lycos was developed as a research project in CMU. Opportunities from people whom Michael Mauldin do not really know started to show up, and Dan Nova from CMGI invested in Mauldin's work and asked Davis to become CEO of his project. At first, they built the strong team and ofcourse, planned all: their objectives, goals, etc. and finally came up with an idea that they're about to become an online media company.

They indeed controlled their small company of online working to develop a media system and encountered several problems that made their first few months harmful.

Ofcourse in the development of Lycos, their servers encountered a lot of technical difficulties and became very inflexible. Sooner, advertisers offered a lot of deals to make their products become known, by the use of Lycos, because that time, people are mostly spending their time surfing the site.

Later, when Davis decided to merge with the USA Network, the merging was a failure. Lycos thereon became valuable and the founders finally sold Lycos to Terra for US$5.4 billion.

Alliant Computer System and shareholder.com (Ron Gruner)

Together with Rich Andrew and Craig Mundie, the Alliant Computer System was founded in 1982, and its function is to build a parallel of super computers that use multiprocessing, in order to become the fastest Computer Processing Unit. The ACS became the next generation of computing and they finally appeared in public in 1986 with Tom Perkins as one of the board of directors. With the reason of disagreements and miscommunications, Rod Gruner decided to leave ACS and start a new company with modern-day needs.

As Shareholder.com's first corporate customer, Campbell's Soup dedicated its trust to Ron Gruner, who founded Shareholder.com. With his associates and friends who contributed to his startup, he successfully developed a site, even pharmaceutical companies assigned him to perform a project for them, because they wanted organization in their shares.

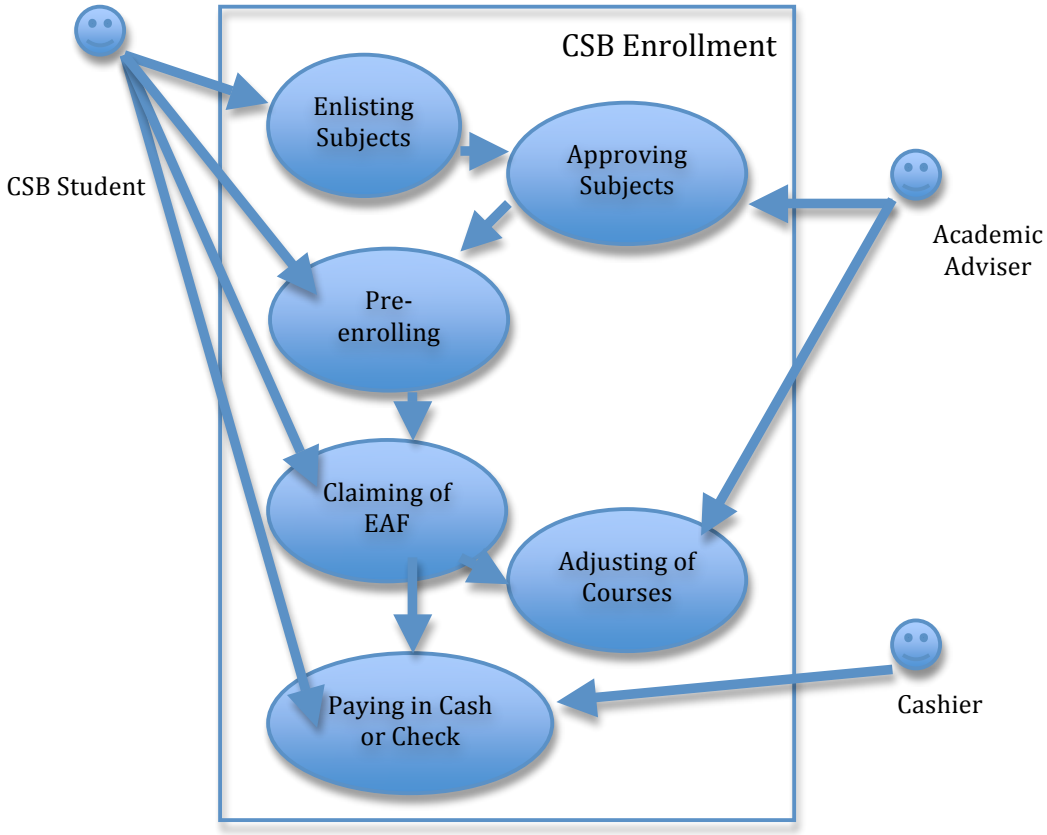
UNIT THREE

USE CASE NARRATIVES

“Man is still the most extraordinary computer of all.”

- John F Kennedy

Enrolling for next term



I. Identification Summary
   a. Title: Enrolling for the next term
   b. Summary: This use case allows CSB students to enroll for next term using Cash or Check.
   c. Actors: CSB Students, Academic Adviser and School Cashier

II. Flow of Events
   a. Precondition
      i. The student must be enrolled in the school before they can enroll again
      ii. The student must not be graduating
   b. Main Success Scenario
      i. The enlisted subjects of the student was approved by the academic adviser.
      ii. The students were pre-enrolling, selecting sections with information such as time and classroom.
      iii. The Enrollment Assessment Form was claimed by the student.
      iv. If the students were unsuccessful in the pre-enrollment, they have an option to adjust their enlisted subjects to avoid conflicts in their schedule.

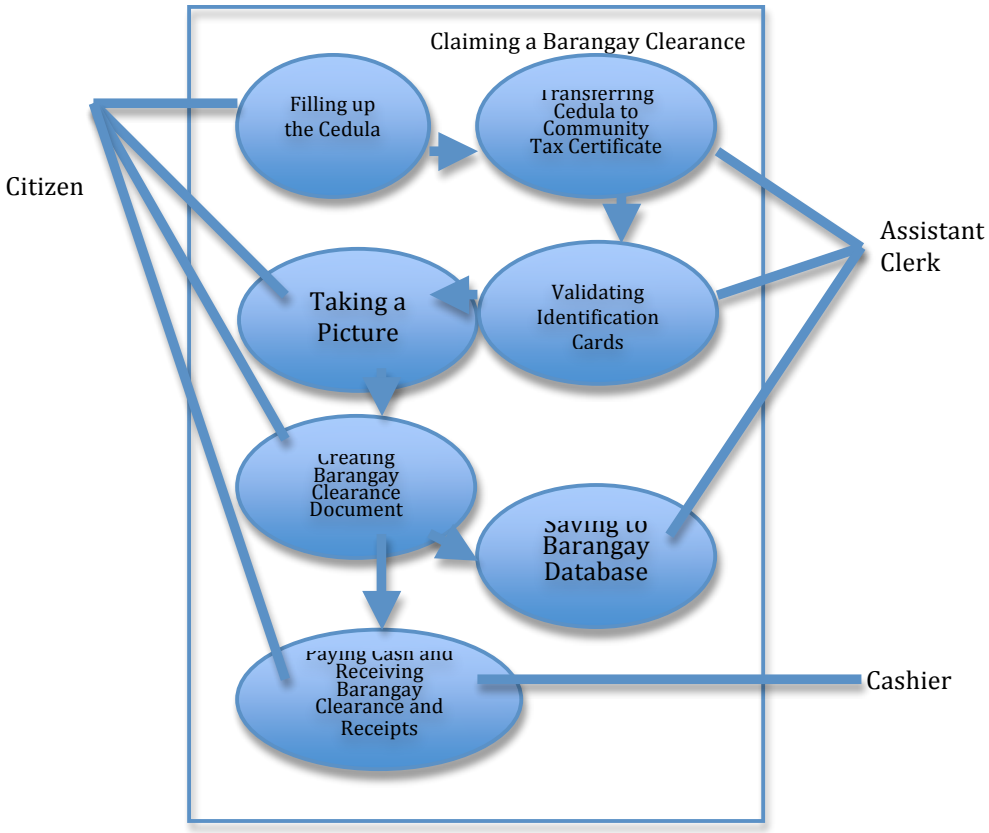
v. The students were paying in cash or check in the Accounting Office, specifically the Cashier.

c. Alternative Sequences
    i. Pending clearances.
    ii. Pending account balances.
d. Error Sequences
    i. Invalid Credit Card.
    ii. The Cheque bounced.
e. Post Conditions
    i. Availability of the course/subject.
    ii. Long queues.

III. User Interface
    a. The input/output mechanisms available to the student must be:
        i. Student Information System website for enlistment, approval of enlisted subjects and pre-enrollment.
        ii. Academic Adviser's Office for course adjustment.
        iii. Cashier window for enrollment.

IV. Non-Functional Requirements
    a. Response Time: The SIS interface is expected to respond longer according to the school for pre-enrollment.
    b. Confidentiality: The enrollment is done in privacy, and the cashier is to safely keep the payments in order.
    c. Availability: Students tend to enroll at the last minute, so it is expected that the queue will be filled with paying students.
    d. Frequency: The Accounting Office is only available at certain hours (8am-12nn and 1pm-5pm) but the SIS is available 24/7.
    e. Integrity: The Accounting Office is made up of esteemed and loyal officers make sure that the money is handled carefully and it is covered in marble and its doors are protected by officers.

