Ums - software requirement specification srs

Software Engineering (Lovely Professional University)

Software Requirements Specification

For

LPU UMS

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Lovely Professional University

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CERTIFICATE: -

This is to certify that the thesis entitled “LPU UMS” submitted by Prabhleen kour, in partial fulfillment of the requirements for the award of Degree of Bachelor of Technology in Computer Science and Engineering at Lovely Professional University, Punjab is an authentic work carried out by them under my supervision and guidance. To the best of my knowledge, the matter embodied in the thesis
Has not been submitted to any other university institute for the award of any Degree.

Date:
1/03/2017

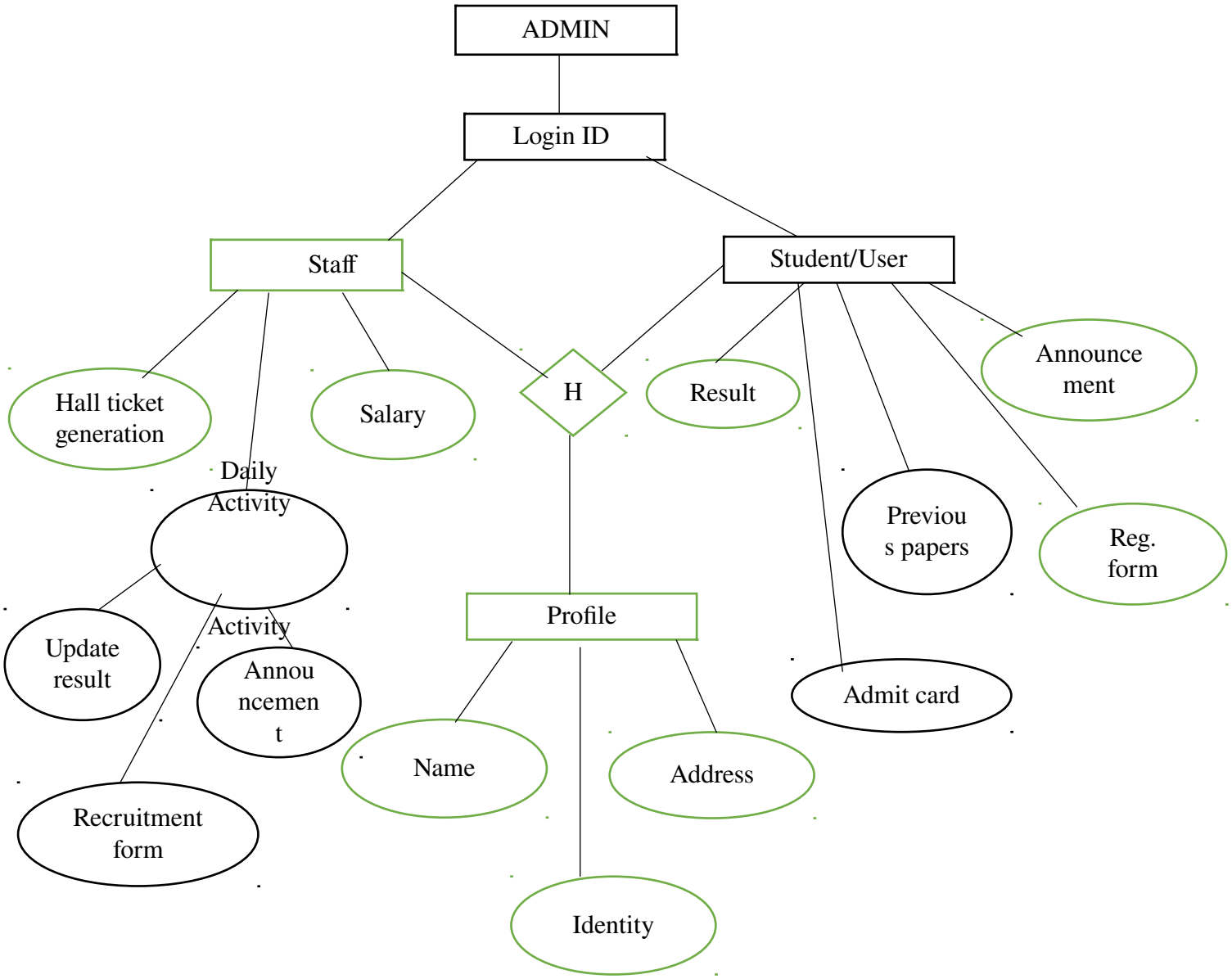
ACKNOWLEDGEMENT: -

I own a great many thanks to a great many people who helped and supported me during my project work. I express my sincere gratitude Mr.Vijaya Raju
Sir for guiding and correcting various documents of mine with attention and care. He has taken pain to go through the project and make necessary correction as
And when needed. Finally I would like to thank and friends for their help and assistance all through this project.

