

BUILDMLEARN GSOC 2016 PROPOSAL

University Campus Portal

About me :

I am a student currently in 3rd year, doing Bachelor of Engineering course with Computer Science and Engineering as major in PES Institute of Technology, Bangalore, Karnataka, India. I'm an avid coder with a very keen interest in web development. I am proficient in C, Java, Python, HTML, CSS, Javascript and Django web framework and I'm familiar with C++.

Contact Information :

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References :

1.Developed a partial implementation of an e-commerce site for an aspiring startup. The project fell through due to lack of funds and hence was not completed.

Link: <https://github.com/Raxerz/SimpEl>

2.Currently developing a project management system as part of my Software Engineering Project.

Link: <https://github.com/Raxerz/PMS>

Resume` :

<https://drive.google.com/file/d/0B7Hnx8cG8DNBQnBOM21aR2k3MGc/view?usp=sharing>

Project Abstract/Idea :

A University Campus Portal plays an important role in any engaging computing interface. It is an essential need for every university to keep track of all the activities and records of its students.This will not only benefit the university but also the students to keep track of their academic records as well as other on campus activities. Currently existing university captive portals have basic set of functionalities but are not versatile enough to account for all the required functionalities.

This project aims to incorporate every possible functionality associated with a campus consisting of the following

- 1.Academic records (Track grades, attendance, courses taken, credits obtained, managing project repositories and any other academic related feature)
- 2.On and off campus events (include cultural, technical and other such events)
- 3.Recruitment/placement of the students. (Also includes internship, research and summer training opportunities)

Approach to the development of this Project

I intend to subdivide the project into the following applications:

Student App, Faculty App and Campus-General App (for events/news, discussion forum and recruitment models).

A draft or rough schema for the database (subject to change) would be as follows:

<https://docs.google.com/document/d/1gWlfiOO46gY0bNIGSDQF8i4LaAC-f7uyV7Xb0JyjnYE/edit?usp=sharing>

Implementation details :

- The web application consists of 3 models, the Student, Faculty and Campus-general(events, recruitment, etc) models. These models are interrelated to each other by foreign key references.
- The data we get back from a web service call, or from a webhook is usually in JSON format and this is dumped into a python data-structure like a dictionary on which the required operations can be performed. We can also use the serializer class to help us in this regard.The integration of backend and the frontend of the application will be done with the help of Django.
- The profile pages for students and faculties will receive notifications from all other portals(academic, recruitment,

events/news, administrative section, etc).

- Academic portal : a student will be able to view his/her courses, grades obtained, status of attendance, manage projects (like Github) and access to digital library. A faculty will be able to view his/her courses and assign grades to his students, upload videos and course content, create timetables, and offer projects that he/she is willing to work on.
The exam scheduler will be created and uploaded by faculty members, we can make use of Google calendar API integration, for easier creation and development of exam schedule.
- News/events can be created by anyone (Student/Teacher) but should be moderated by a moderator who approves of such events. The events model can also contain features to send reminders to students/faculties registered for the event . We can make use of Google calendar API integration.
- The discussion forum can be implemented using existing django forum apps like askbot, django-forum, etc. I have not considered building it from scratch as it may be time consuming as I have planned to implement many other features like project repository management and managing a digital library with video lectures.
I would like to point out that I don't mind implementing the forum from scratch if I have to, always excited to work on it. If flexibility is seen as an issue then the existing forums can be modified to suit our needs and provide the required flexibility.
- I have also planned on incorporating a chat system in case a student wants to fix an appointment or discuss his/her project with a faculty. This can be implemented using existing chat

clients like Zoho and I would not mind if I have to work on it from scratch. This feature will be like an incentive that will give our web app an edge over other existing web apps.

- The recruit table contains information about any recruiting company . We can also send out reminders about visiting companies to all the eligible candidates. Initially this can be implemented as a many to many relationship model between students and org and later after the org/company has shortlisted the prospective employees and as each student may get more than one offer from different companies then the student can decline the offer of companies he is not willing to join through the portal, a simple deletion of his record from the companies table will help us in this regard.
- The moderator will have access to the django Admin portal which will serve the purpose to check and moderate the usage of the web application. The admin portal will also be designed to provide better user interface for moderators.
- If time permits, I would like to implement a basic android application of the above web application. This will allow users to access the web application on the fly.