Claiming a Barangay Clearance



I. Identification Summary
   a. Title: Claiming a Barangay Clearance
   b. Summary: This use case allows citizens with legal age and discretion to claim a barangay clearance.
   c. Actors: Citizens, Assistant Clerks and Cashier

II. Flow of Events
   a. Precondition
      i. The citizen must be living in the barangay
      ii. The citizen must have two valid IDs
   b. Main Success Scenario
      i. The citizen goes to the main office and fills up a cedula.
      ii. The cedula is then given to the assistant clerk to be copied to the community tax certificate.
      iii. The assistant clerk asks the citizen what is requested to be processed, and afterwards validating the citizen's IDs.
      iv. The assistant clerk takes a picture of the citizen to be printed with the barangay clearance.
      v. The barangay clearance is being processed and being recorded in the barangay's database.

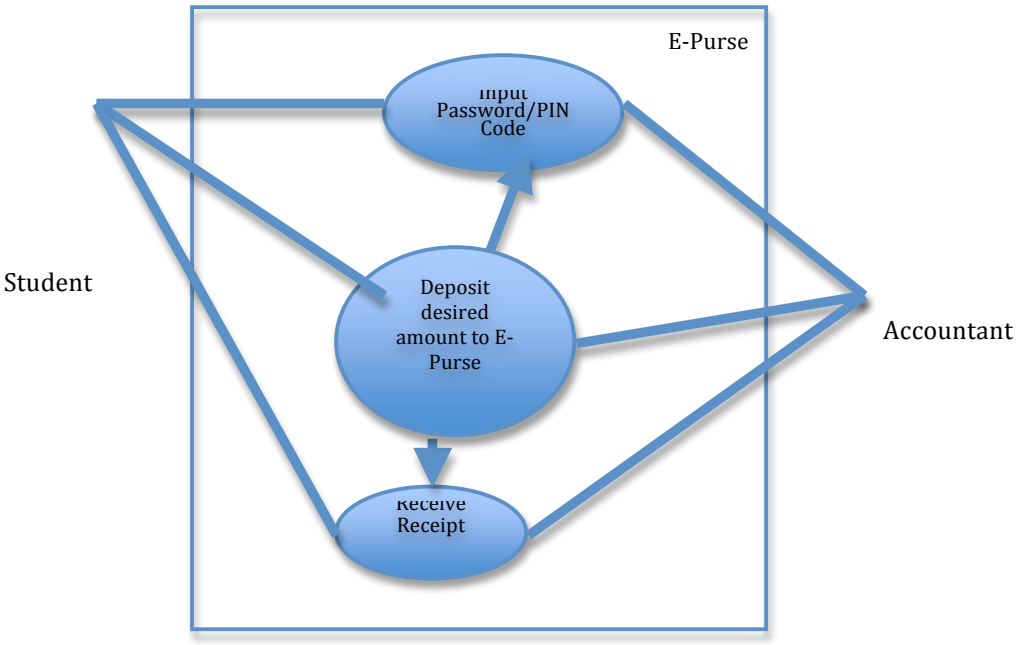
vi. The barangay clearance is printed and is given together with the receipt and tax certificate to the citizen.

c. Alternative Sequences
    i. The citizen has charges under the barangay.
    ii. The citizen is under legal age.
d. Error Sequences
    i. Invalid IDs. (i.e. IDs without residence addresses containing the barangay name)
    ii. Has derogatory record. (charges)
e. Post Conditions
    i. Identification
    ii. Cleared in order to apply for a new job

III. User Interface
    a. The input/output mechanisms available to the citizen must be:
        i. Front desk for information
        ii. Main Office for inquiries and requests
        iii. Mini-studio for picture-taking
        iv. Accounting Office for paying

IV. Non-Functional Requirements
    a. Response Time: The situation depends on the number of people lining up for information and requests.
    b. Confidentiality: The transaction is done in privacy, and the cashier is to safely keep the payments in order.
    c. Availability: Citizens tend to ask for information at the last minute, so it is expected that the queue will be filled with people.
    d. Frequency: The Barangay Office is only available at certain hours. (8am-12nn and 1pm-5pm)
    e. Integrity: The employees' area is always guarded by officers to safely keep the essential objects inside. Also, the police station is on the other side of the barangay office.

Deposit Money for E-purse



Use Case Narrative

I. Identification Summary
   a. Title: Deposit money for e-purse
   b. Summary: Allows student to deposit money
   c. Actors: Student, accountant

II. Flow of Events
   a. Precondition
      i. Valid ID
      ii. Minimum P50.00
   b. Main Success Scenario
      i. Present ID to Accounting
      ii. Deposit desired amount into e-purse
      iii. Input PIN code for e-purse
      iv. Get receipt
      v. Get ID back from Accounting
   c. Alternative Sequences
      i. From 1
         1. ID is not validated
         2. Validate ID
         3. *Go back to 2
      ii. From 2
         1. Too much deposit (>2,500)
         2. Reduce amount to <= 2,500
         3. *Go back to 3
      iii. From 3

1. Input PIN not valid
2. Input valid PIN
3. *Go back to 4

iv. From 3
1. Refuse Receipt
2. *Go back to 5

d. Error Sequences
i. From 0
1. Accounting office is closed
2. *USE CASE FAILED

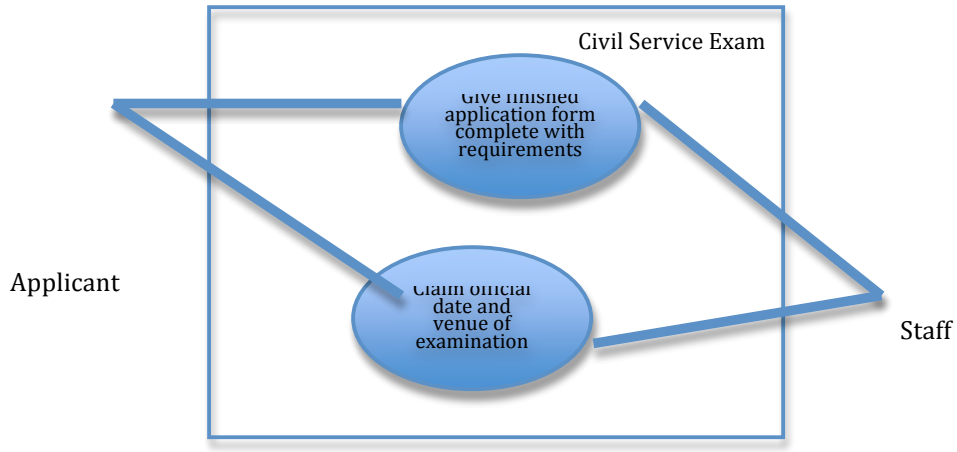
ii. From 5
1. ID is not yours
2. *USE CASE FAILED

e. Post Conditions
i. Printing services at ACTC front desk Taft and AKIC Campuses.
ii. Library penalty payment at LRT-Ext and AKIC-LRC 6th Floor.
iii. Food and beverage purchases at the AKIC-cafeteria.

III. User Interface
a. The input/output mechanisms available to the citizen must be:
i. Accounting Office
1. Window 1 – Cashier
2. Window 2 – Information Office
3. Window 4

IV. Non-Functional Requirements
a. Response Time: The situation depends on the number of people lining up for information and requests.
b. Confidentiality: The transaction is done in privacy, and the cashier is to safely keep the payments in order.
c. Availability: Students tend to ask for information at the last minute, so it is expected that the queue will be filled with people.
d. Frequency: The Accounting Office is only available at certain hours. (8am-12nn and 1pm-5pm)
e. Integrity: The employees' area is always guarded by officers to safely keep the essential objects inside.

Applying for a Civil Service Exam



Use Case Narrative

I. Identification Summary
   a. Title: Civil Service Examination
   b. Summary: This allows the applicant to acquire a Civil Service Exam managed by the Philippine Civil Service Commission.
   c. Actors: Applicant, Staff

II. Flow of Events
   a. Precondition
      i. The applicant must be in proper age of discretion.
   b. Main Success Scenario
      i. The applicant asks the front desk personnel for the application and also, receives the Civil Service Eligibility examination.
      ii. The applicant presents the finished CSE exam application form with requirements and also, receives the schedule and venue for the exam.
   c. Alternative Sequences
      i. From 2
         1. The applicant presents an incomplete form
         2. The staff asks to complete necessary fields and accepts
         3. *Go back to 3
      ii. From 3
         1. The applicant asks for a new examination schedule because of inavailability from the first proposed schedule.
         2. The staff postpones the initial proposed schedule to a new date where the applicant will be available.
   d. Error Sequences
      i. From 0
         1. The applicant is still a minor