ABSTRACT: -

Lovely Professional University, Punjab is one of the reputed institutions for technical education in India. The main purpose of the project is intended to develop
A portal for management of Times of India a web based news. The portal provides a suitable and easy display for which large population around the world can learn or will have the knowledge about the world. Basically this is a crowd sourcing newspaper. The idea is anyone can send a news item using their web based gadget which is managed by administrator to whom the editor’s panel kept in charge for this to make it visible for the masses. This portal is developed using HTML, PHP & CSS technologies and SQL Server.

Entity Relationship Diagram For UMS: -



I. INTRODUCTION

Purpose:-

The main objective of this document is to illustrate the requirements of the project University Management System .This document describes the design decision, architectural design and the detailed design needed to implement the system. It provides the visibility in the design and provide the information needed for software support .The document gives the detailed description of both functional and non-functional requirements proposed by the client.

A. Intended Audience and Reading Suggestions

The document is intended for all the stakeholders' customer and the developer (designers, testers, maintainers). The reader is assumed to have basic knowledge of all the algorithms used to reduce the complexity and also have knowledge of all the basics which are used in the development and maintenance of the project or an online system and also some basic knowledge of Entity Relationship diagrams

B. Document Conventions, Definitions:-

The following are the list of conventions and acronyms used in this documentation.

- Administrator: - A login id representing a user with user administration privileges to the software.
- User: - A general login id assigned to users.
- Client: - Intended users for the software.
- SQL:-Structured Query Language used to retrieve or store the information in the database.
- ASP"- Active Server Pages: A Webpage formatted on the server and delivered to the browser.
- User Interface Layer: - The section of the assignment referring to what the user interacts with directly.
- Application layer: - This section referring the the Web Server where all computations are completed.
- Data Storage Layer: - This term refer to where all the data is being stored.
- Data flow Diagram: - It show the relationship or dataflow between the entities.
- Boolean: - A true /false statement.
- Interface: - Something used to communicate across different mediums.
- Unique keys; - Used to differentiate entities in database.
- Layers: - Represents the section of the project.
- SQL Server:- A server used to store the data in a well-organized format

C. Project Scope: -

The online university management system is developing for the schools of the university and used to replace the old paper work system. The software supports a computerized university management system network. The network enables Teachers, students to complete simple tasks via U.M.S that may be easily accessed to the authorized members at any time. The UMS identifies a USER by a login id which provided by the administrator and password. It collects information through the database by following the login id (e.g., profile, attendance, examination, fees payment). The software must handle concurrent accesses to the same account correctly.

II. OVERALL DESCRIPTION

A. Product Perspective

The proposed University Management System is an online University management system .This system will provide a view submit online payment

uploading various documents and other resources. This view will be based on the categories like attendance view and daily activities. Further the university management staff (faculty) can add/remove/update the resource or an automatic removal of accessing features when the time limit completes.

The system have also an ADMIN who have full-fledged rights with the regards to managing resources across branches. The user can view can submit, online payment, uploading various documents and information about their account etc. there are basically two types of users one is students and other are faculty members. Each user facilitates with a different account number having a profile along with a password for private use. The two type of user differ from each other due to the accessing limits to online University Management System

B. Product Feature:-

There are three types of different user who will be using this product

So, every one ha the different interfaces to use the interface..

- **University chancellor**. who will be acting as the administrator
- **Faculty Members** who are second level users accessing UMS.
- **Students of the university** who will be accessing the UMS online

The features that are available to the administrator are:

- Can create or delete the account.
- Can view the accounts.
- Can change the password.
- Can hide any kind of feature from both users.
- Insert/delete/edit the information of available on the UMS.
- Can access all the accounts of faculty and the students.

The features that are available to the faculty are:

- ✓ Can mark the attendance of the students online.
- ✓ Can create the continuous assessments for the students.
- ✓ Can view the online attendance off the students.
- ✓ Can submit the questions papers online.
- ✓ Can upload marks, assignments, reading material for the students.

The features that are available to the Students are:

- ➢ Can view the different types of the reading material and assignments are available in their account.
- ➢ Can pay their fees by online mode.
- ➢ Can view their marks as well as attendance.
- ➢ Can view and modify it profile but cam modify it to some limits range.

C. User classes and characteristics:-

There are various by various users for kind of user for the product .Usually web products are visited by various user for different reasons visited different reasons.

The user includes:-

- Chancellor who will be acting as the controller and he will have all the privileges of administrator.
- Faculty members who will be using the above features by accessing the UMS online.
- Students who will be using the above features by accessing the UMS online

Operating Environment:-

The product will be operating in windows environment. Also it will be compatible with the IE 6.0. Most of the features will be compatible with the Mozilla Firefox & Opera 7.0 or higher version. The only requirement to use this online product would be the internet connection

Design and Implementation Constraints: -

The Product is developed using ASP. The backend database for this SQL Server. The product is accomplished with login facility so that specific function is available to specific student.

