Web Application for CSE Department

A Report for the Evaluation of MTE PBL Web Tech

Student Name: Sumit Kumar
Enrolment No: 1713101611

Under the Supervision of
S. Kumar – Assistant Professor

School of Computing Science and Engineering
Greater Noida, Uttar Pradesh
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Table of Content

1. Introduction:

This section gives a scope description and overview of everything included in this SRS document. Also, the purpose for this document is described and a list of abbreviations and definitions is provided.

1.1 Purpose:

The purpose of this document is to give a detailed description of the requirements for the Web Application for the CSE Department of Galgotias University. The focus here is Galgotias University Educational requirement It will illustrate the purpose and complete declaration for the development of web application. It will also explain system constraints, interface and interactions with other external applications.

1.2 Project Scope:

This web application will be an online portal or website for any Galgotias University focusing on the CSE Department of the University. More specifically to design and develop a simple and website which shall cater need for the application for the department. The system shall provide features to the user of an institute to gather information about placement and upcoming events for the CSE department of the university. Currently due to lack of specific website for the department the many student Don't get all the information. Website contain the list of the faculty member along with their field of Specialization so that is become easy for the student to directly contact for their project work.

1.3 Definitions, Acronyms and Abbreviations:

- **Web Application**: A web application is computer program that utilizes the web browser and the web technology to perform task over the internet.
- **System**: A System refer to the existing application.
- **Administrator**: Administrator is the user who have all the admin privileges who can add data and modify the data and user of the website.

Acronyms:

DB	**Database**
DDB	**Distributed Database**
ER	**Entity Relationship**

1.4 Reference:

- https://krazytech.com/projects/
- https://www.djangoproject.com/

2. Overall Description:

2.2 Product Perspective:

Web Application for CSE is meant to serve as a common platform where management of everyday academic tasks can be carried out conveniently by the department of computer science making it more user friendly and to promote the networking among the student and faculty member of the department

2.2.1 System interface:

For development purpose Django is bundled with light weight WSGI server which is written in python. This is only for development purpose. For production environment, you can have various options. Apache, Gunicorn, Nginx.

2.2.2 User interface:

The new system shall provide a very intuitive and simple interface to the user and the administrator, so that the user can easily navigate through pages, list of faculty members, groups , placement news, internship offers, pay the collage event fee online through Paytm, find resources and recommendation by the faculty member.

2.2.3 Hardware interface:

Server side: The web application will be hosted on a web server which is listening on the web standard port, port 80.

Client side: Monitor screen – the software shall display information to the user via the monitor screen Mouse – the software shall interact with the movement of the mouse and the mouse buttons. The mouse shall activate areas for data input, command buttons and select options from menus. Keyboard – the software shall interact with the keystrokes of the keyboard. The keyboard will input data into the active area of the database

2.2.4 Software interface:

a) **Server side** An Apache web server will accept all requests from the client and forward it accordingly. A database will be hosted centrally using MySQL.

b) **Client side** An OS which is capable of running a modern web browser which supports JavaScript and HTML5.

2.3 User Characteristics:

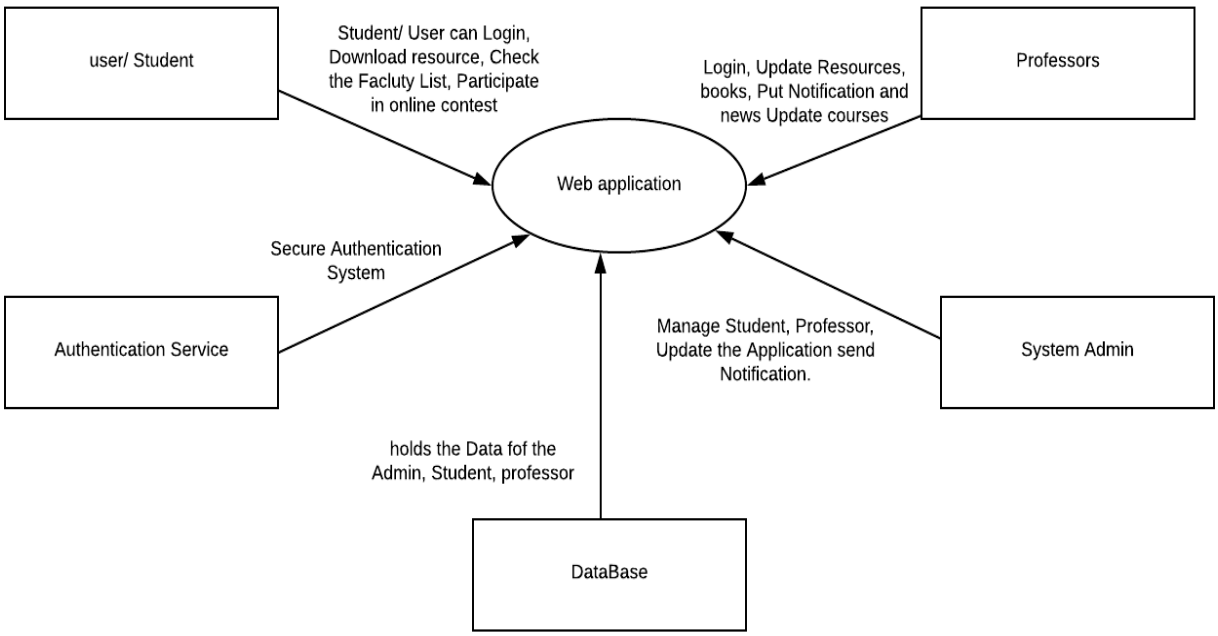
Students: Students are the primary consumers of an academic portal. They are accessing information posted by professors, uploading assignments and project files, and discussing concepts.

