**Name of The documents:**

Our Project summaries the necessary course related tools for the students and provides the information needed by the students will be readily available to them.

**Project Title:**

UNIVERSITY COMMUNICATION SYSTEM

**Document Version:** 1.0.0.0

**Printing Date**: 28 February, 2016

**Department and University:**

Department Of Computer Science and Engineering

International Islamic University, Chittagong

**Declaration**

***We hereby declare that the project work entitled as “University Communication System” is an authentic record of our own work carried out at “IIUC” as required for the six months project semester. We tried our Best to make this project perfectly. However, this project has some limitation which is beyond our knowledge. We hope this project will prove to be satisfactory.***

*Date: \_\_\_\_\_\_\_\_\_\_*

*Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_*

***Certified that the above statement made by us is correct to the best of our knowledge and belief.***

*Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_*

**Dedication:**

***The Whole Project is***

***Dedicated***

***To***

***Our Beloved Parents***

**Acknowledgement**

*First of all we would like to thank Almighty Allah for successful completion of this project. There after we convey our sincerest thanks and gratitude to our honorable project supervisors Sanjida Sharmin and Rahima Afroz, Lecturer of department of CSE in International Islamic University of Chittagong, for their valuable suggestions, constructive advices, encouragement and sincere guidance in our entire project. We must also convey our special thanks and gratitude to all of respected teachers of our department. We would like to thanks to all of our friends and all the staffs of the department for their valuable suggestions and assistance.*

**Abstract**

*The online website system accepts the data that are given by the authorized persons of Institute. The students may use the website to know the information about institute, teachers, students, result, admission etc. The administrator checks out the member’s current status weather he/she has the legal right to use the facilities of the site by using the website.*

*The system checks whether the user has right to access the site or not. If the member is the legal user, then he/she is given the facilities of the site and updates the database. If new number comes to get the facilities of the site, he/she must be registered. At first the user has to create an ID and Password for the new member. Then the system validates the new member’s information. After validation, he/she will be able to access the site.*

**Contents**

**Part 1 Introduction**

* 1. **Objective of the project**
  2. **Overview of the project**

**1.3 Project deliverables**

**Part 2 Project Organization**

* 1. **Software process model**
  2. **Roles and responsibility**
  3. **Tools and techniques**
  4. **Languages and Application**

**Part 3 Project management**

* 1. **Dependency**
  2. **Constraints**
  3. **Risk and Managements**
  4. **Feasibility study**

**Part 4 Design**

* 1. **DFD**
  2. **ERD**

**4.3 Relational Schema**

**4.4 Use case diagram**

**4.5 Sequence diagram**

**4.6 Interface design**

**Part 5 Implementation**

* 1. **Method of Software Implementation**

**5.2 Web application**

**Part 6 Testing**

* 1. **Testing method**
  2. **Testing outcomes**

**Part 7 Maintenance**

**7.1 Maintenance cost**

**7.2 Reliability**

**7.3 Availability**

**7.4 Security**

**7.5 Portability**

**7.6 Performance**

**Part 8 Discussion**

**Part 9 Conclusion**

**Part 10 Appendix**

**Part 1: Introduction**

**1.1 Objective of the project:**

* Students face problems in collecting slides, projects, questions, books specially the students of first semester.
* If students get necessary course related tools like hand note , slides , pdf link of books ,questions and solution of problems they will have clear knowledge about the course.
* Students will be able to communicate with the teachers through the system.
* Students and teachers will be notified about recent news.

**1.2 Overview of current project:**

In this project there is different stages to be processed the result.

* Admin controls the overall system activity.
* Teachers and students must register first.
* They will insert their information in database.
* They can upload files which will be approved by the admin
* PDF link of books, articles published by the teachers, slides, projects of the students etc will be included.
* There will be a news board where any kind of notice related to class delay, rescheduling of classes, tests, assignments, contests, and conferences will be available.