User Documentation:-

The product will include user manual. The user manual will include product overview, complete configuration of the used software (such as SQL server), technical details, backup procedure and contact information which will include email address. The product will be compatible with the Internet Explorer 6.0 or higher. The databases will be created in the Microsoft SQL server 2000.

Assumptions and Dependencies:-

The product needs following third party product.
- Microsoft SQL server to store the database.
- ASP to develop the Product

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III. SPECIFIC REQUIREMENTS:-

A. Database Storage:-

*1) **Description and priority**:-*

Proposed Database is intended to store, retrieve, update, and manipulate information related to university which include

- ✓ Profile of both users
- ✓ Staff information
- ✓ Student details
- ✓ My account
- ✓ Online payment
- ✓ View attendance/marks/uploading of marks and assignments.

Stimulus / Response Sequences:-

Responses for Administrator:

The administrator can Login and Logout. When the Administrator Logs into the University management system. The system will check for validity of login .If the Login and password are valid, the response to this action is the administrator will be able to modify, view, add, deleting and all other functions that can be performed on the database

Functional requirement:-

This section gives the list of Functional and nonfunctional requirements which are applicable to the University Management System

Interface Requirements:-

This section describes how the software interfaces with other software products or users for input or output.

User Interfaces

This section Describes how this product interfaces with the user

GUI:-

Describes the graphical user interface if present. This section should
Include a set of screen dumps or mockups to illustrate user interface features.
1. Description
The user interface must be customizable by the administrator

2. Criticality
This issue is essential to the overall system. All the modules provided with the software must fit into this graphical user interface and accomplish to the standard defined.

3. Technical issues
In order to satisfy this requirement the design should be simple and all the different interfaces should follow a standard template. There will be the possibility of changing colors and images, plus switching between interfaces with the minimum impact for the users.

4. Risks
To reduce the circumstances under which this requirement might not able to be satisfied, all the designers must have been developed web sites previously and they must be aware of html restriction and cross browsers implementations before starting the designing. In order to reduce the probability of this occurrence the entire design team will be trained in basic html development and macromedia fireworks, this tool will be used instead of Photoshop.

5. Dependencies with other requirements

All user interfaces should be able to interact with the user management module and a part of the interface must be dedicated to the login/logout module

