University Department Information System

Software Requirements Specification

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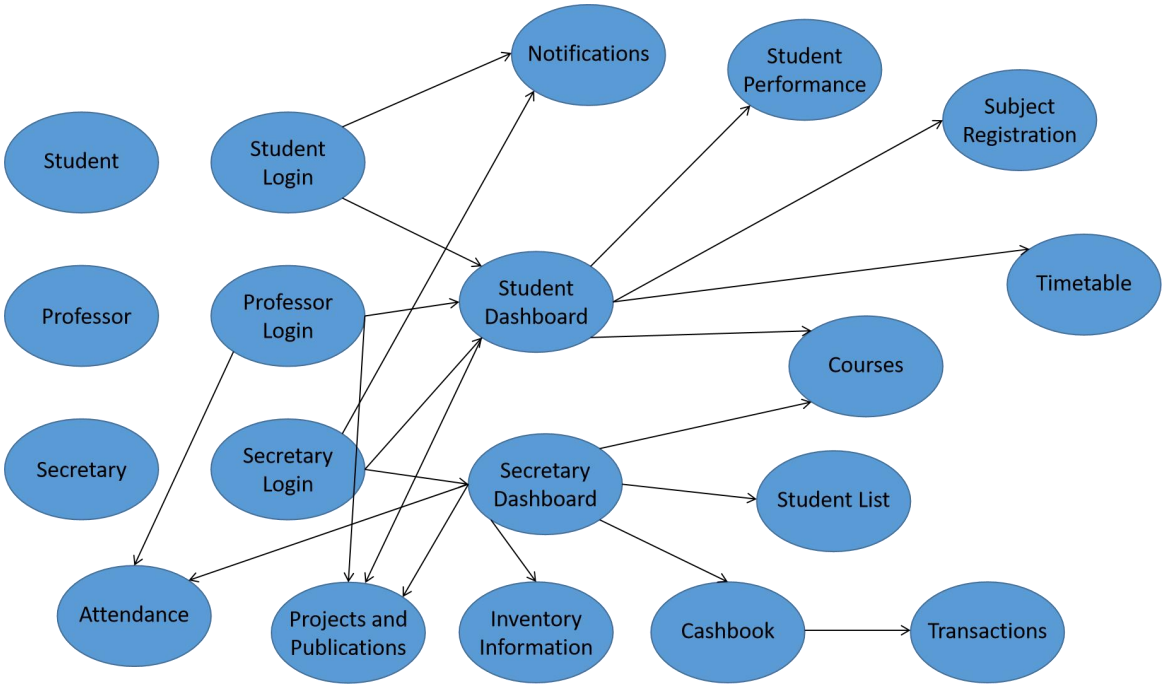
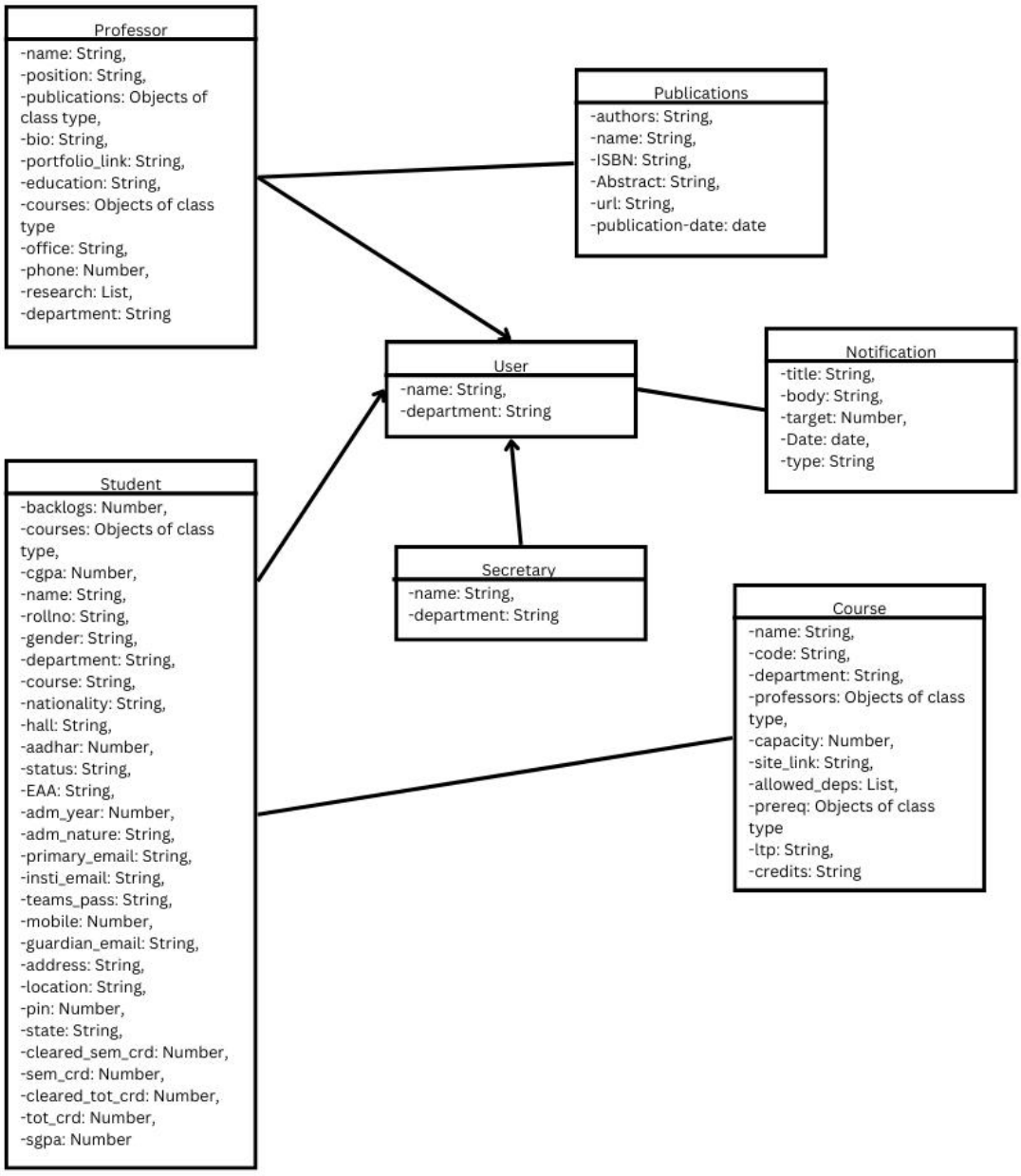