Professors: Professors are the primary content administrators of an academic portal. They are uploading files, links, and multimedia, and grading assignments in addition to creating new places for students to discuss and collaborate.

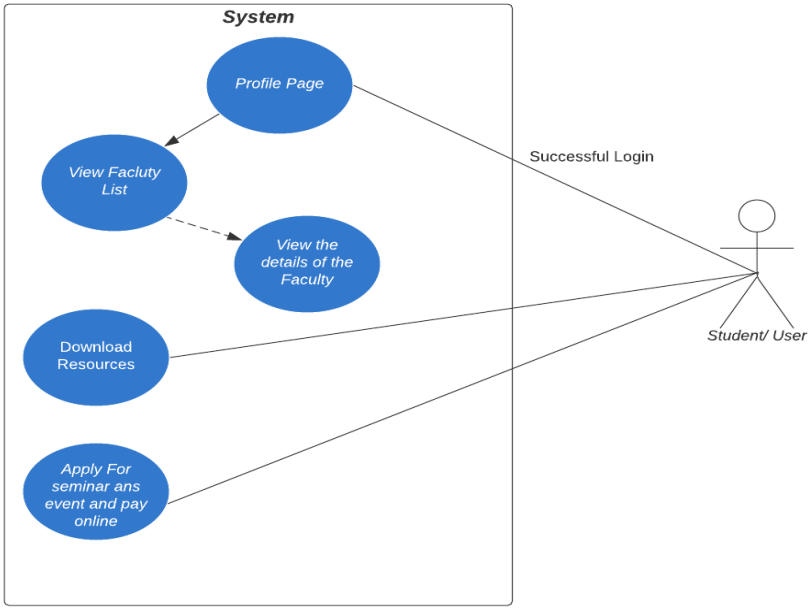
System Administrators System administrators are primarily responsible for maintaining the academic portal. They contribute minimally to the courses themselves, but spend more time modifying the system's configuration and making appropriate updates.

2.4 Product Function:

2.4.1 Context Diagram:



2.4.2 Use Case Diagram:



Use case Diagram for the Student / User

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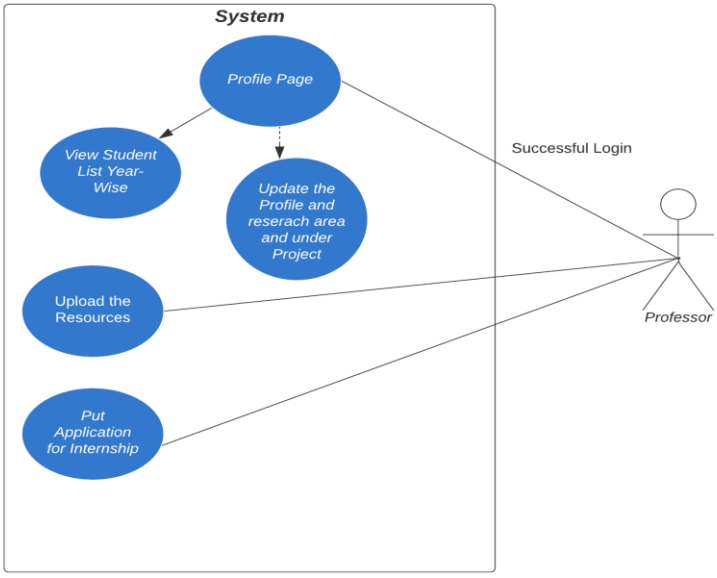
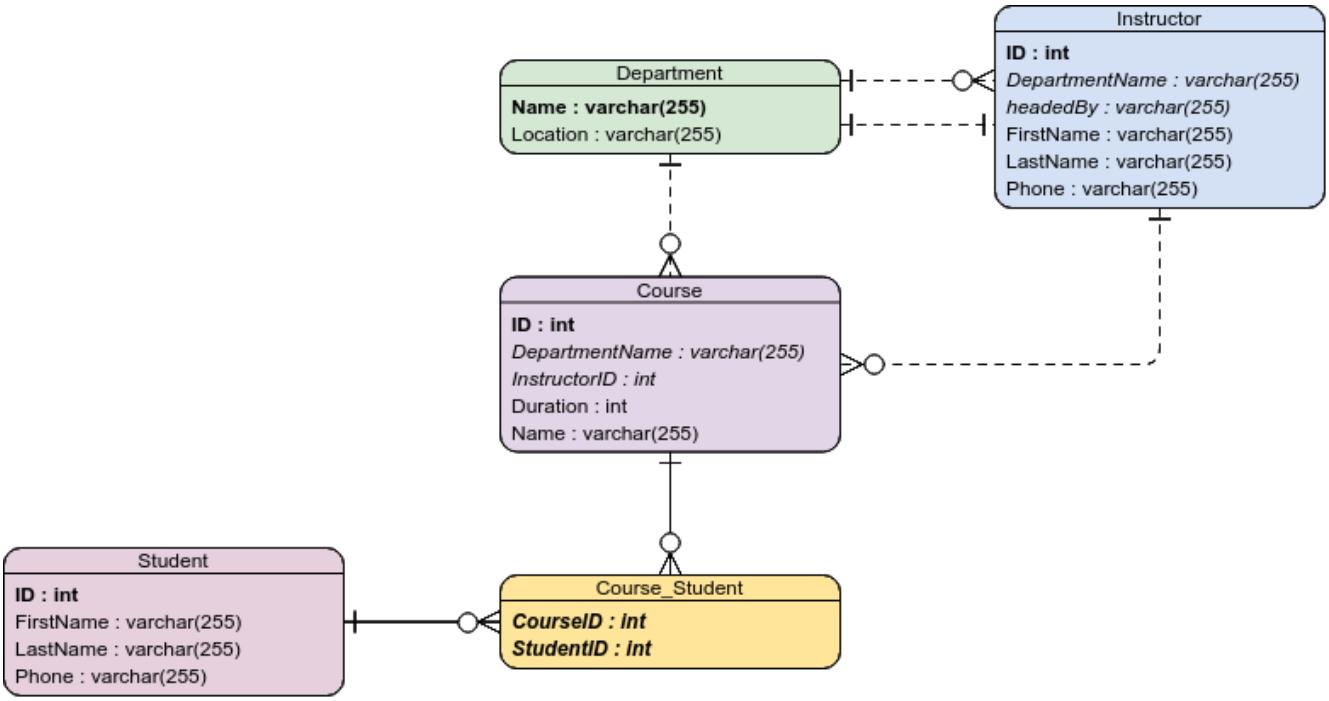