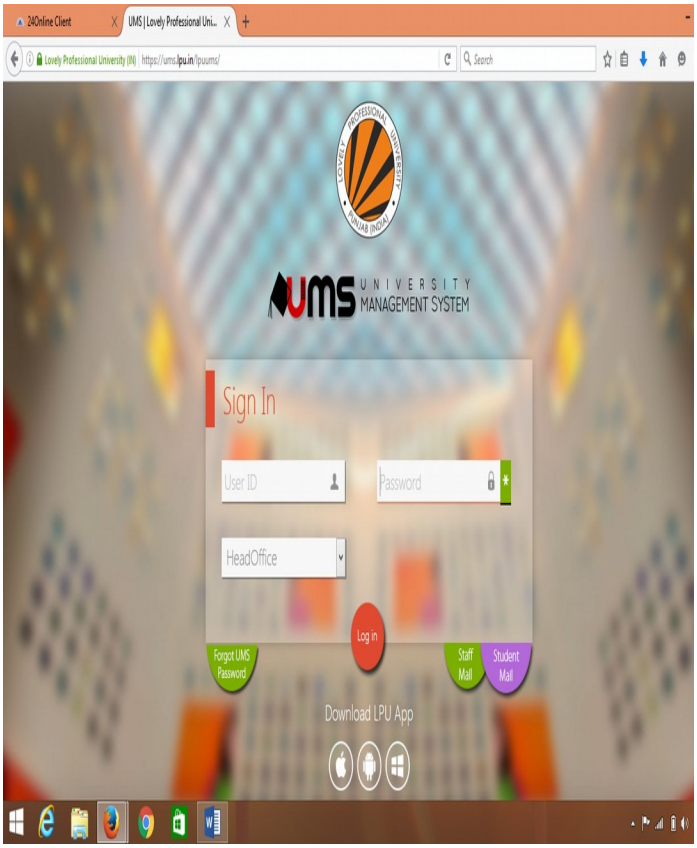
Input Requirements:-

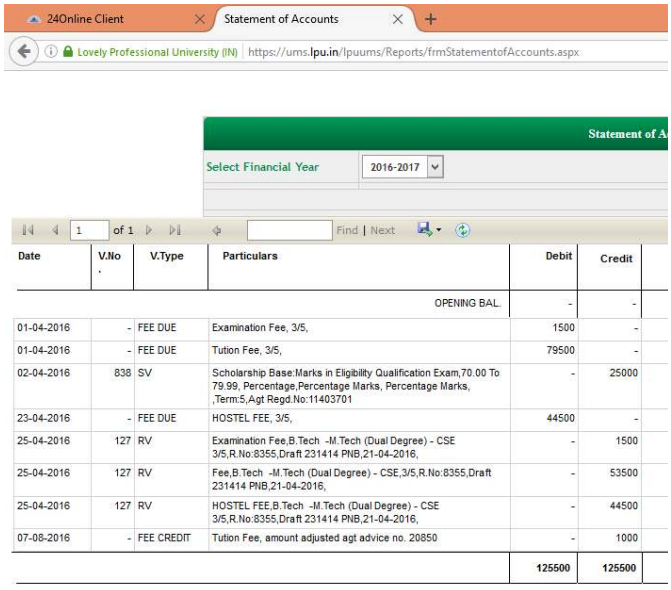
User access:
Each faculty member and student is assigned a unique identifier upon admission to the university. Both of them must know this. This identifying key maps to all his/her registration record information in the main registration system. Admitted and current students have their online registration accounts also enabled. Such account maybe disabled during his/her stay as a matriculated student and/or after graduation or separation From the University.
Uploading of data
Each faculty member should facilitates with uploading of data such assignments, their marks and other kind of reading material. Similarly such of option must be present their for students to upload their assignments.
Online payment
The students should have the facility to pay their payment online any kind of university fee charges so as there should be facility to check whether the entered code for payment is a valid code or not or in simple word a proper validation is required.

IV. External Interface Requirements

It include the non – functional requirements.