2. *USE CASE FAILED

ii. From 0
1. The Commission Office is closed
2. *USE CASE FAILED

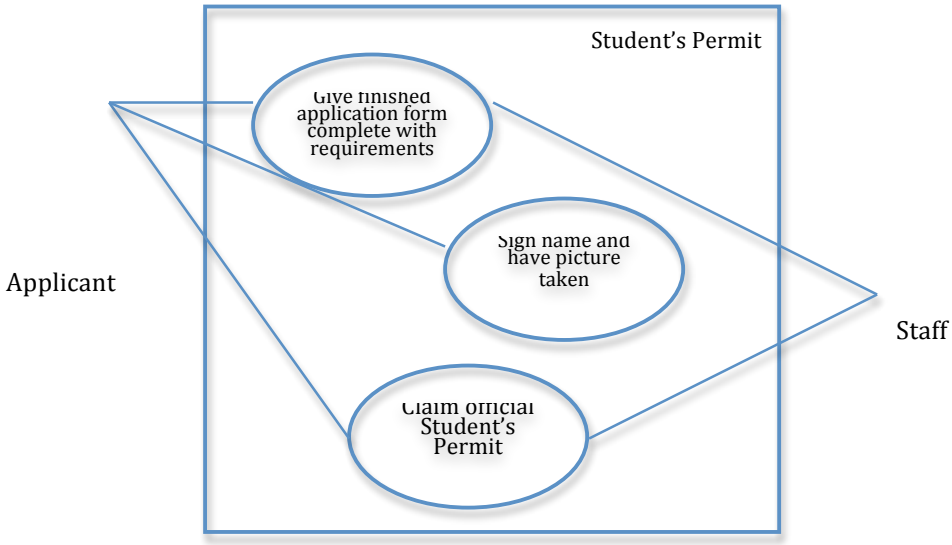
iii. From 1
1. The applicant has insufficient requirements
2. *USE CASE FAILED

e. Post Conditions
i. The applicant can take the test for Civil Service

III. User Interface
a. The input/output mechanisms available to the citizen must be:
i. The Civil Service Commission Office

IV. Non-Functional Requirements
a. Response Time: The situation depends on the number of people lining up for information and requests.
b. Confidentiality: The transaction is done in privacy, and the cashier is to safely keep the payments in order.
c. Availability: Applicants tend to ask for information at the last minute, so it is expected that the queue will be filled with people.
d. Frequency: The Office is only available at certain hours. (8am-12nn and 1pm-5pm)
e. Integrity: The employees' area is always guarded by officers to safely keep the essential objects inside.

Applying for a Student's Permit



Use Case Narrative

I. Identification Summary
a. Title: Student's Permit

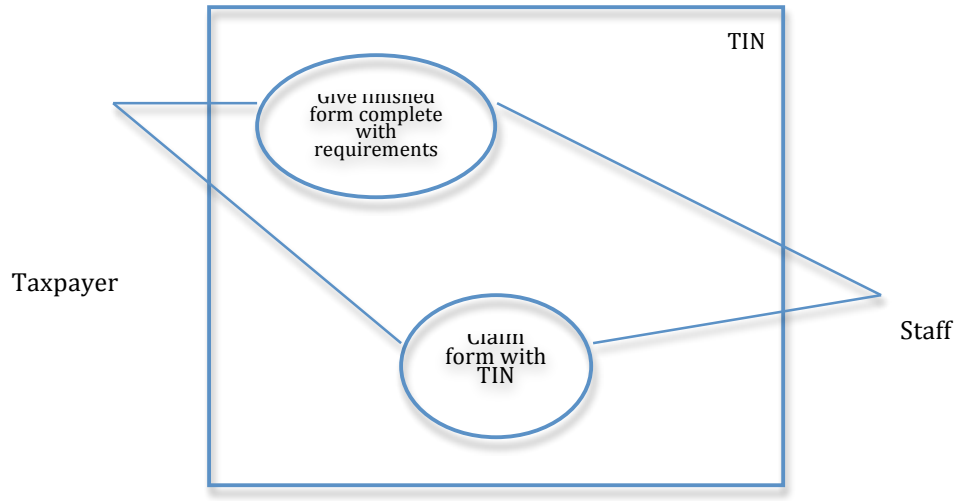
b. Summary: This allows the applicant to acquire a Student's Permit to have permission to learn to drive.
c. Actors: Applicant, Staff

II. Flow of Events
    a. Precondition
        i. The applicant must be over 15 years old.
    b. Main Success Scenario
        i. The applicant fills up the application form and submits it to the office.
        ii. The applicant's signature and photo is taken.
        iii. The applicant receives the official Student's Permit.
    c. Alternative Sequences
        i. From 2
            1. The applicant presents an incomplete form
            2. The staff asks to complete necessary fields and accepts
            3. *Go back to 1
    d. Error Sequences
        i. From 0
            1. The LTO Office is closed
            2. *USE CASE FAILED
        ii. From 1
            1. The applicant has insufficient requirements
            2. *USE CASE FAILED
    e. Post Conditions
        i. The applicant can learn to drive with legality.

III. User Interface
    a. The input/output mechanisms available to the applicant must be:
        i. The LTO Office

IV. Non-Functional Requirements
    a. Response Time: The situation depends on the number of people lining up for information and requests.
    b. Confidentiality: The transaction is done in privacy, and the cashier is to safely keep the payments in order.
    c. Availability: Applicants tend to ask for information at the last minute, so it is expected that the queue will be filled with people.
    d. Frequency: The Office for student permit is only available at half day. (8am-12nn)
    e. Integrity: The employees' area is always guarded by officers to safely keep the essential objects inside.

Getting a TIN



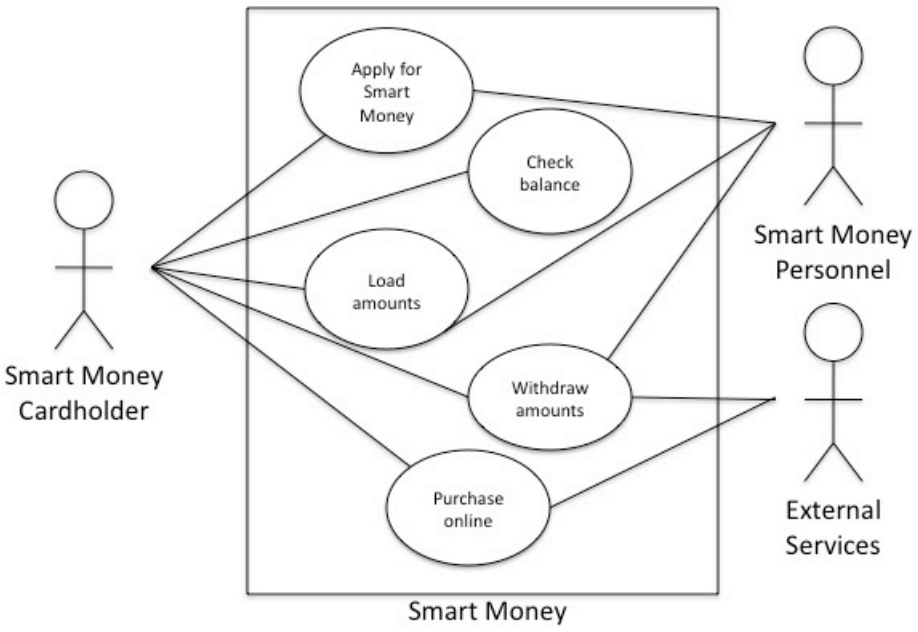
Use Case Narrative

I. Identification Summary
   a. Title: Taxpayer Identification Number or TIN
   b. Summary: This allows the citizen or taxpayer to possess a TIN
   c. Actors: Taxpayer, Staff

II. Flow of Events
   a. Precondition
      i. The applicant must have a birth certificate.
      ii. The applicant must have a barangay clearance.
   b. Main Success Scenario
      i. The citizen accomplishes the form and submits it to the office.
      ii. The applicant receives the stamped form with the TIN.
   c. Alternative Sequences
      i. From 1
         1. The applicant presents an incomplete form
         2. The staff asks to complete necessary fields and accepts
         3. *Go back to 1
   d. Error Sequences
      i. From 0
         1. The BIR Office is closed
         2. *USE CASE FAILS
      ii. From 1
         1. The applicant has insufficient requirements
         2. *USE CASE FAILS
   e. Post Conditions
      i. The citizen would present a TIN in order to transact any payable government service or merchandise.

III. User Interface
    a. The input/output mechanisms available to the applicant must be:
        i. The BIR Offices
IV. Non-Functional Requirements
    a. Response Time: The situation depends on the number of people lining up for information and requests.
    b. Confidentiality: The transaction is done in privacy, and the cashier is to safely keep the payments in order.
    c. Availability: Taxpayers tend to ask for information at the last minute, so it is expected that the queue will be filled with people.
    d. Frequency: The Office is only available at certain hours for the day. (8am-12nn & 1pm-5pm)
    e. Integrity: The employees' area is always guarded by officers to safely keep the essential objects inside.

