

INFS3202 Group Proposal

C04

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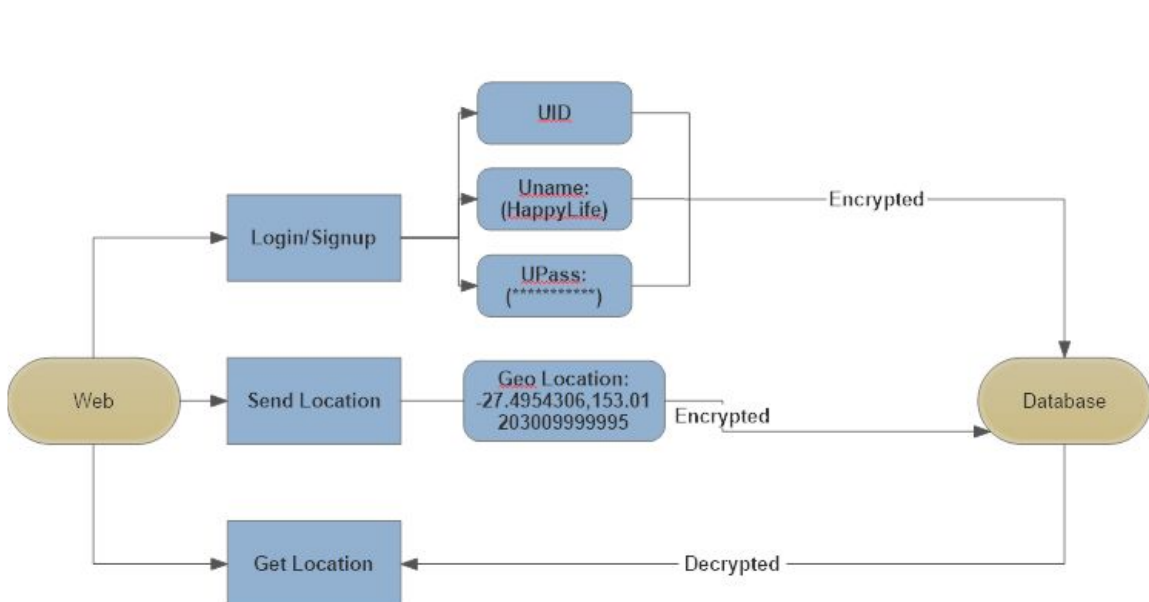
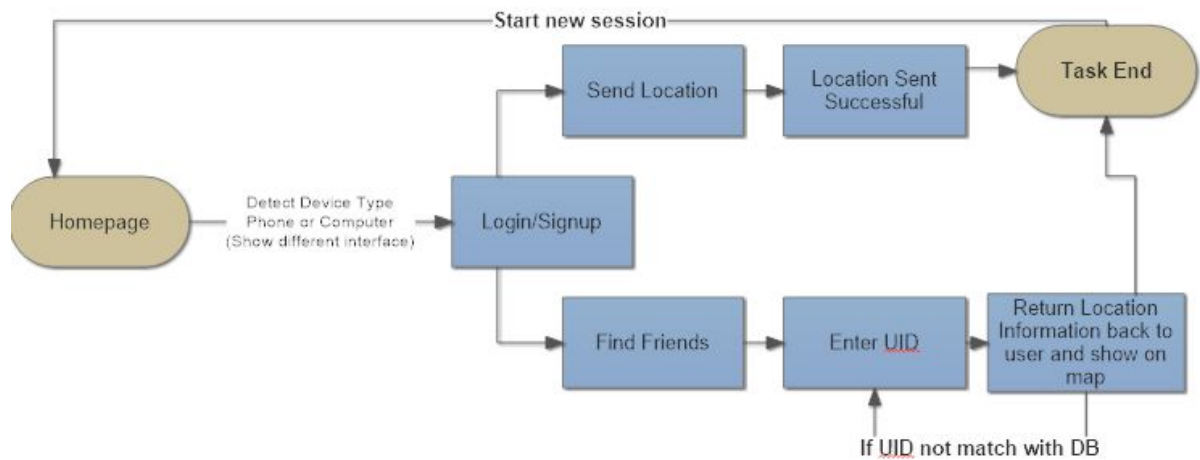
SiK

Overview

The project called SiK chosen as the project to be developed for this assessment. In brief, SiK is a website designed for those target users who want to know the location of their friends or oppositely they want their friends know where they are. Due to SiK is a web based project and comply with web standard, so it is convenience for people to access at anywhere from any web-enabled devices.