A. User Interfaces





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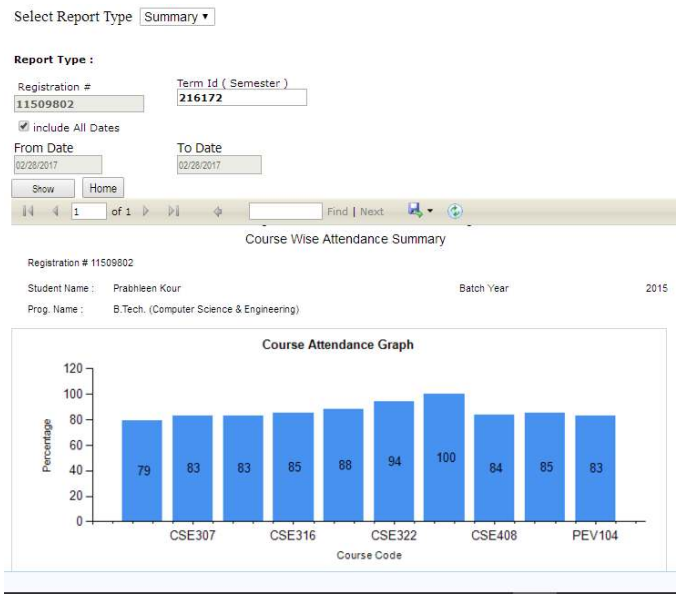
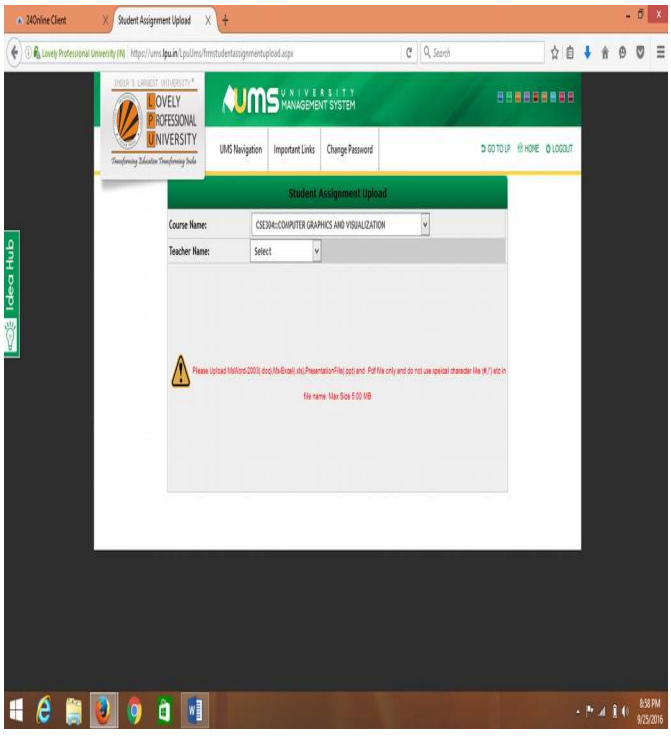
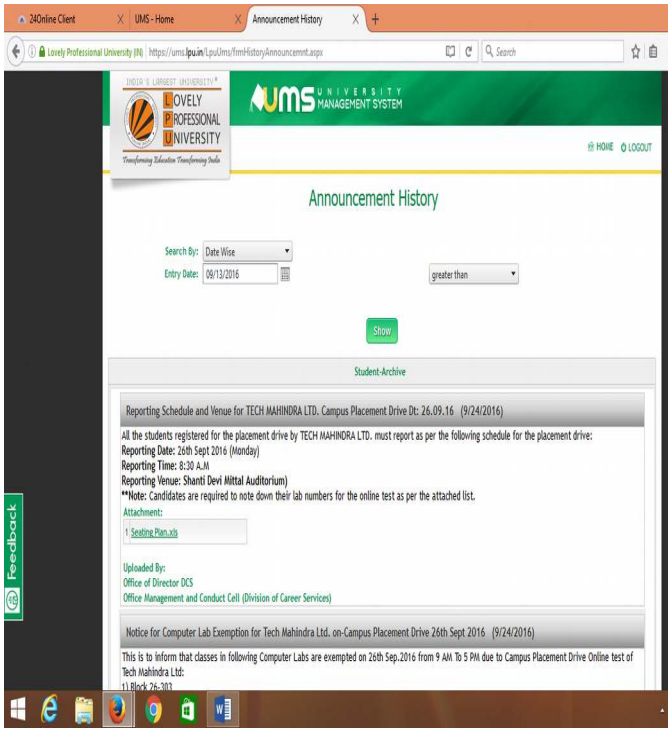
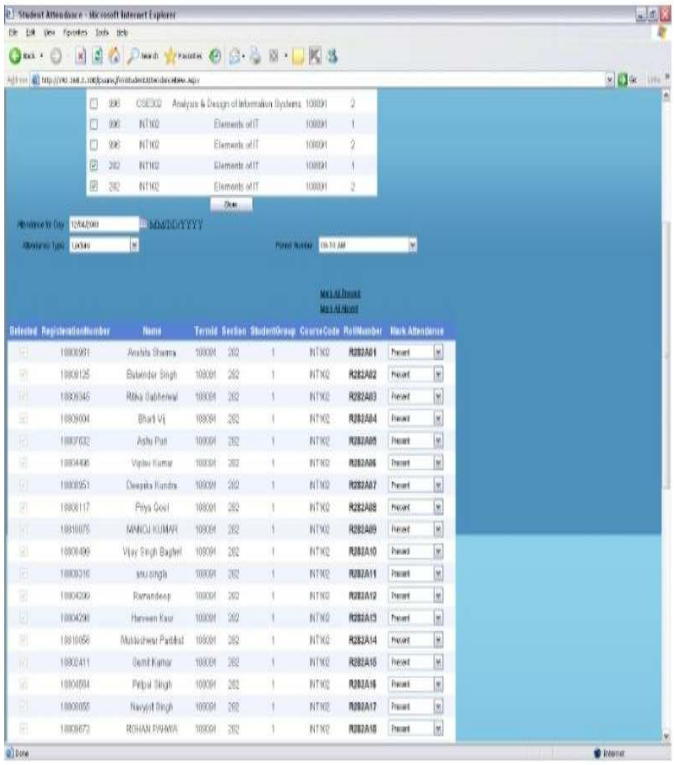
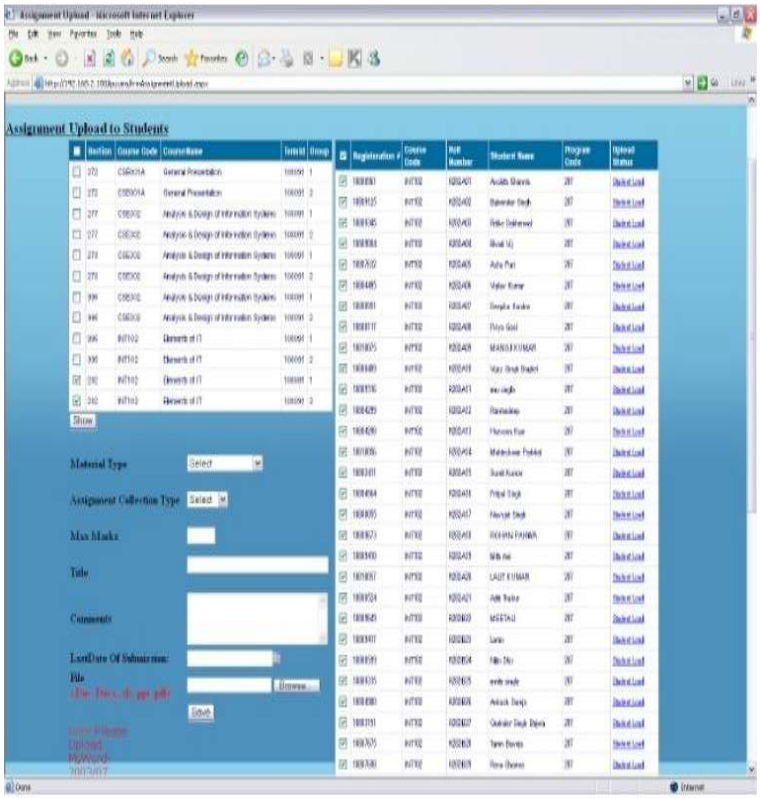
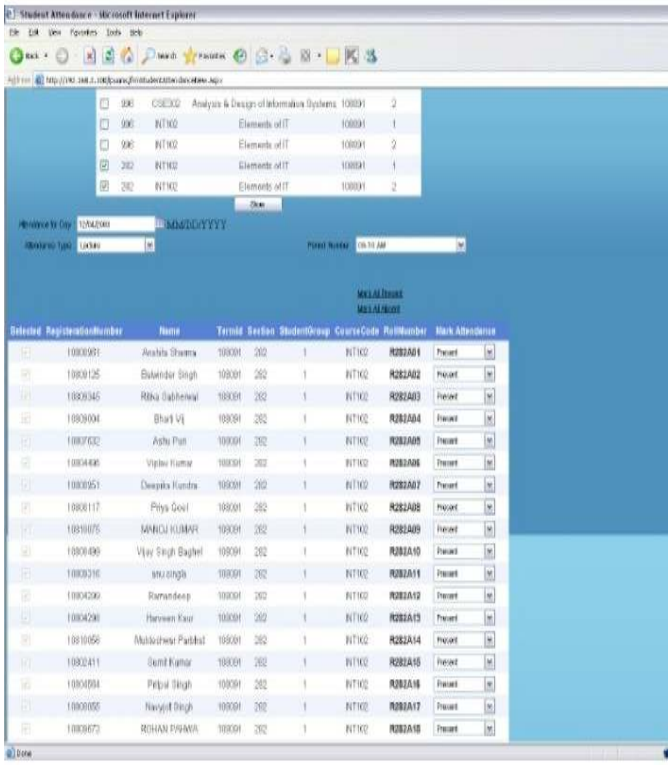