2. Class Diagram



Introduction

1.1. Purpose

The main objective of this document is to illustrate the requirements of the project **University Department Information system**. This document describes the design decisions, architectural design and the detailed design needed to implement the system. It provides the visibility in the design and provides information needed for software support. The document gives the detailed description of the both functional and non functional requirements proposed by the client. The document is developed after a number of consultations with the client and considering the complete requirement specifications of the given Project. The final product of the team will bemeeting the requirements of this document.

1.2. Document Conventions

The following are the list of conventions and acronyms used in this document and the project as well:

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 information from a database
- ✓ **SQL Server:** A server used to store data in an organized format
- ✓ **ASP:** Active Server Pages: A Web Page formatted on the server and delivered to the browser.

- ✓ **Layer:** Represents a section of the project
- ✓ **User Interface Layer:** The section of the assignment referring to what the user interacts with directly.
- ✓ **Application Logic Layer:** The section of the assignment referring to the Web Server. This is where all computations are completed.
- ✓ **Data Storage Layer:** The section of the assignment referring to where all data is recorded
- ✓ **Data flow diagram:** It shows the dataflow between the entities.
- ✓ **Use Case:** A broad level diagram of the project showing a basic overview
- ✓ **Boolean:** A true/false notation
- ✓ **Interface:** Something used to communicate across different mediUDIS
- ✓ **Unique Key:** Used to differentiate entries in a database

1.3 Scope

Online Project Marking System is developing for School of Computing, University of Portsmouth and used to replace old paper work system and PUDIS. OPMS is to build upon the existing web-based project marking system PUDIS in order to implement the project marking process and allocating supervisor/ideas to students. This increase in efficiency of project marking, audit trails of marking process, give feedback to student, finally, publicationand email student result. It provides a mechanism to edit the online marking form which makes the system is flexible.