Applying for a SmartMoney card

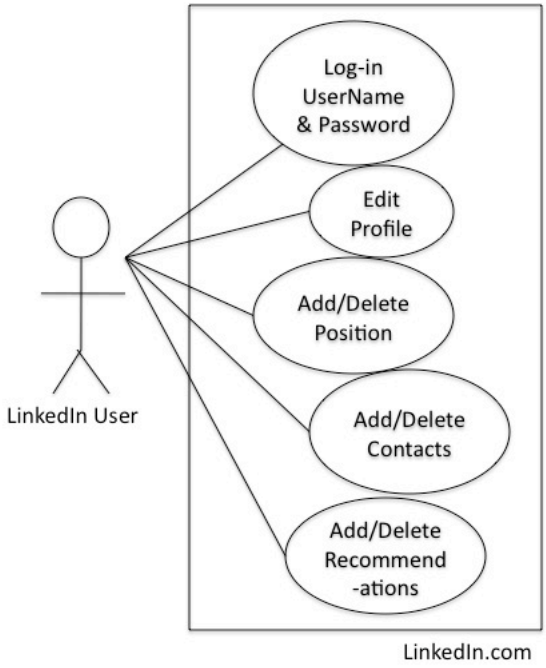


Use Case Narrative

I. Identification Summary
    a. Title: Apply for Smart Money
    b. Summary: This allows users to apply for the Smart Money card.
    c. Actors: Smart Money Cardholder (applicant), Smart Money Personnel

II. Flow of Events
    a. Preconditions
        i. The applicant must be a Smat subscriber.
        ii. The applicant must be at least 12 years old.
        iii. The applicant must have a valid identification card.
    b. Main Success Scenario
        i. The applicant asks the personnel to activate his/her SmartMoney account.
        ii. The applicant hands over the documents needed for applying.
        iii. The applicant gives the payment to the personnel.
        iv. The applicant claims the SmartMoney card.
    c. Alternative Sequences
        i. From 3 – Delay of claiming SmartMoney card
            1. The personnel gives the schedule when the applicant may claim the SmartMoney card.
            2. Back to 4
    d. Error Sequences
        i. From 0 – The Wireless Center is closed.
            1. The applicant finds that the center is closed.
            2. Use Case fails.
    e. Post Conditions
        i. The SmartMoney cardholder may be able to check balances, load amounts, withdraw amounts and purchase online.
III. User Interface
    a. The input/output mechanisms available to the user must be:
        i. Smart Wireless Center
        ii. Smart application in celphone
IV. Non-Functional Requirements
    a. Response Time: The situation depends on the Internet Connection and Server Maintenance.

Adding a Position in linkedin.com



Use Case Narrative

I. Identification Summary
   a. Title: Add Position
   b. Summary: This allows the LinkedIn user to add former and current job positions.
   c. Actors: LinkedIn User

II. Flow of Events
   a. Preconditions
      i. The user must have a LinkedIn account.
      ii. The user must be connected to an Internet Connection.
   b. Main Success Scenario
      i. The user clicks the Edit under Profile Completion.
      ii. The user clicks Add Position.
      iii. The user enters the Company Name.
      iv. The user enters the Title, Time Period and Description.
      v. The user submits the form by clicking Update.
   c. Alternative Sequences
      i. From 3 – Company Recognized
         1. If the company is recognized by the server, a drop-down scroll shows up.
         2. The user chooses the company.

3. Goes back to 4.

ii. From 3 – Company Unrecognized

1. If the company is unrecogized by the server, fields will show up.
2. The user fills in specific information about the company to be added to the server.
3. Goes back to 4.

d. Error Sequences

i. From 5

1. The user clicks on Cancel.
2. Use Case fails.

e. Post Conditions

i. The LinkedIn user has a job position posted on the page.

ii. The LinkedIn user has 15% more in Profile completion.

III. User Interface

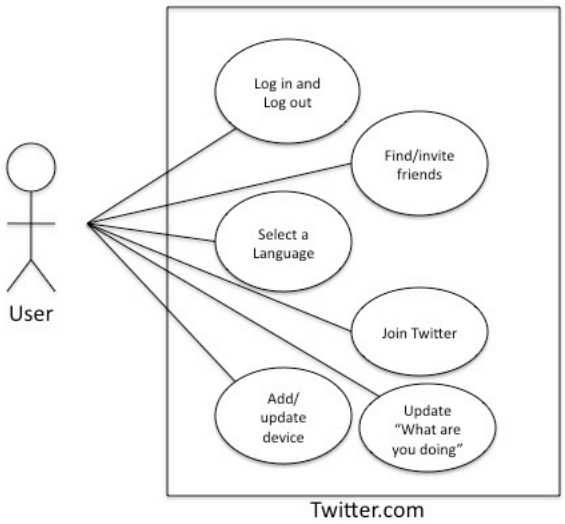
a. The input/output mechanisms available to the user must be:

i. LinkedIn Website

IV. Non-Functional Requirements

a. Response Time: The situation depends on the Internet Connection and Server Maintenance.

Update a message on twitter.com



Use Case Narrative

I. Identification Summary

a. Title: Update "What are you doing?"

b. Summary: This allows the Twitter user to post a message online.
c. Actors: Tweeter user

II. Flow of Events
    a. Preconditions
        i. The user must have a Tweeter account.
        ii. The user must be connected to an Internet Connection.
    b. Main Success Scenario
        i. The user types in a message to the text box.
        ii. The user updates the message online.
    c. Alternative Sequences
        i. From 1 – Message more than 160 characters.
            1. The user edits the message
            2. Back to 2
    d. Error Sequences
        i. From 1 – Message has no characters.
            1. The user clicks on Update without characters.
            2. Use Case fails.
    e. Post Conditions
        i. The system displays an updated message.

III. User Interface
    a. The input/output mechanisms available to the user must be:
        i. Tweeter Website

IV. Non-Functional Requirements
    a. Response Time: The situation depends on the Internet Connection and Server Maintenance.

Activities

Thesis

A Systems Analysis Study on the
Accounting System
of Geometric Shoe Manufacturing

Presented to the
Information Systems Program
School of Management and Information Technology
De La Salle – College of Saint Benilde

In Partial fulfillment of the
Requirements of the subject
Systems Analysis

Submitted by:
TORRES, Gian Carlo DL
CERVERO, Jecca
FUCOY, Dara
WU, Ying Ying
O0C
AUGUST 2008

Submitted to:
Mr. Paul Pajo

CHAPTER 1

Organizing for Improvement

COMPANYBACKGROUND

Official Name: Geometric Shoe Manufacturing

Address: 50 Lazaro Street, Sto. Niño, Marikina City

Line of Business: Shoe Manufacturing (Men's Safety Shoes, Boots, etc)

Mission/Vision of the Organization: To bring the best shoes to represent Marikina and to further give more job opportunities to people.

Products and Services: Delivering at most 1000 pairs of shoes a week.

STATEMENTOFTHEPROBLEM

Critical Business Processes of the Company

Manual-based information system for Accounting processes

General Problem

The company possesses manual-based information system for Accounting System. The database systems are all manually processed. As a result, the accountant uses paperwork to record all data. The manual process affects mainly, the duration of production and tangible elements (i.e. Time, Energy, etc.)

- Accounting is affected because calculations are manually computed.
- Marketing is affected for the reason that transactions are recorded manually.
- The recording of attendance and production data are inaccurate and takes a lot of time because it is manually organized.

These are all affected by manual-based information systems because, in cases of deliveries, slow production and unassured calculations affect the official deadline.

OBJECTIVESOFTHESYSTEM

Our goal for the company is to develop a computer-based information system for all processes and procedures to accelerate the mode of all business subsystems in the company. An improvement target would be to dominate the precision in every aspect of the entire systems' output.

The purposes of designing an improved business system for this company are:

- To fasten inputting records in databases using a computer-based information system for the accountant to lessen errors
- To process exact amounts for payrolls

To address these problem statements, a computer-based information system is to be developed for the betterment of systems in the company. To reduce and hopefully, to avoid errors committed, automated processing should be applied, especially in the accounting system (also called payroll system, by the company).

By using computers as recording, the cost of office supplies would lessen such as papers, ballpens, calculators, etc. Automation in Processing Calculations would lessen errors to assurance to accurate information outputted. The information system designed to improve the previous analyzed system would be more of all-in-one computer-based information system including mathematical operations and other calculations. The inputting of records, activities and reports increase in speed because basically, the computer is used to process the data. The information systems is more of accurate because they are included in only one computer server to store all data.

In tangible benefits, on the other hand, the company would have a competition on being faster than other business organizations. Having a fast process in mass production would be beneficial in terms of competitive advantage. In management, decisions can be made in ease because of the wide range of capabilities of technology would do in the business processes and also designing for a new improvement.

SIGNIFICANCEOFTHESTUDY

The importance of this study is to identify all strengths and weaknesses of the company using manual-based information systems, all business responses from all clients in the industry.

SCOPEANDLIMITATION

The boundaries of this study are: accounting or payroll systems. Not included are: process of building actual shoes and packaging of shoes to be delivered.

