Alumni Management and Engagement System

Github - https://github.com/abstatic/alumni_portal

Team 12
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Overview

- Problem Statement
- Assumptions
- Stakeholders
- Requirements
- Design
- Tech Stack
- Demo

Problem Statement

Alumni Management and Engagement System

- Enable alumni to stay in contact with each other and institute, and vice versa
- Contact with and within alumni can be used to explore business connections and to gain references or insights in a new field
- An online application that can be accessed throughout the institute and outside.

Assumptions

- Users have an internet connection
- Users have a mobile/desktop computing device with a web browser
- Users have prior knowledge and experience of using and navigating through a web portal
- Users are alumni of the institute

Stakeholders

Direct stakeholders

- Institute
- Alumni - A pass out of the institute, interacting with peers and institute
- Administrators - Monitor content, control functionality and data through platform
- Developers - Platform maintenance, Scaling

Indirect Stakeholders

- Companies/Firms - With job postings on the portal

Functional Requirements

An **alumni** can

- Register and login
- View/post job referrals and posts
- Search for users
- Block user
- Report posts for offensive content
- Subscribe to events posted by the admin.
- Provide feedback

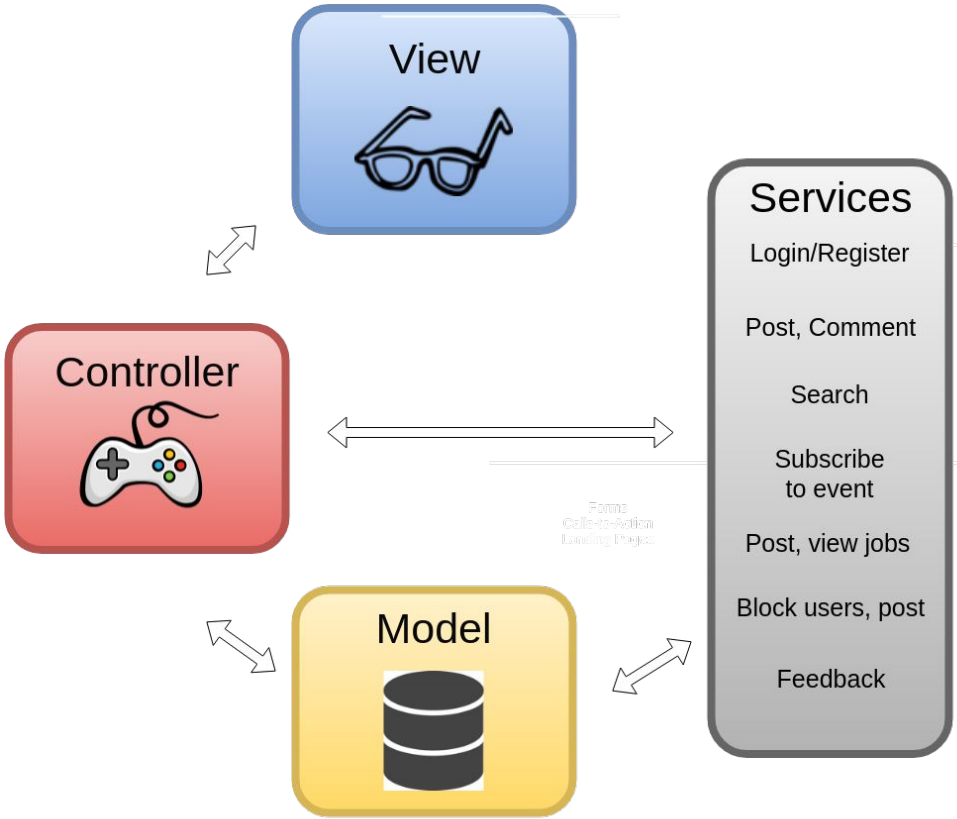
An **admin** can

- View/edit job referrals, blog posts
- Respond to feedback, reports
- Remove offensive content
- Create/edit events