**1.3 Project deliverables:**

By using Online e-University management system, the user be benefited as they are not face the limitation which they face in their manual system. We will try to provide user all possible services. Some of these services that we will provide by our software are mention:

1. User friendly.

2. Different access level for different user.

3. Provide flexibility to maintain data and information.

4. This web based software offers students to see their information.

5. Security.

**Part 2: Project Organization**

**2.1 SOFTWARE PROCESS MODEL**

Waterfall model with Prototyping is used as a model of the e-University management system web portal. Waterfall model consists of stages that are cascading from one to another. One development stage should be completed before the next begins. The Waterfall model presents a very high-level view of activities taken place during development, and it suggests to developers the sequence of events they should expect to encounter.

FIGURE 2.1: Waterfall Model

The Requirements phase is where an e-University management system application should be selected based upon University authority or manager priorities. After conducting a complete research on the application that is selected, the next is on identifying the problems.

Planning is an important phase where an e-University management system plan is drafted out and changes are made so that a plan can be followed without any more changes during the final phase. The plan is done so that there is progression or action taken on the applications selected. Questionnaires have been conducted to get a whole picture of customers’ responses. The plan is then followed strictly so that the system can be put into operation.

The next phase after the planning phase is on analyzing the current and new procedures of the system. Analysis is important to gather information from the existing e-University management system. Feasibility study is conducted to find out whether it is beneficial to carry out the new system. Studying the existing e-University management system and the procedures involved is what the feasibility study is concerned with.

After the analysis phase, the next step is to Design the system based on the requirements selected in the analysis phase. Design can be constructed easily by having a prototype system. Prototype system is either a workable or non-workable system that has the screen design with the important features included. So the users will test the prototype system to see whether they are satisfied with the requirements.

The next step is the Implementation phase where the process of changeover takes place where the existing system is converted into e-University management system web portal. Before the changeover takes place, there are few activities that need serious consideration, otherwise the implementation will fail.

The next phase is on Verification the current and new procedures of the system. This phase verify that the system is working properly or not and it meets the given requirements to achieve the system goal.

The last phase is the Maintenance phase for modification and enhancement purposes. It is important that continuous assessment is carried out for better services in the future. These are all the phases of project life cycle that can be taken into consideration before a project is successfully implemented.

* 1. **Roles and responsibility:**

This project has required some roles and responsibility and if we want to complete this whole project within due time, we should maintain these roles and responsibility.

* 1. **TOOLS & TECHNIQUES**

We have implemented our software using some tools and techniques that are given below:

* + 1. **TOOLS AND TECHNOLOGY**

Language: Basic HTML

Design: Css (Cascading Style Sheets)

Javascript

jquery

Scripting Language: PHP (Hypertext Preprocessor)

Server: Xampp Server 1.3.7

Database: MySQL 5.1

**2.3.2 SOFTWARE**

1. Windows Xp, Windows Vista, Windows 7 or higher version.

2. APACHE Web Server

3. Macromedia Dreamweaver

4. Tools: Notepad++, Web surfing tool such as Internet Explorer, Opera, google chrome and Mozilla Firefox etc.

**2.3.3 HARDWARE**

1. Pentium II, Pentium III, Pentium IV, Intel Dual core and higher.

2. 64 Mb or higher RAM.

3. 90 Mb disk space.

**2.4 LANGUAGES AND APPLICATIONS**

**2.4.1 HTML**

Hypertext Markup Language (HTML) is the main markup language for web pages. HTML elements are the basic building-blocks of web pages.

**2.4.2 PHP**

PHP (Hypertext Preprocessor) is a general-purpose server-side scripting language originally designed for web development to produce dynamic web pages. It is among one of the first developed server-side scripting languages that is embedded into a HTML source document, rather than calling an external file to process data.

The main characteristics of PHP are:

* PHP is web-specific and open source
* Scripts are embedded into static HTML files
* Fast execution of scripts
* Supported by most web servers and operating systems
* Supports many standard network protocols libraries available for IMAP, SMTP, POP3
* Supports many database management systems libraries available for MySQL, Oracle
* Dynamic Output any text, HTML XHTML and any other XML file

**2.4.3 CSS**

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation semantics (the look and formatting) of a document written in a markup language. Its most common application is to style web pages written in HTML and XHTML, but the language can also be applied to any kind of XML document, including plain XML, SVG and XUL.

