eBJUT - One-Stop eCampus Portal

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1 Project Background

In Beijing University of Technology, there is no official platform for students and teachers to pass and get information. At the present time, students and teachers are still use some IM (instant messaging) software like the WeChat or QQ which is annoying and mixes life and work together. Moreover, Searching information on every platform is wasting time. In response to this situation, eBJUT aims to provide a one-stop solution service. By using the eBJUT, students and teachers are able to get and post latest various information in a more convenient way.

2 Technologies

2.1 Front-end

- Flutter: A mobile application frame which provides a convenient and comfortable way to build cross-platform application.
- HTML5 + CSS3 + JavaScript: The basic technologies of web front-end development, which are used to provide a refreshing interface.

2.2 Back-end

- PHP: It is a open-source back-end programming language which is widely used in web applications.
- MySQL: A common used relational database management system based on Innodb.

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- Redis: It is a in-memory data structure store, used as a cache for MySQL servers to reduce system load and increase service ability.

- Nginx: It is a open-source and high concurrency architecture based HTTP server, which also lightweight and easy to deploy. By using Nginx, much time and server resources are saved from miscellaneous configurations.

- RESTful API Style: It is a mature client-server architecture API communication systems which are widely used. Because of its layered structure, it is also cacheable and uniform, which reduce the system load and friendly to programming.

3 Time Management

3.1 Progress

- Week 1: Topic discussion.
- Week 2: Initial documentation, logo design, pain-points discovery.
- Week 3: Framework decision, initial project construction.
- Week 4: Arrange division of work, deploy development environment, implement news spider and Android client.
- Week 5: Database design, master-to-master replication of the MySQL server deployment. Implement demo of trading, account system, books information API, lost and found portal, forum and moments.
- Week 6: Preparation of project presentation.
- Week 7: Code optimize, bug fixs and the deployment of Github Kanban.

3.2 Plan

- Week 8: Finish basic functionalities.
- Week 9: Fast iteration with OOP style and do unit test with PHPUnit.
- Week 10: Bug fix, the UI design improvement.
- Week 11: Extending functionalities.
- Week 12: Extending functionalities.
- Week 13: Release final product.
- Week 14: Making final report.
- Week 15: Recording 5 minutes demo.

Student No	Name	Work
17205996	Tianze Wen	Front-end Dev, Mobile App Dev (Android Client)
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17205963	Xingren Wang	Back-end Dev (Moments, Forum)
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Table 1: Division of Labour

4 Team Management

In the development team, tasks are assigned as shown in the table 1. The Github Kanban, also known as project boards, are used to do project management and helping to organize and prioritize works. Aside from that, regular meetings and pair programming are also being held to admit process and do discussion on technique issues.

5 Progress Details: News Feed

5.1 User Requirements

In 21st century, there is a consensus that information overloaded affects people a lot. Netizen spend hours on switch their phone between several apps, sending and receiving messages on the Internet.

In the BJUT, there are 6 news boards on the website where filled with useless items, like punishment for teaching accidents and memo of meetings, which is difficult for users to find any key information. To prevent from missing any events, students may spend much time on various subscribe accounts and group chat. Especially when sometimes who are looking for a message or attachment but only found out that it was expired.

5.2 Design

Too much unimportant messages cause users tired. As the solution of this, we introduced custom news feed for helping students to subscribe news by departments, academies and categories. Besides, we also provide a in-app preview feature, save more time for users.

5.3 Implementation

A spider is deployed on the server to craw all announcements and articles of university notification center all the time. Then these data are stored into the database as soon as possible, and can be access by API via JSON (JavaScript Object Notation) format to the client.

5.4   Testing

Currently we using the Postman, a powerful API development tool, to verify the API functionalities manually. Moreover, the PHPUnit is considered to be used in the version after iteration.