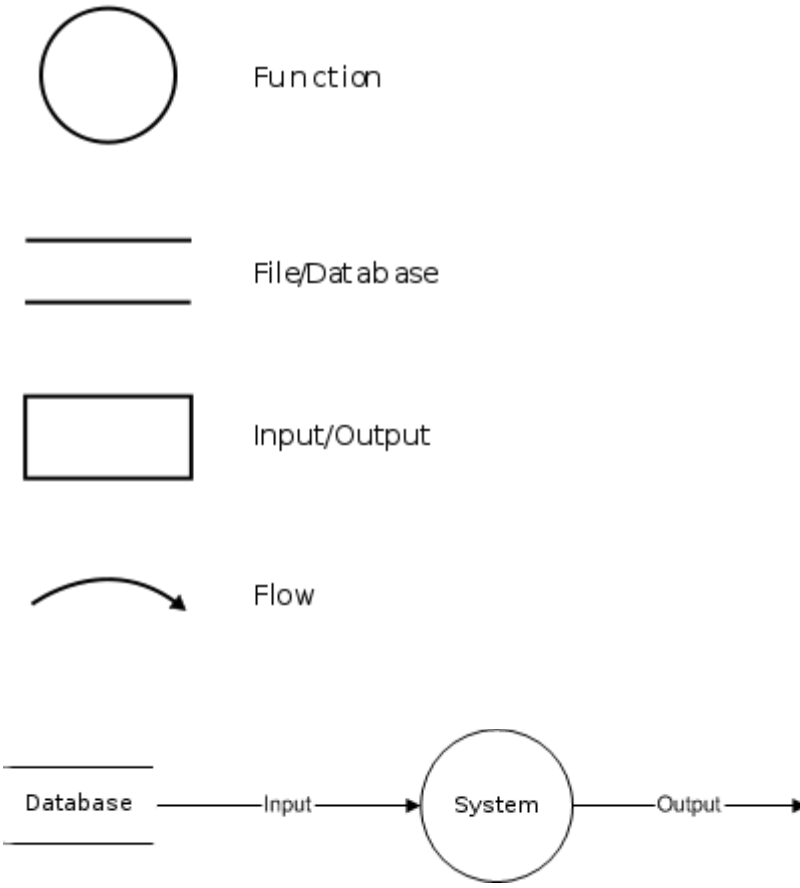












Data Flow Diagram : -

Data flow diagram is a graphical representation of data flow in an information system. It is capable of depicting incoming data flow, outgoing data flow and stored data. The DFD does not mention anything about how data flows through the system.

There is a prominent difference between DFD and Flowchart. The flowchart depicts flow of control in program modules. DFDs depict flow of data in the system at various levels. DFD does not contain any control or branch elements.

