Approach

4.1 Introduction

This chapter describes my approach to the project. Technology adopted to solve the problem in problem domain is detailed further. Also users of the software system, input output and processes related to this software project are described at necessary places of this chapter.

4.2 Selection of Software Process Models

As per the feasibility study given in Appendix A, system was studied and come in to conclusion whether this project is viable to implement. As an actor of this system, I couldn't find any difficulties to understand the system.

For this project waterfall model is selected so that project can be partitioned in to different phases like design, implementation, integration, testing, and operational maintenance. Then this software process is manageable by scheduling each phases giving the deadlines. Also at the end of each phase there can be deliverables. When comparing with the evolutionary development and component based software engineering model, process visibility of waterfall model is high. Because of those reasons waterfall model is selected for this project.

4.3 Selection of System Analysis and Design Methodology

Among the two system analysis and design methodologies discussed in Chapter-3 Object Oriented Analysis and Design (OOAD) methodology is used for this project because the concept of OOAD is so closed to real world application. Objects which are used in OOAD are independent and there is a clear mapping between objects and real world entities. When comparing OOAD with SSADM, OOAD has understandability and maintainability.

4.4 Selection of Unified Modeling Language

Unified Modeling Language is used to specify, visualize, and document models of software system. Most of the developers use UML to explain the system to client as the communication media. UML allows developers to understand the system step by step. In this software project functional requirement views, static structural views and dynamic behavior view are used as the UML diagrams.

- **Functional requirements view**

Functional requirement view represents the functional requirements of the system from the user's point of view.

Eg: Use case diagram.(See Appendix C for use case diagrams)

- **Static structural view**

This view emphasizes the static structure of the system using objects, attributes, operations and relationships.

Ex. Class diagram. .(See Appendix C for class diagrams)

- **Dynamic behavior view**

Dynamic behavior view emphasizes the dynamic behavior of the system by showing collaborations among objects and changes to the internal states of objects.

Ex. Sequence diagrams and Activity diagrams. (See Appendix C for sequence and activity diagrams).

4.5 Selected Development Environment

4.5.1 Front end Programming Languages Used

PHP 5.2.5 was used as server side scripting language and java scripts was used as client side scripting language in this software system. While Apache 2.2.8 was selected as the web server, HTML was selected as a markup language. These languages and web server are open source and there is no need to get licenses from the vendor.

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4.5.2 Database Management Systems (DBMS)

Base on activity diagrams, sequence diagrams, and class diagram, an Entity Relationship (ER) diagram was developed. Then entities, attributes and their relationships were identified. By looking at the ER diagram, relational data base scheme was developed. This schema was normalized in to 3rd normal form.

Given below is a comparison of some of available DBMS.

Figure 4.1 – Comparison of available DBMS

Feature	MYSQL	SQL Server	ORACAL
Licenses	Not applicable	Applicable	Applicable
Cost of the product	No Cost	Very high	Very high
Upgrades	Free of charge	With a charge	With a charge

Since MYSQL is an open source DBMS, there is no need of obtaining licenses from the vendor. Also the cost of the product is nothing and therefore I have selected MYSQL version 5.0.51a as the DBMS.

4.6 Scope of the Project

This proposed Activity management and Monitoring System was designed and developed using Web technology for the purpose of storing, manipulating and summarizing the records related process of product certification scheme.

Following are the main aspects considered in this software project:

- Manage application.

- Select the project officers by keeping records in proper way.

- Nominate auditors without conflicting to the other activities.

- Manage the annual fee.

- Monitor the audit arrangement history and reschedule the audits which have not been done.

- Monitor the annual payments details.

4.7 Summery

Functional requirement view, static structural view and dynamic behavioral view have been selected to design the system. Comparative to the other software process models; select ion of waterfall method has really benefited to this software project and object oriented analysis and design methodology has been used for the design purpose. Because this software system identified as web based system; PHP, Java script and HTML were used for the coding. My-SQL was used to develop the database. Next chapter will be described how these selections have been adopted.