Some acronyms are to be clarified:

- JOT refers to Job Order Ticket

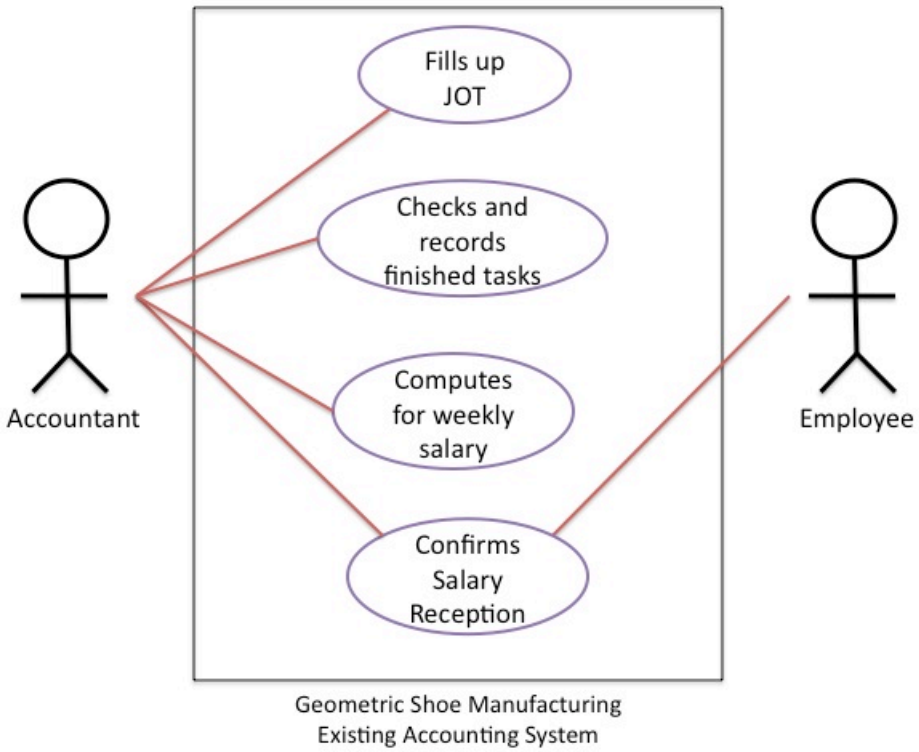
- IEC refers to Individual Employee Card
- ERB refers to Employee Record Book
- SE refers to Salary Envelope

CHAPTER 2

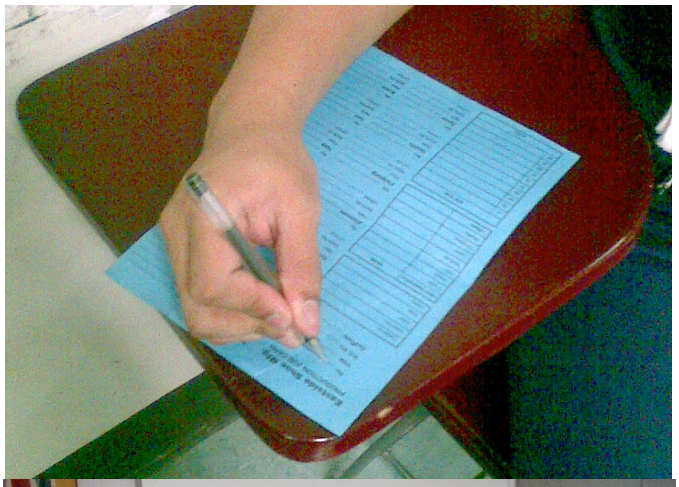
Systems Analysis

USECASEDIAGRAMS

Use Case Diagram of Geometric Shoe Manufacturing Existing Accounting System

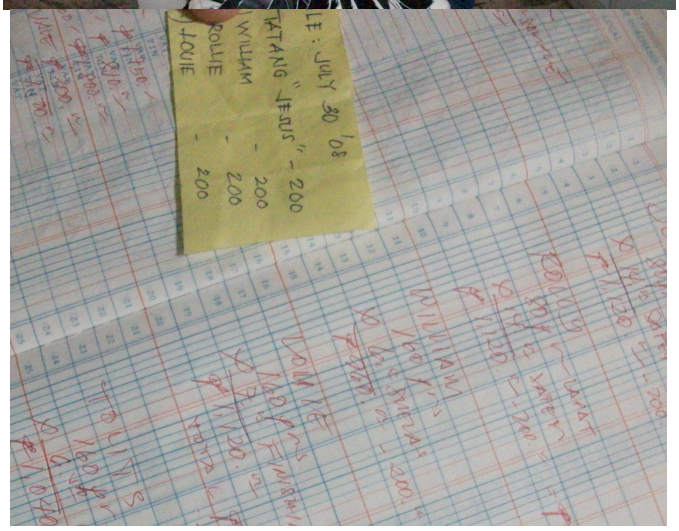


Process Walkthrough



Fill up JOT forms

Checks and records finished tasks



Computes weekly salary

Confirms salary reception

Use Case Narratives and Activity Diagrams of Geometric Shoe Manufacturing Existing Accounting System

Fills up JOT

Use Case Narrative

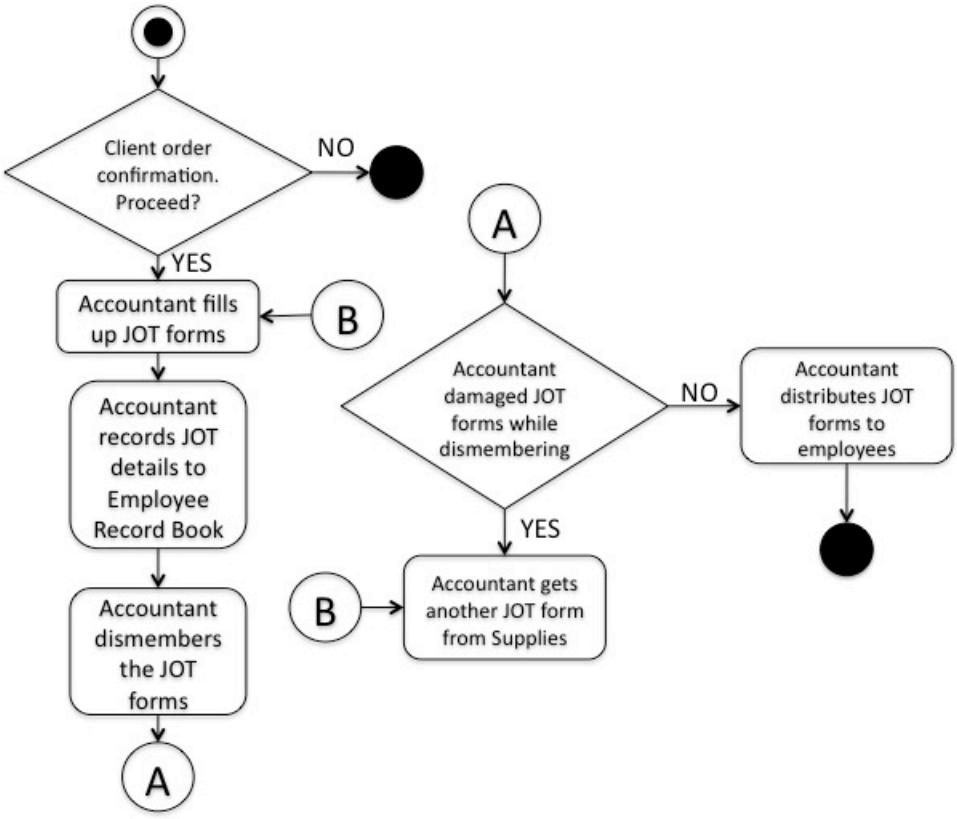
I. Identification Summary
    1. Title: Fills up Job Order Ticket
    2. Summary: The use case allows the accountant to assign employees their workload for a day.
    3. Actors: Accountant
    4. Person-in-charge: Gian Carlo Torres

II. Flow of Events
    1. Preconditions
        i. Accountant should have obtained data from Production System:
            1. Employees available for the week
            2. Client orders for the week
        ii. Accountant should have empty JOT forms
    2. Main Success Scenario
        i. Accountant fills up fields of JOT forms.
        ii. Accountant dismembers (by cutting) the JOT forms.
        iii. Accountant records tasks from JOT to Employee Record Book.
        iv. Accountant distributes dismembered JOTs to individual employees.
    3. Alternative Scenario
        i. JOT form is damaged using dismemberment
            1. Start from #2

2. Accountant damages some parts of the JOT
3. Accountant gets another JOT form from supplies
4. Goes back to #1

4. Error Sequences
    i. Cancellation of Client Orders (due to unexpected causes)
        1. Start from 0
        2. Accountant receives memo from Administration that Client Orders for the week is cancelled
        3. Use Case fails
5. Postconditions
    i. Employees will be able to know how much they are accomplishing for the day, and also for the week.
    ii. Accountant will be able to monitor the workload of employees for the day, and also for the week.