Benefits of CSS are:

* + - Pages download faster, sometimes by as much as 50%
    - You have to type less code, and your pages are shorter and neater.
    - The look of your site is kept consistent throughout all the pages that work off the same style sheet.
    - Updating your design and general site maintenance are made much easier, and errors caused by editing multiple HTML pages occur far less often.

**2.4.4 JavaScript**

Like Java, this is a programming language designed by Sun Microsystems, in conjunction with Netscape that can be integrated into standard HTML pages. While JavaScript is based on the Java syntax, it is a scripting language, and therefore cannot be used to create standalone programs. Instead, it is used mainly to create dynamic, interactive Web pages. For example, Web developers can use JavaScript to validate form input, create image rollovers, and to open those annoying pop-up windows.

**2.4.5 MySql**

MySQL, pronounced either "My S-Q-L" or "My Sequel," is an open source relational database management system. It is based on the structure query language (SQL), which is used for adding, removing, and modifying information in the database. Standard SQL commands, such as ADD, DROP, INSERT, and UPDATE can be used with MySQL.

Many database-driven websites that use MySQL also use a Web scripting language like PHP to access information from the database. MySQL commands can be incorporated into the PHP code, allowing part or all of a Web page to be generated from database information. Because both MySQL and PHP are both open source (meaning they are free to download and use), the PHP/MySQL combination has become a popular choice for database driven websites.

* It's easy to use: While a basic knowledge of SQL is required—and most relational databases require the same knowledge—MySQL is very easy to use. With only a few simple SQL statements, you can build and interact with MySQL.
* It's secure: MySQL includes solid data security layers that protect sensitive data from intruders. Rights can be set to allow some or all privileges to individuals. Passwords are encrypted.
* It's inexpensive: MySQL is included for free with NetWare® 6.5 and available by free download from MySQL Web site.
* It runs on many operating systems: MySQL runs on many operating systems, including Novell NetWare, Windows\* Linux\*, many varieties of UNIX\* (such as Sun\* Solaris\*, AIX, and DEC\* UNIX), OS/2, FreeBSD\*, and others.

**PART 3: PROJECT MANAGEMENT PLAN**

**3.1 DEPENDENCIES**

Dependency information is defined as requirements and capabilities.

**3.1.1 REQUIREMENTS**

General hardware and web browser (latest version) and internet connection that must to have in the pc. Operating system is also needed. Example: Windows, Linux.

**3.1.2 CAPABILITY**

Must be capable to satisfy the system requirements.

**3.2 CONSTRAINTS**

The system is desired to handle all the activities of the students as well as the administrative level. Once the current and previous record is entered then the database will be updated for the new students automatically. This system is for hostel so that the primary users of the system are the students and the administrative penal. The main constraint is the system registration is valid if the department has been approve that student is valid for the department. The constraints are the amount of the university dues and the mess dues that are calculated in the system. These dues should be paid within 10 days. If anyone could not do the payment for some reason the system will notify the name of the student.

**3.3 RISK MANAGAMENT**

Risk Management is a practice with processes, methods, and tools for managing risks in a project. It provides a disciplined environment for proactive decision making to

* Assess continuously what could go wrong (risks)
* Determine which risks are important to deal with
* Implement strategies to deal with those risks

**3.3.1 RISK IDENTIFICATION**

Risk identification is a systematic attempt to specify threats to the project plan. By identifying known and predictable risks, we can take a first step toward avoiding them when possible and controlling them when necessary. To perform the risk identification, we categorized the risk into different categories as:

A. Project Risk

B. Technical Risk

C. Business Risk

D. Known Risk

E. Predictable Risk

F. Unpredictable Risk

A. **Project Risk:**

The Project Risk threatens the project plan. The project risks here are:

A1. Schedule slippage.

