Abstract

System Analysis and Design was the first core course that I pursued at Lawrence Technological University. My objective of pursuing this course was to acquire designing and analyzing skills related to information systems. As an aspiring analyst, I wish to use the knowledge gained from these topics to review various business circumstances and will try my best to refine it by adopting business specific best practices, better procedures and appropriate techniques.

In my opinion, implementing systems analysis and design processes will not only help organizations transform ideally but also boost their performance to a whole new level. This way, they can achieve their desired targets for profitability and expansion. Learning System analysis concepts equipped me with skills to quantify and determine how adequately a system should function, the changes to be made as well as controlling the quality of the output when supervising a system so as to ensure the achievement of goals in common.

Reflective Consolidation Paper

Overall Understanding of the course:

Systems analysis and design mainly comprises of two major elements, namely: Systems analysis and Systems design. I observed that System design is basically a process of designing and planning an altogether a new system for a particular business. Thus, we can either replace or supplement the existing old outdated legacy systems with a new implementation. But before we plan and put things together, it is an obligation on us to properly understand the legacy systems in place and analyze how the existing computing hardware can best be used to execute work effectively. Systems analysis, on the other hand, is a process of clarifying and organizing facts. Here, an analyst can identifying the system shortcomings, problems and use that information to recommend improvement opportunities for creating an efficient system.

The systems analysis and design comprises of the following major topics namely: Systems analysis fundamentals, Information requirements analysis, Design essentials and Quality assurance and implementation. The systems analysis and design class began with the introduction of the very fundamentals of systems analysis i.e. the definition of a system, the roles associated and the system development methodologies involved. As an aspiring systems analyst, studying and understanding these concepts made me realize its importance for the betterment of organizations, be it large or small, in every aspect. There's an old phrase to which even many major organizations adhere to, "why fix something which is not broken" and stick to archaic practices thereby losing out revenue to technologically upgraded and updated competitors in the same field. It takes a systems analyst's observation, thinking and logical reasoning to figure out why an established organization is losing their market hold to new entrants or smaller

competitors among many other such problems which go unrealized even to experienced businessmen. It also allowed me to gain an in-depth understanding of a systems analyst's functions as a consultant, a supporting expert and most importantly, as an agent of change! In addition to this, in my opinion, a systems analyst must possess exceptional problem solving skills, negotiation skills, leadership skills and communication skills. But most importantly, an analyst must be capable of imparting a strong influencing over the organization.

Later onwards, I encountered the three development methodologies: SDLC, the agile approach and the object oriented systems analysis and design. Learning the 7 SDLC phases enabled me to develop a greater understanding of the systematic approach that an analyst is expected to follow when designing and analyzing a system from scratch. Similarly, the agile approach and the object oriented approach provided a broader understanding of rapid systems development process.

I was having a very hard time learning the object oriented approach as it was a challenging topic for me initially. I was literally struggling to understand the basic concepts such as objects and classes. Also, a lot of diagramming such as the Use case scenarios, Activity diagrams, Sequence diagrams, the Class diagrams, Statechart diagrams etc. was involved which further added to my woes.

To overcome these short comings, I started referring JAVA concepts to get a broader and a practical understanding of how the classes are created along with the instantiation of relevant objects to access other classes. Once the Visio assignments and the in-class activities began, drawing the above mentioned diagrams in a meaningful manner became a piece of cake for me. The weekly assignments and the various in-class activities worked out well as I was able to effectively present a vague idea into clear, descriptive and meaningful diagrams with an

additional perk of learning and mastering an equally important diagramming software, MS Visio. By performing well in the in-class activities and MS-Visio assignments, now I am capable of depicting systems graphically and more clearly. Since every diagram (e.g. ERD, DFD etc.) is unique, it has a specific purpose and is always associated with a relevant design and development approach. As a prospective systems analyst, it made me realize how granular and meticulous the analysis and planning should be so as to include each and every aspect (tangible and intangible) associated with an organization.

Studying these fundamental topics from an analyst's point of view altered my way of thinking and I started adopting a more systems perspective approach.

In the project management topic, I studied the 5 phases through which a project progresses, those are, Initiation, Planning, Execution, Monitoring and Control and Closing. Studying Project Management helped me recognize the selection and initiation steps involved in a project. I also learnt how to establishing an appropriate business problem definition and anticipate the credibility of a proposed project.

The systems analysis and design class then progressed towards another topic, Information requirements analysis i.e. Information gathering: interactive and unobtrusive methods. According to me, an analyst should be very well versed and proficient in gathering required knowledge so it is easier to build a comprehensive image of the organization's data requirements which is exactly what the chapter talked about. Through these chapters, I was able to recognize the value of using various interactive as well as unobtrusive information acquiring methods to gain valid and authentic information. I learnt various interactive information acquiring methods such as interviewing, listening to stories, joint application designs (JAD meetings) as well as using

questionnaires. Sampling, investigation, observing decision maker's behavior as well as observing the physical environment were some of the unobtrusive information gathering methods that I studied in this particular chapter.