Activity Diagram

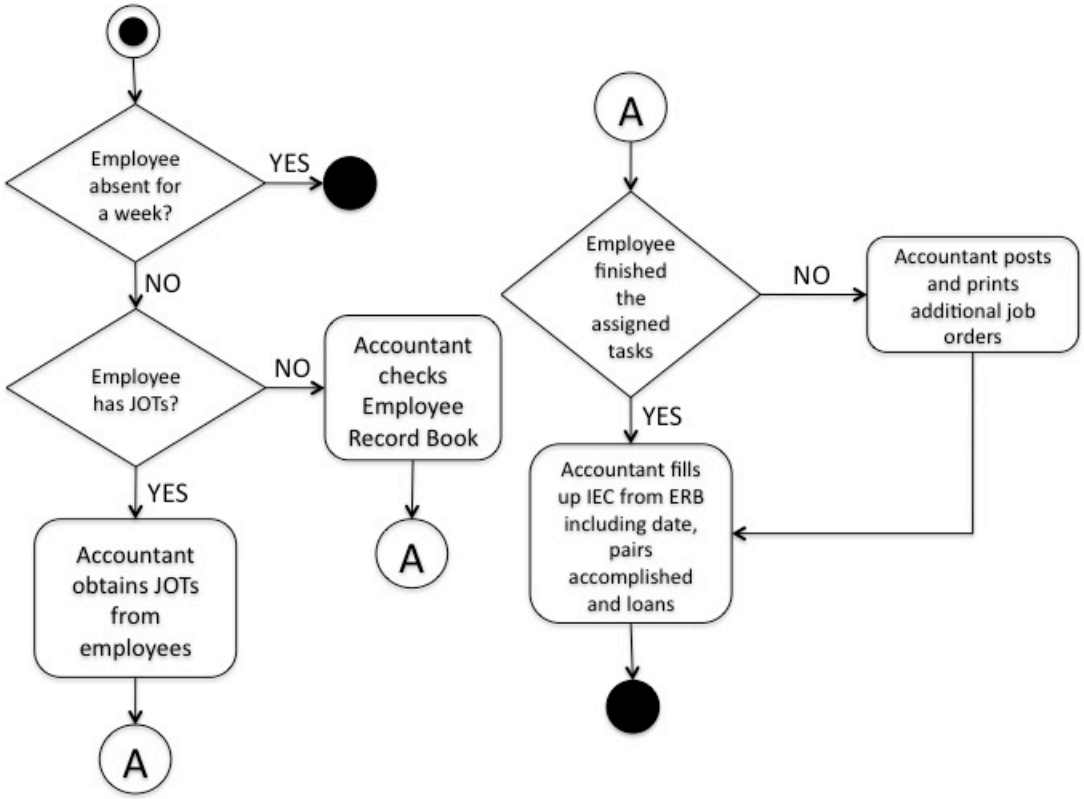


Checks and Records Finished Tasks

Use Case Narrative

I. Identification Summary
    6. Title: Checks and records finished tasks
    7. Summary: This use case allows the accountant to check and record employees' finished tasks during the day of salary.
    8. Actor: Accountant
    9. Person-in-charge: Jecca Cervero
II. Flow of Events
    1. Preconditions
        i. Employee should be present in the day of salary.
        ii. Accountant should have obtained data from production system: Loans
    2. Main Success Scenario
        i. Accountant obtains the JOTs from employees.
        ii. Accountant checks if the assigned tasks have been completed.
        iii. Accountant confirms finished weekly tasks in Employee Record Book.
        iv. Accountant fills up Individual Employee Card with the following data: Date, Pairs Accomplished and Loans.
    3. Alternative Sequences
        i. Employee's JOTs got lost.
            1. Start from 0
            2. Accountant checks Employee Record Book
            3. Goes back to #2
        ii. Employee did not finished all assigned tasks
            1. Start from #2
            2. Accountant revises number of pairs accomplished in Employee Record Book
            3. Goes back to #4
    4. Error Sequences
        i. Employee is absent for the whole week.
            1. From 0
            2. Use Case fails
    5. Postcondition
        i. Accountant can now compute for the employees' weekly salary – Individual Employee Card.

Activity Diagram

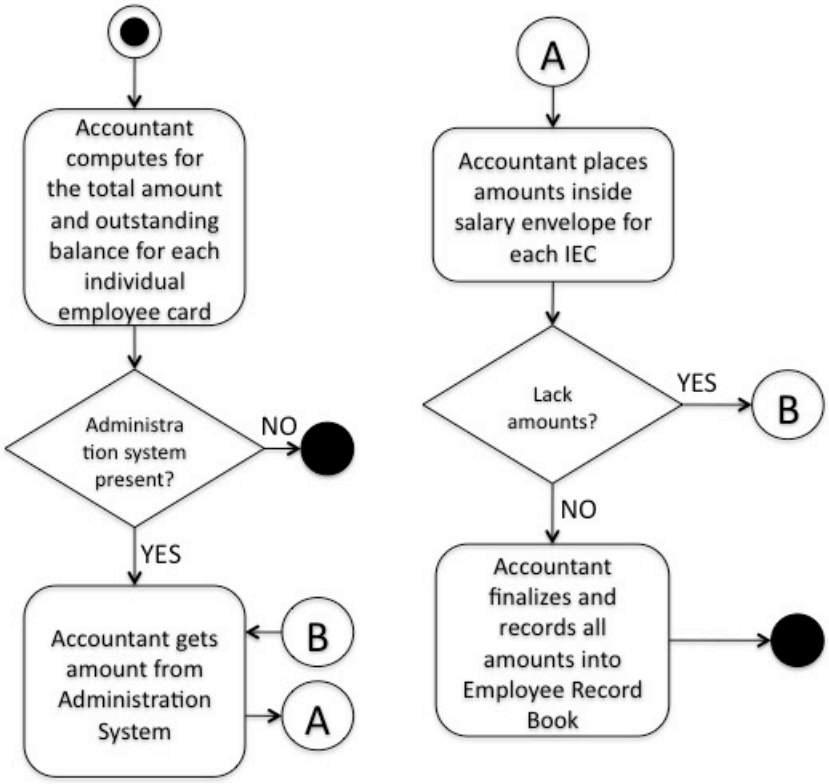

Employee absent for a week?
YES
NO
Employee has JOTs?
NO
Accountant checks Employee Record Book
A
YES
Accountant obtains JOTs from employees
A
A
Employee finished the assigned tasks
NO
Accountant posts and prints additional job orders
YES
Accountant fills up IEC from ERB including date, pairs accomplished and loans

Computes Weekly Salary

Use Case Narrative

I. Identification Summary
    1. Title: Computes Weekly Salary
    2. Summary: This use case allows the accountant to compute weekly salary for the employees.
    3. Actor: Accountant
    4. Person-in-charge: Ying Ying Wu
II. Flow of Events
    1. Preconditions
        i. Accountant should have filled up the Individual Employee Cards.
    2. Main Success Scenario
        i. Accountant computes for the total amount and outstanding balance for each Individual Employee Card.
        ii. Accountant gets amounts from Administration System.
        iii. Accountant places amounts inside the Salary Envelope.
        iv. Accountant finalizes and records all amounts in Employee Record Book.
    3. Alternative Scenario
        i. Lacking amounts
            1. Start from #3
            2. Accountant gets amounts from Administration System.
            3. Goes back to #3
    4. Error Sequences
        i. Administration System is not present.
            1. Start from #1
            2. Use Case fails.
    5. Postconditions
        i. Employees can now receive the weekly salary.

Activity Diagram



Confirmation of Salary Reception

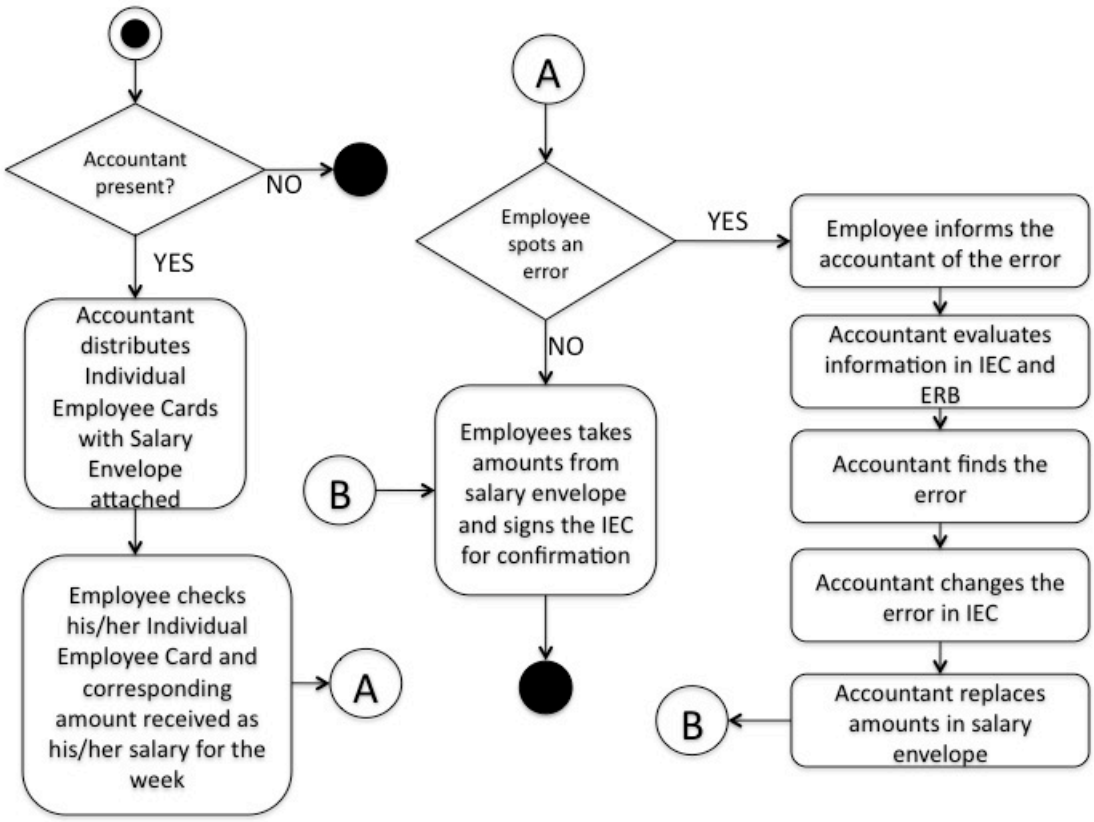
Use Case Narrative

I. Identification Summary
    1. Title: Confirmation of Salary Reception
    2. Summary: This use case allows employees to confirm that their salary for the week has been received.
    3. Actors: Employee and Accountant
    4. Person-in-charge: Dara Fucoy
II. Flow of Events
    1. Preconditions
        i. Accountant should have accomplished the Individual Employee Cards.
        ii. Employee should be present at the salary day.
    2. Main Success Scenario
        i. Accountant distributes Individual Employee Cards with Salary Envelope attached.
        ii. Employee checks his/her Individual Employee Card and the corresponding amount received as his/her salary.

iii. Employee signs the Individual Employee Card for confirmation.