A2. Incomplete requirement specification.

A3. Change in user Requirements.

A4. Non-availability of required resources.

B. **Technical Risk:**

The Technical Risk threatens the quality and timeliness of the software to be produced. If the technical risk becomes a reality, implementation may become difficult or impossible. The technical risks identified in our project are:

B1. Unavailable library files.

B2. Problem in connection to database server.

B3. Problem in application server.

B4. Problem in browser view.

C. **Business Risk:**

The Business Risk threatens the viability of the software to be built.

C1. Project not delivered on time.

C2. Switching of database structure.

D. **Predictable Risk:**

The Predictable risks are extrapolated from past project experience. Since we have not done any live industry project during the academic years, the predictable risks were very few. The predictable risk include mainly:

D1. Language error predictions.

D2. Lack of End user support in future project enhancement.

E. **Unpredictable Risk:**

The Unpredictable risks are the joker in the deck. They can and do occur, but they are extremely difficult to identify in advance.

**3.3.2 Risk Analysis**

Each identified risk is considered and the effect and probability of each risk is identified during risk analysis.

**3.3.3 Risk Planning**

Risk planning lists the checkpoints that are made continually to find out situation where the risk can becomes reality.

* Plan entire schedule on paper in the beginning and follow it.
* Understand the scope from external guide to have the correct design.
* Find out proper documentation, manuals and guides from the person having the required knowledge.
* Schedule should not be delayed too much.
* Take backups regularly.

**3.4 FEASIBILITY STUDY**

The aim of the feasibility study activity is to determine whether it would be financially and technically feasible to develop the system or not. A feasibility study is carried out from following different aspects:

* Technical Feasibility
* Operational Feasibility
* Economical Feasibility

**3.4.1 TECHNICAL FEASIBILITY**

It determines if the system can be implemented using the current technology. This application developed for the automation of e-University management system is platform independent and has predefined functions and constraints such as to locate the charges, validating functions etc. so the project is technically feasible.

**3.4.2 OPERATIONAL FEASIBILITY**

The purpose e of this project which facilitates quick registration process. The activities of the system such as data entry, information retrieval, updating and deletion of records from various tables etc are made easy. The system has been developed for any user who wants to use this system. We have given a demo of our project and the users found the system friendly and easy to use. The interoperability with the existing system is also checked after uploading the website. So they may face certain problems in using the user interface. So keeping this consideration in mind we have provided field for each and every field on the forms. The administrator also may be non-technical, so the user interface is designed in such a way that it gets comfortable for the non-technical person to operate easily. So this project is operational feasible.

* + 1. **ECONOMIC FEASIBILITY**

The software’s we used were readily available. So as such we didn’t face any economical constrains. Three Financial Measurements for Economic Feasibility are:

* Net Present Value (NPV)
* Use discount rate to determine present value of cash outlays and receipts
* Return on Investment (ROI)
* Ratio of cash receipts to cash outlays
* Break-Even Analysis (BEA)
* Amount of time required for cumulative cash flow to equal initial and ongoing investment.

**Part 4: Design**

**4.1 DFD:**

**4.2 ERD:**

**4.3 Relational Schema:**

**4.4 Use case Diagram:**

**4.5 Sequence diagram:**

**4.6 Interface Design**

**Part 5: Implementation**

**5.1 Methods of software implementation**

Implementation of our software is done by using

1. PHP

2. HTML

3. JAVASCRIPT

4. MySQL

Internet is an important application in developing this industry because it cans interact between restaurant and customer. Internet has been becoming a powerful channel for business marketing and communication. And this Software can be access through the internet

**Html:**

Hypertext Markup Language (HTML) is the main markup language for creating web pages and other information that can be displayed in a web browser.

HTML elements form the building blocks of all websites. HTML allows images and objects to be embedded and can be used to create interactive forms. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. It can embed scripts written in languages such as JavaScript which affect the behavior of HTML web pages.