2.4.2 Data Flow Diagram:



2.5 Constrains:

2.5.1 User Interface Constraints: Using this system is fairly simple and intuitive. A user familiar with basic browser navigation skills should be able to understand all functionality provided by the system.

2.5.2 Hardware Constraints: The system should work on most home desktop and laptop computers which support JavaScript and HTML5.

2.5.3 Software Constraints: The system will be intended to run on Firefox 4 and above, Google Chrome 10 and above and Internet Explorer 8 and above.

2.5.4 Data Management Constraints: System shall be able to interface with other components according to their specifications.

2.5.5 Operational Constraints: The system is limited by its operating server in terms of the maximum number of users it can support at a given time.

2.6 Project Dependency:

- **django==1.11.0**
- **bpython==0.12**
- **django-braces==0.2.1**
- **django-model-utils==1.1.0**
- **requests==1.2.0**
- **stripe==1.9.1**
- **dj-database-url==0.2.1**
- **django-oauth2-provider==0.2.4**

3. Functional Requirements:

3.1 Use Case Scenario

1. Use Case Scenario 1: User Login

Purpose	**User logs in to system using existing profile.**
User	**A user with an existing profile.**
Input Data	**Profile username and password.**
Output Data	**Profile table data and user information.**
Pre-conditions	**User is not logged in to a profile, input profile exists in data base, user password matches profile**

2. Use Case Scenario 2: News and Notification update

Purpose	**Admin update the news and notification from the admin panel**
Admin	**with an existing profile.**
Input Data	**Profile username and password.**
Output Data	**Profile table data and user information and fields to update the changes.**

Pre-conditions	**User is not logged in to a profile, input profile exists in data base, user password matches profile, add the changes updated in the database**

3. Use case Scenario 3: Resource Download

Purpose	**User can download the resources like e-books sample research paper.**
User	**User with an existing profile or anyone.**
Input Data	**Profile username and password for user**
Output Data	**Profile table data and user information and fields to update the changes.**
Pre-conditions	**User is not logged in to a profile, input profile exists in data base, user password matches profile, and provide the user with link to download the resources.**

4. Non-Functional Requirements:

4.1 Performance Requirement:

The system should support at least 200 concurrent users. This statement provides a general sense of reliability when the system is under load. It is important that a substantial number of users be able to access the system at the same time, since this portal is important to the courses that employ it. The times when the system will be under the most stress is likely during simultaneous login and download of resource. Therefore, it must be able to handle at least 200 concurrent users.

4.2 Safety Requirement:

If there is extensive damage to a wide portion of the database due to catastrophic failure, such as a disk crash, the recovery method restores a past copy of the database that was backed up to archival storage (typically tape) and reconstructs a more current state by reapplying or redoing the operations of committed transactions from the backed up log, up to the time of failure. For safety the data storage can be moved to the cloud with full backup of data.

4.3 Security Requirement:

- Passwords will be saved encrypted in the database in order to ensure the user's privacy.
- The user's IP will be logged.
- The system will be protected against vulnerabilities such as SQL injection attacks.

4.4 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.