3. Alternative Scenario
    i. Employee spots an error from his/her Individual Employee Card.
        1. Start from #2
        2. Employee informs that accountant of an error
        3. Accountant evaluates the information in Individual Employee Card and Employee Record Book
        4. Accountant finds the error
        5. Accountant changes the error in Individual Employee Card
        6. Accountant replaces amounts in Salary Envelope
        7. Goes back to #2
4. Error Sequences
    i. Accountant is absent.
        1. Start from 0
        2. Use case fails.
5. Postconditions
    i. Employees are paid for the week.

Activity Diagram

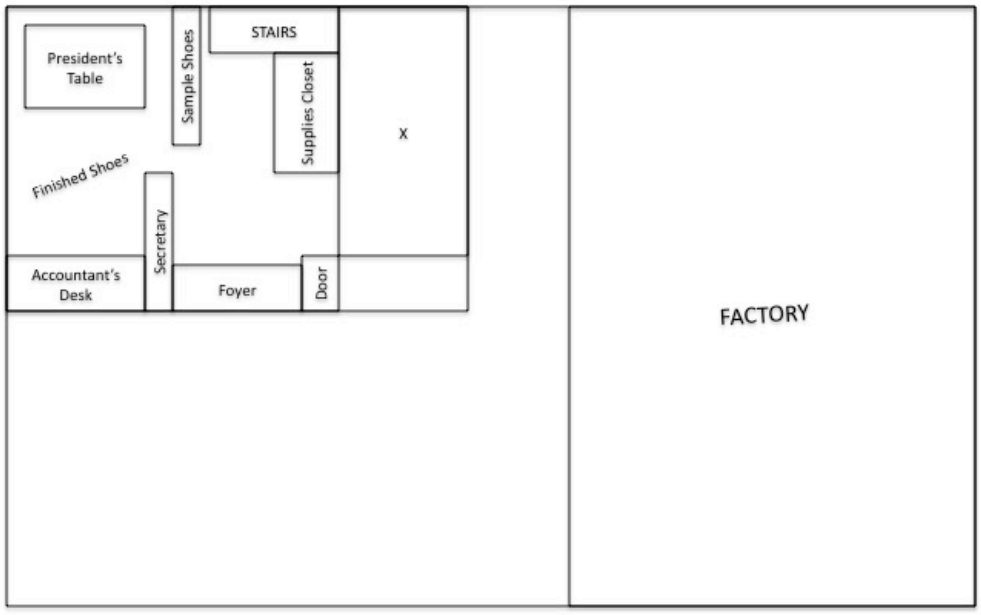


Process Time versus Cycle Time

Action	Venue	Process Time	Cycle Time	Reason/s for advancement/delay
1. Fills up JOT form	Accountant's desk	20 minutes	30-35 minutes	• Cutting • # of client orders
2. Transfers all to Employee Record Book	Secretary's desk	30 minutes	30-35 minutes	• # of client orders
3. Checks all completed tasks	Secretary's desk / Finished shoes / Factory	4-5 days	4-6 days	• # of client orders
4. Transfers weekly tasks to Individual Employee Card	Secretary's Desk	20-30 minutes	30 minutes – 1 hour	• # of client orders
5. Computes	President's	2-3 hours	3-5 hours	• # of client orders

for Outstanding Balance	Table			• # of employees
6. Places amounts to salary envelope	President's Table	2-3 hours	3-5 hours	• # of client orders
7. Employee signs IEC and obtains amounts in SE	Foyer	1-2 hours	1-2 hours	• # of employees

Geographic Flowchart



CHAPTER 3

Systems Design

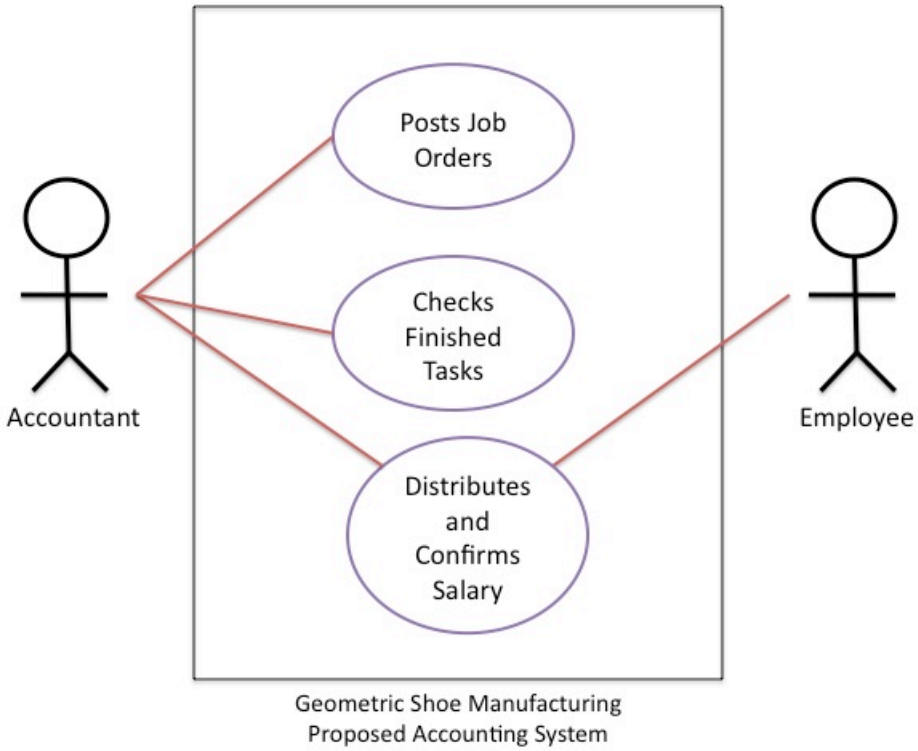
TABLEOFRECOMMENDATIONS

This section addresses all problems, recommended change needed to improve and previous diagrams affected by that specific change.

Problem Addressed	Recommended Change to Improve	Activities Affected by the Change
Manual Calculating and Recording of Salary for Payroll	Computer-based Calculation and Recording System (i.e. Excel)	Calculating and Recording of JOT to Payroll Database
Manual filling and cutting of JOTs	Post Job Orders to Bulletin Board	Assigning of Job Orders
Manually filling IEC	Printing receipts in SE	Recording and Distributing of Salary

USECASEDIAGRAMSOFPROPOSEDSYSTEM

Use Case Diagram of Geometric Shoe Manufacturing Proposed Accounting System



Geometric Shoe Manufacturing Proposed Accounting System

Use Case Narratives and Activity Diagrams of Geometric Shoe Manufacturing Proposed Accounting System

Posts Job Orders

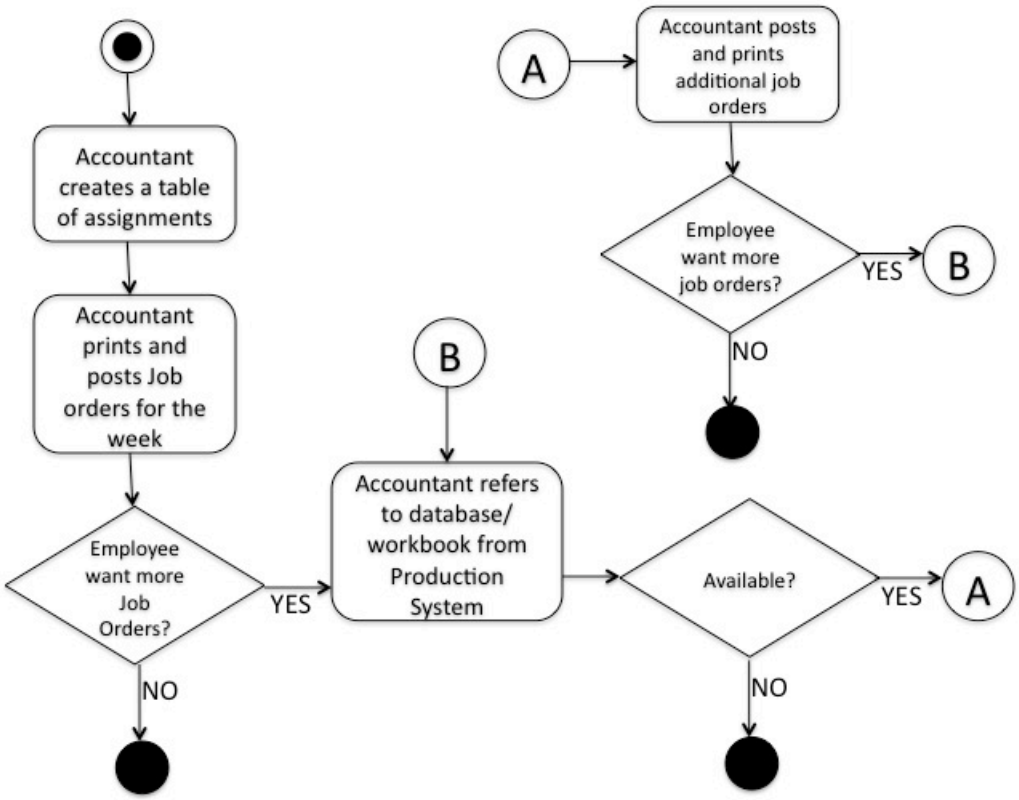
Use Case Narrative

I. Identification Summary
    1. Title: Post Job Orders
    2. Summary: This use case allows the accountant to assign employees' tasks for the week.
    3. Actor: Accountant
    4. Person-in-charge: Gian Carlo Torres