CSS: Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation semantics (the look and formatting) of a document written in a markup language. Its most common application is to style web pages written in HTML and XHTML

**PHP:**

PHP (Pre-Hypertext Processor) is a widely-used general-purpose scripting language that is especially suited for Web development and can be embedded into HTML.

**Mysql:**

MySQL is the world’s most popular open source database, enabling the costeffective delivery of reliable, high-performance and scalable Web-based and embedded database applications.

**5.2 Web Application:**

This is an online based software

**Part 6: Testing**

**6.1 Testing method:**

Software is tested from two different perspectives:

1. Internal program logic is exercised using “white box” test case design techniques.
2. Software requirements are exercised using “black box” test case design techniques.

In both cases, the intent is to find the maximum number of errors with the minimum amount of effort and time. In our project we use black box testing.Black-box testing is a method of software testing that examines the functionality of an application (e.g. what the software does) without peering into its internal structures or workings

* 1. **Testing Outcomes:**

Black-box testing attempts to find errors in the following categories:

* incorrect or missing functions,
* interface errors,
* errors in data structures or external database access,
* behavior or performance errors, and
* Initialization and termination errors.

**Part 7: Maintenance**

**7.1 Maintenance Cost:**

* + - * REQUIREMENTS ANALYSIS (3%)
      * SPECIFICATION (3%)
      * DESIGN (5%)
      * CODING (7%)
      * TESTING (15%)
      * OPERATIONS AND MAINTENANCE (67%)

**7.2 Reliability**

Reliability is the probability of failure-free operation over a specified time, in a given environment, for a specific purpose

**7.3 Availability**

Availability probability that a system, at a point in time, will be operational and able to deliver the requested service

**7.3 Security**

A system attribute which reflects the ability of the system to protect itself from external attacks (may be accidental or deliberate)

**7.3.1 Security terminology**

* **Asset:** something of value which has to be protected (software system, data used by that system)
* **Exposure:** possible loss or harm to a computing system (loss/damage to data, loss of time and effort if recovery is necessary after a security breach)
* **Vulnerability:** weakness in a computer-based system that may be exploited to cause loss or harm
* **Attack:** exploitation of a system’s vulnerability
* **Threats:** circumstances that have potential to cause loss or harm (see system vulnerability that is subjected to an attack)
* **Control:** protective measure that reduces a system’s vulnerability (e.g.: encryption)

**7.4 Portability**

The concept of software portability has different meanings to different people. To some, software is portable only if the executable files can be run on a new platform without change. Others may feel that a significant amount of restructuring at the source level is still consistent with portability.

Before we make the effort to make software portable, it is reasonable to ask why this may be a good idea. Here are a few possible reasons:

* There are many hardware and software platforms; it is not only a Windows world.
* Users who move to different environments want familiar software.
* We want easier migration to new system versions and to totally new environments.
* Developers want to spend more time on new development and less on redevelopment.

**7.5 Performance:**

Its performance is so high and fast. Which is also time consuming for user. The processing of result in a sufficiently rapid manner so that the results of the processing are available in time to influence the current activity or process being monitored or controlled. The processing is applied to the master file as they happen and result is obtained from the system on demand.

**Part 8: Disscussion**

**8.1Limitations**

The part of the system can be implemented using the current technology although some modifications had to be done at various places. At various places some alterations with the prototypes and functionalities would be done in order to work out the cost constraints and to cope with the scheduling constraints.

* In this system we have don’t have facility for attendance management of student.
* In this application search is limited to String or by number. Cannot do search by photo and figure prints.

**8.2 Future Enhancement**

We will try to provide data recovery facility in future. The whole system is bi-lingual at present and we will be extended this to other languages too with minor changes.

**Part 9: Conclusion**

Realizing a project of this nature is very exciting. However, the students encounter a lot a problem which we believe if looked into, will go a long way toward reducing the tension associated with the design implementation and construction of the project. In spite of the constraints encountered during the implementation of this project, the aim of my project is well accomplished.