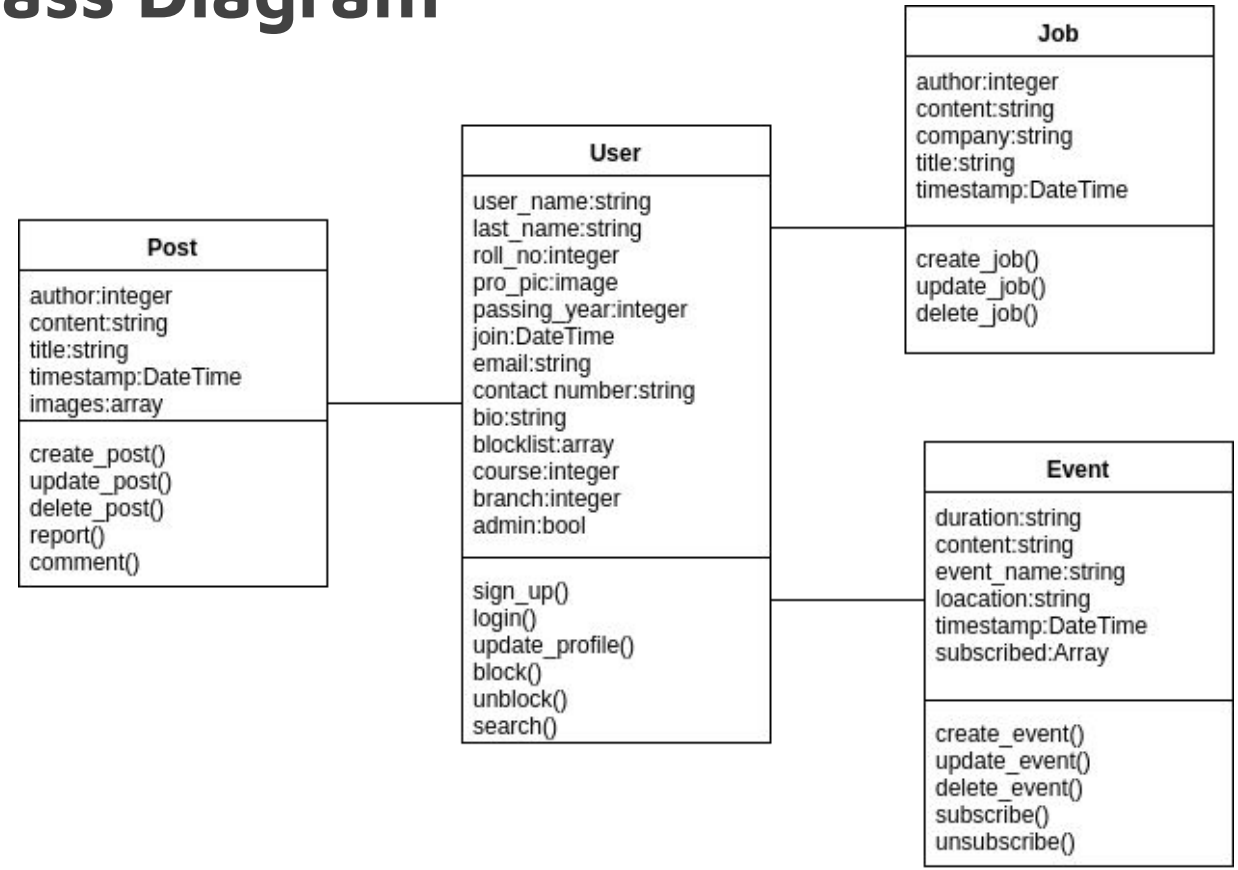
Non-Functional Requirements

- **Performance** -
  - Mean latency is 4.8ms
  - Our system can handle ~350 RPS
  - TP50: 4ms , TP99: 12ms
- **Security** - Authentication and Authorization handled by Django
- **Availability** - System will have 99.9% uptime.
- **Capacity** - System is expected to be able to store upto 50,000 alumni.
- **Maintainability** - Well documented code written clearly and concisely.
- **Usability** - Responsive design.
- **Data Retention Policy** - Automated database backups done using cron jobs. Database log, error log and logging modules will be maintained. Logs older than one year will be deleted.