Tentative design Wireframes is as follows:

<https://docs.google.com/document/d/1jRIsOT4r2ejh18hY6YHYeWlm-NOzcScMim12jFam3o/edit?usp=sharing>

Coding guidelines I wish to follow:

<https://drive.google.com/file/d/0B7Hnx8cG8DNBdDdEeGFxSmlsYUE/view?usp=sharing>

Tentative timeline :

Start Date	End Date	Deliverable
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22 Apr 2016	22 May 2016	Community Bonding Period and discussion of coding guidelines.
23 May 2016	31 May 2016	Documentation - Feasibility report, requirements gathering and specification, Design development.
1 June 2016	8 June 2016	Development of database schema and User Interface. Android: Creating basic layouts for all the activities and fragments and connecting to the backend database.
9 June 2016	20 June 2016	Complete functionality of academic portal implementation including student and faculty interfaces. Android: Implementing academic activity

		will involve making of student and faculty activities and each will in turn consist of various features in the form of fragments.
20 June 2016	27 June 2016	MILESTONE #1 for Mid-Term Evaluation
21 June 2016	28 June 2016	Complete functionality of events/news portal Android: Implementing events and news activities and creating notification intents on any updates like new events being posted or the latest news on campus.
29 June 2016	14 July 2016	Complete functionality of recruitment portal and admin portal. Android:

		Implementing recruitment activity and creating notification intents on any updates like new companies coming for campus placements.
15 July 2016	22 July 2016	Completing functionality of discussion forum and chat system. Android: Using webkit like webview to port the forum from the site to the app.
23 July 2016	4 Aug 2016	Testing, fixing bugs if any, fine tuning the application for a better user interface. Android: Proper testing of application with different devices with different screen resolutions and orientations. Fixing bugs if there are any.
20 Aug 2016		Final code submission and final evaluation

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I would also like to add that I would work on the android application simultaneously to stay in sync with the proceedings of the actual portal.

Deliverables:

MILESTONE #1 for Mid-Term Evaluation:

Complete functionality of academic portal implementation including student and faculty interfaces.

Complete functionality of academic activity implementation including student and faculty activities of the android app.

Here is a list of tasks that I have planned to implement:

- 1.Design, implementation and testing of all user interface pages (front-end) of the portal/android app.
- 2.Complete backend implementation for the academic portal.

Features of academic portal include the following:

Student profile:

1. Registration.
2. View Results/Grades.
3. View Courses taken.
4. Manage Project repositories (Uploading,maintaining-using version control systems and deletion of the repositories)
5. View status of Attendance
6. View digital library (E-books,online order of books in the library,video and audio lectures).
7. View Class Time Table

Faculty profile:

1. Registration.
2. View/upload Results/Grades.
3. View/Manage Courses offered.
4. Manage Project repositories (Uploading,maintaining-using version control systems and deletion of the repositories)
5. Manage Attendance.
6. View/Manage Digital Library.
7. View/Manage Time Table.

Post Mid-Term evaluation:

Complete functionality of events and news portal, recruitment portal, admin portal and discussion forum implementation.
Complete functionality of events and news activity, recruitment activity and discussion forum activity of the android app.

MILESTONE #2 - Final Evaluation:

Complete functionalities of all the desired features (academic, events/news, discussion forum and recruitment) of the portal and the android application.

Why am I apt for this project?

I am an open source enthusiast. I haven't contributed to BuildmLearn yet and I would like to take this opportunity to contribute to this great community. Given a chance to work on this project, **I assure dedication of a minimum of 40 hours per week to the work and that I do not have any other obligations during the period of the program.** Also, I would continue to work on this project even after GSOC, and give effort to push the code to the stable version as soon as possible.

For the prerequisites,

1. I have a decent to strong experience in coding in HTML, CSS, Javascript, Python and Django framework. I have also done database handling using PostgreSQL (RDBMS I intend to use for this project).
2. I am familiar with version control systems, use git regularly and know basic svn.
3. **I am comfortable working under a mentor who is several thousand miles away or who can be communicated virtually only.**
In fact, I have worked in the similar style on my commercial detection project as a part of my GSOC 2015 application process, my mentor was in US.
4. I am also working on a similar project (Project repository management- one of the feature I've planned to implement in campus portal project) as part of my Software Engineering

course.

Are you submitting proposals for any other organizations except us? If yes, which orgs have you applied for?

Yes, I have submitted a proposal for the volunteer management system portal project of Anita Borg's Systems organization.

Have you participated in any previous GSoC programs? If yes, tell us about your experience briefly and if you completed successfully.

No, I haven't participated in any previous GSoC programs.

What is your primary motivation to submit a proposal for this project? Are you interested because you get a stipend as a part of GSoC or would you be interested to develop this project for us even outside GSoC?

I have always been fascinated and have taken keen interests in developing web applications and when I saw this project listed as a prospective GSoC project, I could not let the opportunity slide. I would like to emphasize that I am not interested in it for the attractive stipend. I would continue to work and contribute to this project irrespective of my selection. This project would benefit my college too so this is another incentive for me to work on it.

Other relevant questions as suggested by the mentors:

1.Regarding my college schedule:

I have my semester end exams during the community bonding period (May 1st to 23rd) and summer vacations from 23rd of May to 4th of August. I am completely free during the implementation phase and I can utilize my time to the fullest to produce the deliverables as per the timeline.

2.What would you do if you are not selected?

I would obviously be disappointed if I am not selected, but I will continue to develop this portal as a hobby project during my vacations.

I will introspect on where I went wrong, work on them and overcome/acquire them and if I get another opportunity to contribute to your organization as part of GSOC, I shall positively grab it.