1. Overall Description

1.1 Product Perspective

The proposed **University Management System** is an on-line University Management System. Department offices in different universities do a lot of book-keeping activities and this is a software which aims to automate those activities. Further the department secretary can add/update/remove the

resources or an automatic removal of accessing features when the time limit completes.

The secretary has full-fledged rights with regards to managing resources across branches – such as entering data regarding student registrations. The secretary can filter students based on roll number, update their grading information and manage department inventories, keeps track of department accounts and the research projects and publications.

1.2 Product Features

There are three different users who will be using this product:

- Department secretary who will be acting as the administrator.
- Faculty professors who are second level users accessing UDIS.
- Student of the University who will be accessing the UDIS online.

The features that are available to the Administrator are:

- ✓ The administrator has the full fledged rights over the UDIS.
- ✓ Can view the accounts of students.
- ✓ Insert/delete/edit the information of available on UDIS.
- ✓ Can access all the accounts of the faculty members/students.
- ✓ Enter grading information for the students
- ✓ Update department accounts that manage grants and department bills
- ✓ Key in department research projects and publications by faculties.

The features available to the Faculty members are:

- ✓ Can mark the attendance of students online.

- ✓ Can view the attendance online.
- ✓ Can upload marks, assignments, reading materials for

students.The features available to the Students are:

- ✓ Can view The different categories of assignments available in theiraccount.
- ✓ Can view their marks.
- ✓ Can view the various reading material.
- ✓ Can view attendance.
- ✓ Can view and modify its profile but can modify it to some limited range.
- ✓ Can pay their fee online.

1.3 User Classes and Characteristics

There are various kinds of users for the product. Usually web products arevisited by various users for different reasons.

The users include :

- ✓ Secretary who will be acting as the controller and he will have allthe privileges of administrator.
- ✓ Faculty members who will be using the above features by accessingthe UDIS online.
- ✓ Students who will be using the above features by accessing theUDIS online.

1.4 Operating Environment

The software is an online based portal and is thus compatible o most well known browsers.

1.5 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.

1.6 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.

1.7 Assumptions and Dependencies

The product needs following third party product.

- ✓ Microsoft SQL server to store the database.
- ✓ ASP to develop the Product

2. System Features

3.1. Database – Storage

3.1.1. 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

3.1.2. Stimulus / Response Sequences

Responses for Administrator: The administrator can Login and Logout. Whenthe 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.

3.2. Functional Requirements

This section gives the list of Functional and non functional requirements whichare applicable to the University Management System.

3.2.1 Interface Requirements

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

3.2.1.1 UserInterfaces

The product will consist of a web-application with which the user will interact. The students, professors and secretary have different dashboards based on their functionalities and will be accessible by using their login credentials leading them to their respective user dashboards.

- Homescreen
  - Login
    - Email
    - Password
  - Signup
    - Name
    - Address
    - User-type : Student, professor or secretary
- Secretary[Admin]
  - Personal Details
  - List of registered students.
  - Transaction History

- View Inventory
- Manage department bank accounts

Professor

- Personal Details
- Add a new project or publication
  * Add title
  * Add description

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. Similarlysuch 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.

3. Non Functional Requirements

4.1. User Interfaces

Hardware Interfaces

The hardware interfaces for the online portal are listed below:

- The portal can be used on any platform or PC which has a proper internet connection.
- Compatible web browser is required to avoid any problems.

4.2. Software Interfaces

- ✓ **Database:** SQLite Server.
- ✓ **Server :** Django
- ✓ **Frontend:** Embedded Javascript Templates(EJS), JQuery with Bootstrap in the client side

4.3. Communications Interfaces

All the communications will be done via the web-browser with the standard HTTP protocol.

Dialup or Broadband Connection with a Internet Provider.

6.Other Nonfunctional Requirements

5.1. 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.

5.4. 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.