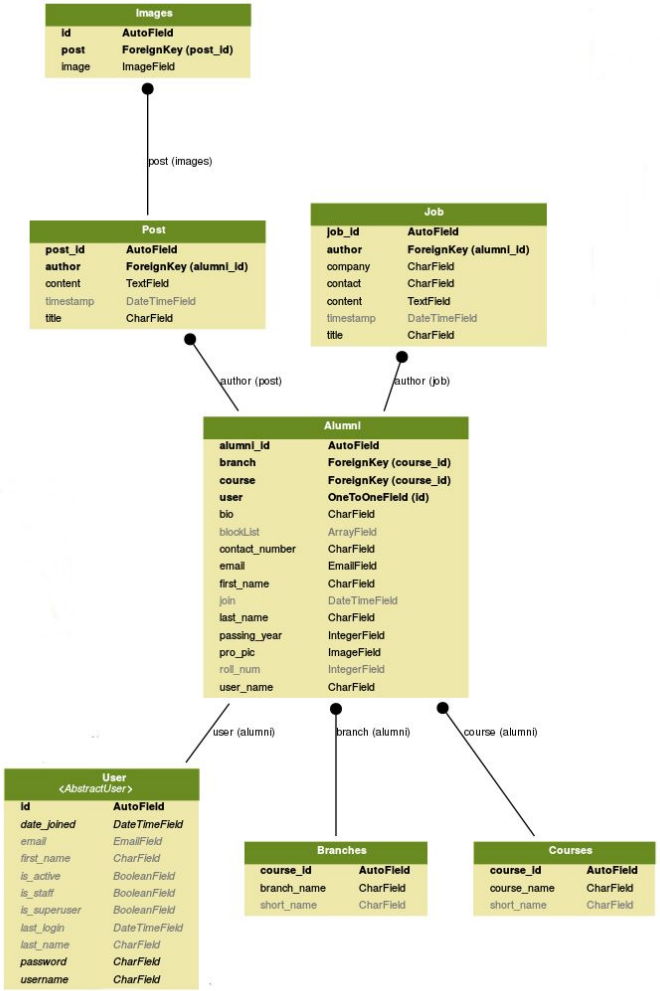
Architecture - MVC



Class Diagram



Database Schema


Images
id AutoField
post ForeignKey (post_id)
image ImageField
post (images)
Post
post_id AutoField
author ForeignKey (alumni_id)
content TextField
timestamp DateTimeField
title CharField
Job
job_id AutoField
author ForeignKey (alumni_id)
company CharField
contact CharField
content TextField
timestamp DateTimeField
title CharField
author (post)
author (job)
Alumni
alumni_id AutoField
branch ForeignKey (course_id)
course ForeignKey (course_id)
user OneToOneField (id)
bio CharField
blockList ArrayField
contact_number CharField
email EmailField
first_name CharField
join DateTimeField
last_name CharField
passing_year IntegerField
pro_pic ImageField
roll_num IntegerField
user_name CharField
user (alumni)
branch (alumni)
course (alumni)
User
<AbstractUser>
id AutoField
date_joined DateTimeField
email EmailField
first_name CharField
is_active BooleanField
is_staff BooleanField
is_superuser BooleanField
last_login DateTimeField
last_name CharField
password CharField
username CharField
Branches
course_id AutoField
branch_name CharField
short_name CharField
Courses
course_id AutoField
course_name CharField
short_name CharField

Tech Stack

- Mostly python, postgresql, js
- **Backend-** Django for creating web service.
    - Postgresql as database
    - Bash scripts for backing up data
    - Hosting will be done using apache2 wsgi
- **Frontend-** Bootstrap, jQuery for handling frontend.
- Pixel based size constraint on photos upload.

DEMO