I enjoyed studying the Interview topic, it was a fun learning experience as the professor, Dr. Kohnke explained the same topic brilliantly accompanied by some excellent examples from her past interview experience. I liked this information gathering technique in particular because it was extremely granular and mentioned very specific steps called as the "Five steps in interview preparation" for preparing yourself to play the role of an interviewer. The topic also explained how and what kind of questions should be prepared beforehand so as to extract information as much as possible from an interviewee without making them feel uncomfortable. Finally the topic described the significance of writing the interview report as early as possible so that the very essence of the interview session is captured and the data integrity is maintained. Learning the above topic, absolutely convinced me that it is extremely important to document the acquired data in the form of a report so as to maintain its integrity as it is always subject to major or minor altercations knowingly or unknowingly.

Another crucial part of Information requirements analysis is the Agile Modeling and Prototyping. As a professional programmer, I was able to relate my occupational work experience in agile modeling and Prototyping to the systems analyst's responsibilities mentioned in this chapter. Through this chapter, I concluded that prototyping is an excellent method for drawing out reactions of management as well as the users, also it can be used for gathering human information prerequisites whereas, by using structured methods or Agile modeling we can increase the efficiency of knowledge workers.

The systems analysis and design class then progressed towards another topic: The essentials of design i.e. designing effective input-output, designing databases and Human-computer interaction. Studying these topics from an analyst's perspective made me realize that there were a lot of input-output design considerations in place for creating any website or a web application. Design objectives for output stressed mostly on making the websites and web applications more user friendly. The objectives were in place to make sure that the intended purpose was served. The derived outputs were relevant to the end users, that too, in an appropriate quantity so as to avoid any irrelevant information being passed on to them. Some of the objectives were in place so as to ensure that the required output was received on time only where it was required.

This chapter also discussed about some design considerations for smart phones and tablet apps such as their price, icon, logic, appropriate name etc. which was very much interesting. This chapter made me aware that even minor things such as color, font, and presentation of data on outputs played a crucial role in appealing to the end users. Now-a-days we have a wide variety of software platforms at our disposal such as XML, Ajax etc. providing us the liberty to choose any one for fulfilling our design and development requirements. Similarly, for designing effective inputs, analysts must devise ways to obtain authentic data from end users, such as, creating a nice display with a good form design, engaging an efficient and attractive Graphical User Interface design (GUI) with proper GUI controls.

As an analyst, when the time comes that I am required to design a website, I'll make sure that the displays and interfaces are kept as simple as possible and consistency is maintained. I'll ensure that my web design collects appropriate user data, facilitates easier user movements

throughout the display screens and its associated pages along with an equally attractive and a pleasant display.

The next chapter was about designing databases. This topic began with basic database concepts such as, reality, data and Metadata and progressed towards more advanced database concepts like normalization, records, tables etc. Particularly, I found the E-R Diagrams (Entity Relationship Diagram) very fascinating. E-R Diagrams allowed me to establish logical relationships such as many-to-one, one-to-many, one-to-one etc. between various entities and allowed me to present my ideas in clear manner. Learning the E-R diagrams was a nice fun experience; it was also one of the MS Visio assignments.

The importance of E-R diagrams was realized when I started creating records and tables. The relationships made linking multiple entities from different tables extremely convenient and allowed making entries in appropriate fields more easily. E-R diagrams helped me keep track of my entities especially when multiple tables were created and most of those tables had a collection of two or more keys from some other different tables. Since this topic was new to me, I had to develop my knowledge from scratch. So, for some sub topics I referred Murach's 2012 SQL Server. When I finished studying this topic, I was able to appreciate the roles played by databases in the field of information systems.

There are many things that I learned from this course of which I am pretty much sure will have a lasting memory and a major contribution in shaping my career as an analyst in the database field. I specifically found the object oriented analysis very challenging as I had no previous theoretical as well as practical exposure related to this field. The extensive diagramming involved made the topic comprehension more difficult. To overcome this problem,

I started referring Java topics which gave me a proper revelation and a broader understanding of objects, classes and the object oriented approach. The in-class activities as well as the MS Visio assignments enabled me to expresses my ideas flawlessly into expressive and highly informative diagrams.

There were a lot to topics that resonated with me, particularly those included in “essentials of design” part namely: The designing of inputs-outputs and databases. Learning these topics along with their salient features enabled me to be more proficient in database design techniques as well as database implementation. I am extremely happy with the skills and knowledge that I acquired while pursuing this entire course which was worth its value.
The academic cognizance and the arcane skills that I acquired while pursuing this course from this particular book, makes me feel more special and more confident. I am sure that someday, if my skills are put to use in any professional database related organization, I’ll be able to work alongside experienced professionals with least help and guidance and definitely make a difference.

References

Kendall, K., & Kendall, J. (2014). Systems analysis and design (9th Ed.). Upper Saddle River, N.J.: Prentice Hall.