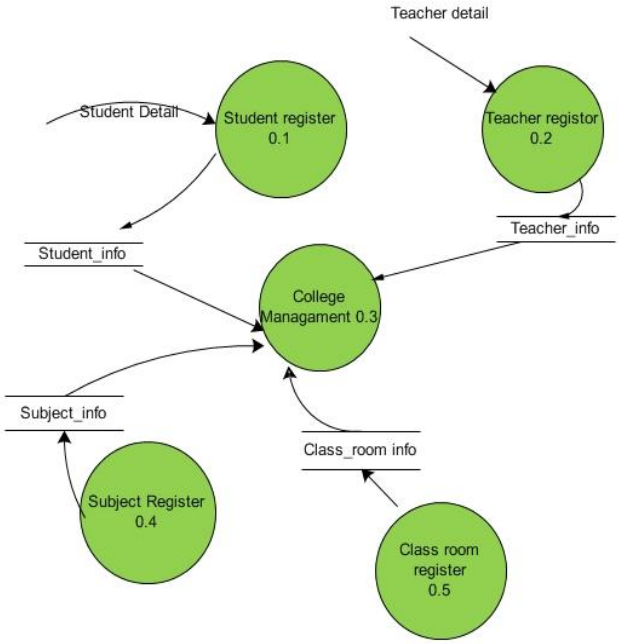
Types of DFD Data Flow Diagrams are either Logical or Physical.

- Logical DFD - This type of DFD concentrates on the system process and flow of data in the system. For example in a Banking software system, how data is moved between different entities.
- Physical DFD - This type of DFD shows how the data flow is actually implemented in the system. It is more specific and close to the implementation.

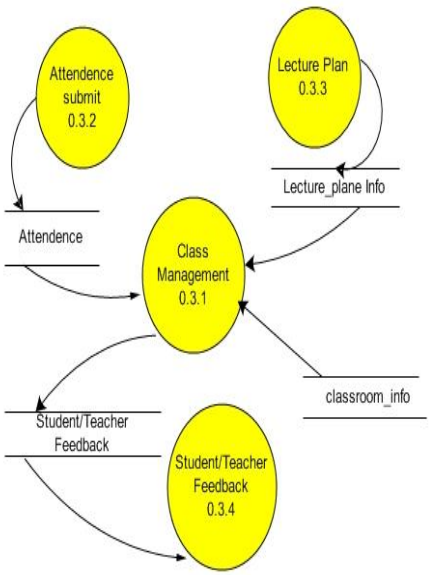
Importance of DFDs in a good software design

The main reason why the DFD technique is so popular is probably because of the fact that DFD is a very simple formalism – it is simple to understand and use. Starting with a set of high-level functions that a system performs, a DFD model hierarchically represents various sub-functions. In fact, any hierarchical model is simple to understand. Human mind is such that it can easily understand any hierarchical model of a system – because in a hierarchical model, starting with a very simple and abstract model of a system, different details of the system are slowly introduced through different hierarchies. The data flow diagramming technique also follows a very simple set of intuitive concepts and rules. DFD is an elegant modeling technique that turns out to be useful not only to represent the results of structured analysis of a software problem, but also for several other applications such as showing the flow of documents or items in an organization.

Symbols used in DFD



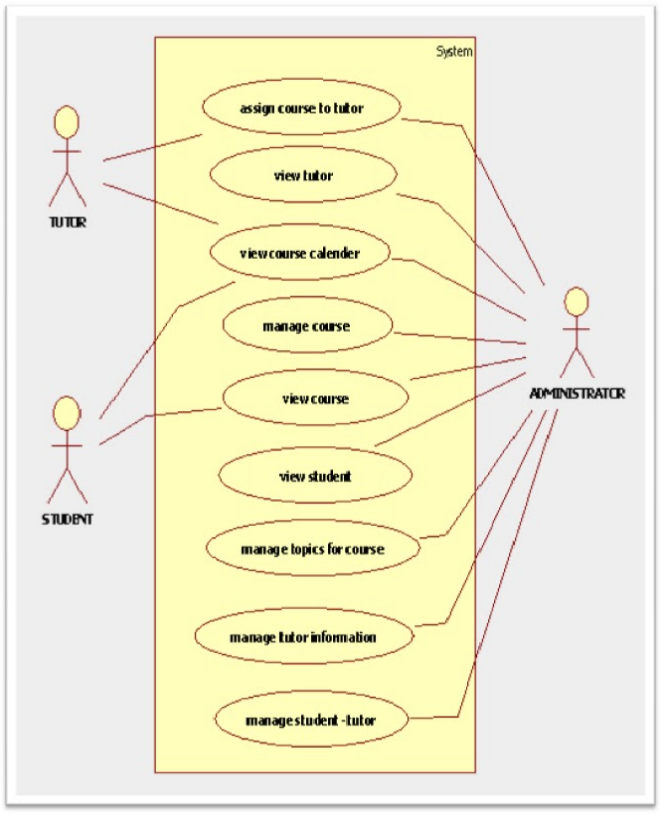
DFD Level 1



DFD Level 2

Unified Modeling Language (UML):-

UML, as the name implies, is a modeling language. It may be used to visualize, specify, construct, and document the artifacts of a software system. It provides a set of notations (e.g. rectangles, lines, ellipses, etc.) to create a visual model of the system. Like any other language, UML has its own syntax (symbols and sentence formation rules) and semantics (meanings of symbols and sentences). Also, we should clearly understand that UML is not a system design or development methodology, but can be used to document object-oriented and analysis results obtained using some methodology.



