CS 251 Course Project Presentation

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IITB-Portal : Overview

Abstract

IITB-Portal is a website designed to help students, both in-campus and outside, to efficiently learn courses in which they are interested. Also to extrapolate their interests and be a little competitive while learning. The portal will help students by providing framework for online test taking.

Introduction

How about a website which would serve as an online instructor for the students regarding their current courses? Or as a guide for the students who wish to practise for some courses based on their interests? Or just an aid for the confused students. IITB-Portal is an idea for these purposes which we wish to implement for our SSL Project.

Motivation

We don’t know what we are actually interested in.. And if we are interested in something, can we really do it? Students should be guided into their academic future on basis of their interests and capabilities.

Here at IITB we have so many things to learn, so many projects and research work running. We want to give students exposure to almost all Courses, Projects, events and talks in which they are interested.

Also keeping track of all academic activities under one roof will help the students to manage all courses and projects.

Literature Survey - Prior Artwork

Similar websites :

1. Coursera
2. MITcourseware
3. Moodle
4. Bodhitree
5. Spanedea

Problem Statement

To make a small recommendation system for our website.

The feed of a student profile should be sorted according to the relevance of it to the student. The student will be asked for his course-interests after regular intervals and new courses and posts will be suggested automatically.

To provide online framework for attempting quizzes given by professors to help students in improving their grades. To make progress reports more informative and helpful based on other peer's performances in same courses.

To keep a record of courses and quizzes completed for the students referral. To keep a track of events related to interests.

To make website as user friendly as possible.

Software Requirements

1. HTML and CSS
2. Django
3. PHP
4. MySQL
5. Python
6. Javascript
7. Doxygen

Implementation

Website has different features for different users

1. Student Profile
    a. IITB student (IIT courses added by default)
    b. Non IITB student
2. Professor Profile

Login and Sign up

-->All the students(IITB + non IITB) students will have to register(Sign up) on the website.

-->If the student is from IITB then all the registered courses on ASC will appear on our website.(if allowed and possible)

-->Else the student will be asked for the courses which they are pursuing and we will also suggest some courses according to the interest of the student.

Implementation - Information and Database

What information we will need from the user :

1. His/her basic information, Courses (Registered)
2. His/her Interests and Skills

Database contains :

1. All courses and their study material (uploaded by professor)
2. All quizzes in different courses, event information, posts. (uploaded by professor or admins)
3. All information about users

Implementation - Student Interface

1. News feed (Home) - sorted according to relevance of post/event to the user.
2. Courses - Table of all courses he/she has registered for.
   For each course the contents are :
   a. Course material
   b. Course quizzes and assignments - Auto evaluator, file upload and storage on database.
   c. Grades and Progress - Performance analysis and comparison
   d. Extra quizzes and course material
3. Other Courses and Projects - List of all courses and Projects
   which are currently running (Sorted by relevance).
4. Student Profile - Here all his/her interests and skills and other useful information will appear.

Implementation - Framework for online test

1. The questions for the test would be uploaded by the professors' profiles for each subtopic of each course which we would store on our database.
2. The student taking the tests (which could be subjective or objective) would just have to choose from the tests available which would then be graded automatically according to the solutions given by the the 'Prof-ile'.

   Objective Answers will be directly compared to the solutions.
3. Student will have an option to take a quiz with time limit or freely without time limit.
4. The analysis will be available after performance is compared to that of others who have taken the quiz.

Implementation - Recommendation System

- After taking an online quiz, our database will store how well the student has done in the quiz he/she has taken. For the courses in the current semester, the recommendation software would suggest new quizzes of an easier level he/she scores less or of a tougher level if he/she scores well. The student can also rate the quizzes.
- As quizzes, midsems or endsems of a particular course approach, the quiz section of the website will recommend quizzes for that course.

Implementation - Automation

-->News feed will get sorted according to interests, skills and peer's information.

-->We will recommend to student the relevant events(happening in the insti) according to his/her interest

-->Reminder mails for events and deadlines(24 hour before deadline and after 90% of the class submits the assignment).

--> We will try to detect tags and keywords from posts and news and add additional tags to the post to further sort it out.

--> According to performance of the student in a course we will suggest him to the extra courses he/she should take in the next sem.

Grading and Progress report

-->After every quiz we will make a report card of the the student.

-->In this report card score as per question, marks per testcase and Improvement suggestions(Which topic you need to make strong) will be given.

-->Rank among all the students appeared for the test.(Your name/rank will not be made public)

Feasibility

It could be a great hub for students to explore new topics and projects suiting their interests for which they would not have to scout around much but just go for the courses.

In future we can connect CDEEP, IITB library and other databases and frameworks can be connected to the site to build a website where all academics activities in Institute can be monitored. Also allowing outside students for registration will build bigger groups for respective fields, so that everyone gets benefited.

Because IITB has potential to maintain the website and we can connect many databases and frameworks, basically the website can turn something like MITcourseware for IITB !

Testing

We will test the quiz and assignment section by submitting and evaluating some test assignment and quizzes on the website.

We will make users with mutually exclusive interests and show that their news feed has differences. Also we will add users with similar interests and show some similarities in their news feed and suggestions.

For grading system, we can submit test quizzes and progress reports can be analised based on their performances. The one with better performance should get different suggestions than other.

Work Allocation and Timeline

Week 1 - Website Creation(Basic Layout), Login/Sign up Facility, Make basic structure for online quizzes.

Week 2 and 3- Start Implementing Recommendation System, and automatic evaluation system.

Week 4 - Documentation and Testing. Make website user friendly. Remove any bugs.

References

- ★ https://ocw.mit.edu/index.htm MIT OpenCourseWare | Free Online Course Materials.
- ★ https://www.spanedea.com/test/category/engineering_entrance/iit_jee
- ★ http://moodle.iitb.ac.in/ IIT Bombay Moodle.

“Because we believe that in IIT Bombay you have infinite things to do, But what you are actually interested to do ?”

Thank You !