II. Flow of Events
    1. Preconditions
        i. Accountant should have data from Production System:
            1. Client Orders for the week
            2. Employees available for the week
        ii. Computer System must be running
    2. Main Success Scenario
        i. Accountant creates a table of assignments for employees for the week, includes the following:
            1. Name of Employee
            2. Pairs to be accomplished for the week
            3. Due date
        ii. Accountant prints and posts Job Orders (table of assignments) to Employee Bulletin Board.
    3. Alternative Scenario
        i. Employee wants more job orders
            1. Starts from #2
            2. Accountant checks data from production system for more job orders
            3. Accountant creates a new table of assignments
            4. Accountant edits Job Orders
            5. Accountant prints and posts additional Job Orders to Employee Bulletin Board.
            6. End of use case
    4. Error Sequences
        i. Cancellation of Client Orders (due to unexpected causes)
            1. Start from 0
            2. Accountant receives memo from Administration that Client Orders for the week is cancelled
            3. Use Case fails
    5. Postconditions

i. Employees will be able to know how much they are accomplishing for the day, and also for the week.
ii. Accountant will be able to monitor the workload of employees for the day, and also for the week.

Activity Diagram



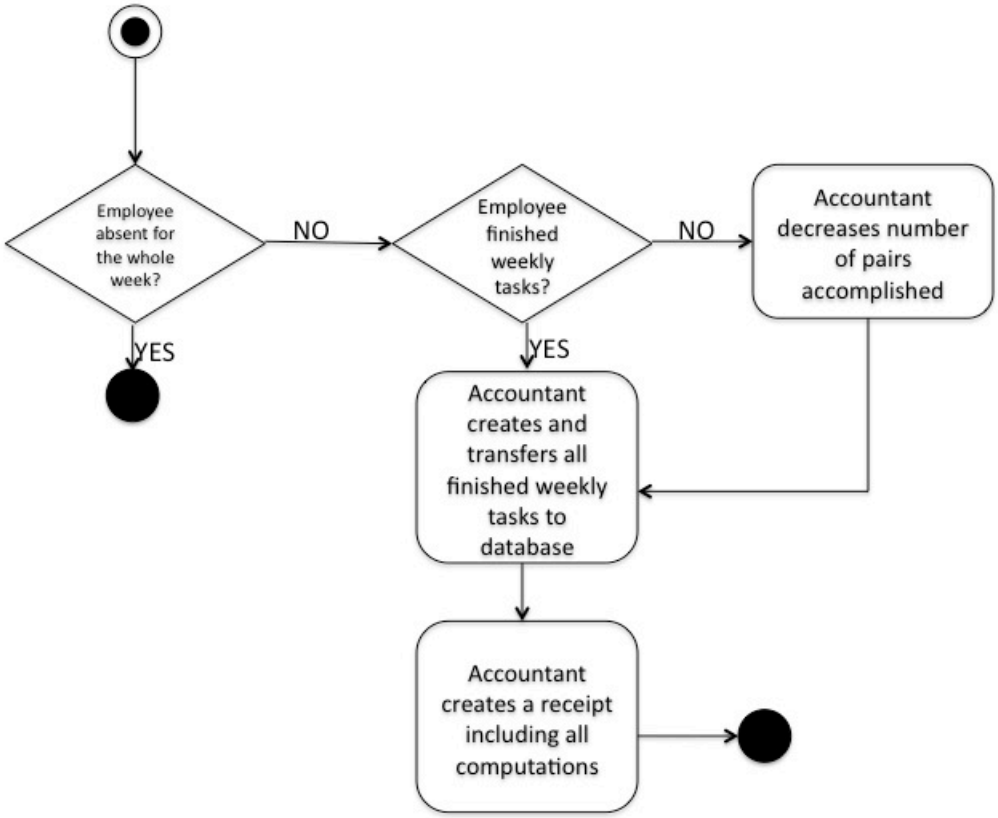
Checks Finished Tasks

Use Case Narrative

I. Identification Summary
   a. Title: Checks Finished Tasks
   b. Summary: This use case allows the accountant to check and record employees' finished tasks during the day of salary.
   c. Actors: Accountant
II. Flow of Events
   a. Preconditions
      i. Computers must be running.
      ii. Accountant should have a copy of Job Orders during the checking.

b. Main Success Scenario
    i. Accountant checks if the employee has finished the weekly tasks.
    ii. Accountant creates and transfers all weekly tasks to database/workbook, Employee Record Workbook including date, pairs accomplished, total amount, loans and outstanding balance.
    iii. Accountant creates a receipt including all computations (total amount, loans and outstanding balance).
c. Alternative Scenario
    i. Employee is not finished with weekly tasks.
        1. Start from #1
        2. Accountant edits pair accomplished of employee in own Job Orders table
        3. Goes back to #2
d. Error Sequences
    i. Employee is absent for the whole week.
        1. Start from #1
        2. Accountant checks that employee was not present for the whole week
        3. Use case fails.
e. Postconditions
    i. Accountant will be able to compute the employees' salary for the week.

Activity Diagram



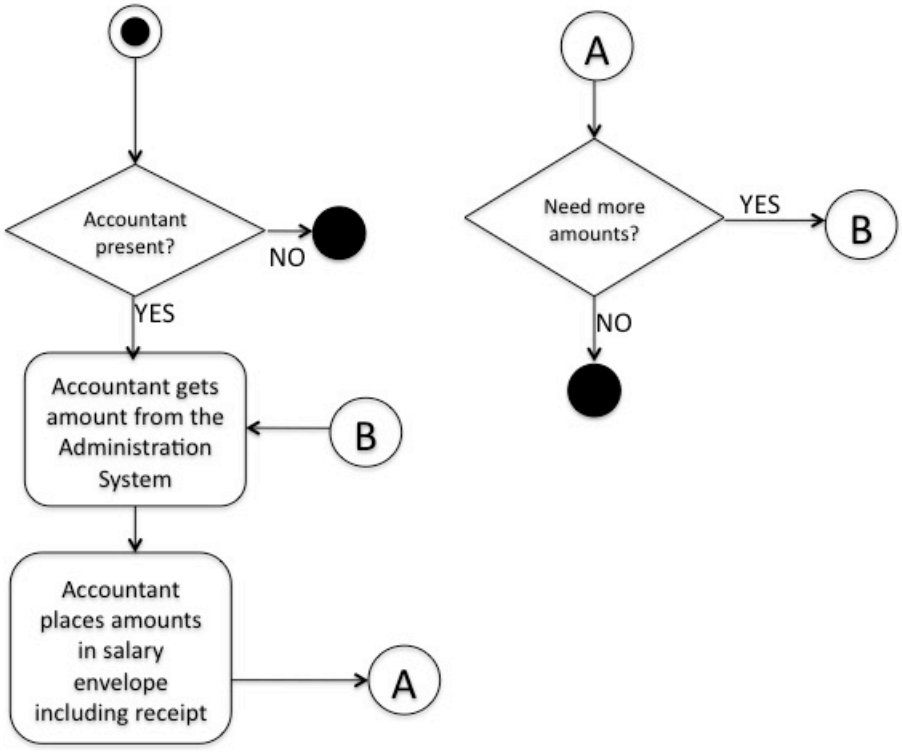
Distributes and Confirms Salary

Use Case Narrative

I. Identification Summary
   a. Title: Distributes and Confirms Salary
   b. Summary: This use case allows the accountant to distribute weekly salary to employees and employees to confirm if their salary is correctly computed.
   c. Actors: Employee and Accountant
II. Flow of Events
   a. Preconditions
      i. Computer must be running.
      ii. Administration system is present.
   b. Main Success Scenario
      i. Accountant gets amounts from Administration system.
      ii. Accountant places amounts in salary envelope including receipt.
      iii. Employee obtains amounts and signs receipt for confirmation of reception.

c. Alternative Scenario
    i. Lack of amounts
        1. Start from #2
        2. Accountant gets amounts from Administration System.
        3. Goes back to #2
d. Error Sequences
    i. Accountant is absent
        1. Start from 0
        2. Use case fails.
e. Postconditions
    i. Employees are paid for the week.

Activity Diagram



BENCHMARKING

Other competitors, manufacturing companies, mostly in China, can be difficult to handle because of its fast-growing and cheap pricing systems; the company is having a difficult time to cope up with new generation information systems.

STREAMLINING

Here are conspicuous improvements in the designed proposition for the system:

- Having to use all computer-based information system would save papers, inks and, most especially time.
- Having to use all computer-based information system would avoid making errors, etc.

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