Coding:-

The objective of the coding phase is to transform the design of a system into code in a high level language and then to unit test this code. The programmers adhere to standard and well defined style of coding which they call their coding standard. The main advantages of adhering to a standard style of coding are as follows:

- A coding standard gives uniform appearances to the code

  Written by different engineers
- it facilitates code of understanding.
- promotes good programming practices.

For implementing our design into a code, we require a good high level language. A programming language should have the following features:

Characteristics of a Programming Language

- Readability: A good high-level language will allow programs to be written in some ways that resemble a quite-English description of the underlying algorithms. If care is taken, the coding may be done in a way that is essentially self-documenting.
- Portability: High-level languages, being essentially machine independent, should be able to develop portable software.
- Generality: Most high-level languages allow the writing of a wide variety of programs, thus relieving the programmer of the need to become expert in many diverse languages.
- Brevity: Language should have the ability to implement the algorithm with less amount of code. Programs expressed in high-level languages are often considerably shorter than their low-level equivalents.
- Error checking: Being human, a programmer is likely to make many mistakes in the development of a computer program. Many high-level languages enforce a great deal of error checking both at compile-time and at run-time.
- Cost: The ultimate cost of a programming language is a function of many of its characteristics.

B. Hardware Interfaces

Hardware Interfaces Server Side:

- ✓ Operating System: Windows 9x/ xp, Windows ME
- ✓ Processor: Pentium 3.0 GHz or higher
- ✓ RAM: 256 Mb or more
- ✓ Hard Drive: 10 GB or more

Hardware Interface Client side:

- ✓ Operating System: Windows 9x or above, MAC or UNIX.
- ✓ Processor: Pentium III or 2.0 GHz or higher.
- ✓ RAM: 256 Mb or more

Software Interfaces

- ✓ Database: SQL Server.
- ✓ Application: ASP (Active Server Pages)

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V. Other Nonfunctional Requirements

A. Performance Requirements

The proposed system that we are going to develop will be used as the Chief performance system within the different campuses of the university
Which interact with the university staff and students. Therefore, it is expected that the database would perform functionally all the requirements that are specified by the university

5.2 Safety Requirements:-

The database may get crashed at any certain time due to virus or operating system failure. Therefore, it is required to take the database backup.

5.3 Security Requirements

We are going to develop a secured database for the university. There are different categories of users namely teaching
Administrator, Staff members and students etc. Depending upon the category of user the access rights are decided. It means if the user is an administrator then he can be able to modify the data, delete, append etc. All other users other than University Staff only have the rights to retrieve the information about database.

A. Software Quality Attributes

The Quality of the database is maintained in such a way so that it can be very user friendly to all the users of the database

5.5 Hardware Constraints:-

The system requires a database in order to store persistent data. The database should have backup capabilities

5.6 Software Constraints: -

The development of the system will be constrained by the availability of required software such as web servers, database and development tools. The availability of these tools will be governed by the Lovely Professional University.

5.7 Design Constraints:-

The system must be designed to allow web usability. That is, the system must be designed in such a way that will be easy to use and visible on most of the browsers

VI. OTHER REQUIREMENTS

6.1 Availability:-

The system should be available at all times, meaning the user can access it using a web browser, only restricted by the down time of the server on which the system

Runs. In case of a of a hardware failure or database corruption, a replacement page will be shown. Also in case of a hardware failure or database corruption, backups of the database should be retrieved with the MySQL server and saved by the administrator.

6.2 **Maintainability:-**

MySQL is used for maintaining the database and the Apache server takes care of the site. In case of a failure, a re-initialization of the program is recommended.

6.3 Portability:-

The application is Linux-based and should be compatible with other systems. Apache, PHP and MySQL programs are practically independent of the OS-system which they communicate with. The end-user part is fully portable and any system using any web browser should be able to use the features of the application.

6.4 ACID Properties:-

The Online fees payment software must be able to use several data formats according to the data formats that are provided by the data bases of different banks. A transaction should have all the properties of a data base transaction (Atomicity, Consistency, Isolation, and Durability).

CONCLUSION:

After processing through all phases of the system Development life cycle, the portal is developed. In Future it will be hosted on the internet server which Will be accessed by all people in the world and can View the site and learn as much as news and Information about the university. The Administrator or Editor who will be assigned for editing or managing Or controlling will be given the secure login Information and will change or modify the website.As per the requirements.