Layout

Workflow Diagram



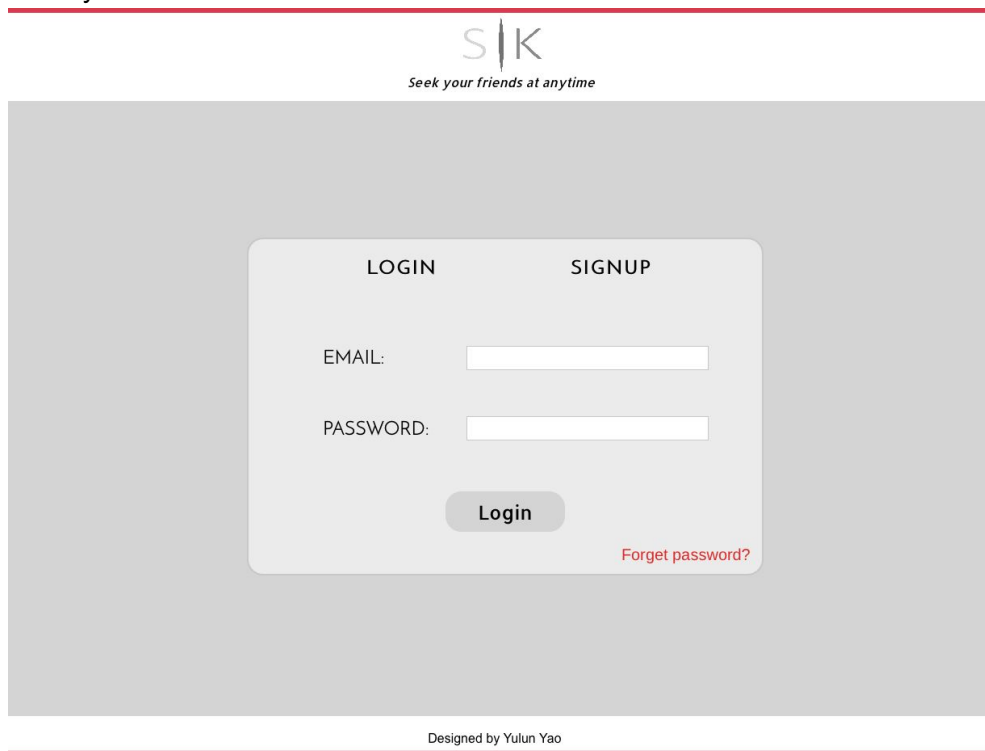
User Experience

SiK is a simple and easy to use tool, when user first access the website, it requires authentication information to make sure the server could understand the user's identity. Once user logged in, they could either press 'Send Location' or 'Find Friends' button, the former one allows user to share their location to their friends, the latter one allows user to get the location of their friends based on their UID (User Identifier). The UID is a six-digit number to recognize users. If user typed in the UID, an embedded google map will show the location of the user correspond to that UID. If user needs to find that user, simply press 'Go and Find' button, then web page will be directed to Google Map to guide user to destination.

User Interface

The website is mainly use grey as background color as it can highlight the content on the page, and use white color in the header and footer to display essential information such as SiK logo and copyright information. As the result of the use of grey and white will looks very monotonous, so the red border at both top and bottom will be used to enhance the visual effects. All components on the site are aligned with the overall layout. The clickable button use color contrast with background color to guide user click. The use of aircraft image helps user to identify tasks they want, such as 'aircraft take off' image represents use will sent out the location, the 'aircraft landing' image on behalf of the user to obtain other user's location.

The website layout is shown below:



The screenshot displays the SiK website's login and signup interface. At the top, the SiK logo is centered, with the tagline "Seek your friends at anytime" below it. The main content area has a grey background. In the center, there is a white rounded rectangle containing the login and signup forms. The form is divided into two sections: "LOGIN" and "SIGNUP". Under "LOGIN", there are input fields for "EMAIL:" and "PASSWORD:", followed by a "Login" button. Under "SIGNUP", there is a "Forget password?" link. The footer of the page is white and contains the text "Designed by Yulun Yao".

Figure 1: Signon/Signup



Figure 4: Get Location

Technology

Web Standard

Considering that there are many ways to access the internet today, the market has many web-enabled devices, they could either use mouse and keyboard to operate their computer or use the touchscreen on their smartphones. Those different devices may be installed different operating systems, and may equip screen with varieties of resolution and they have their own preference for the use of browser. These differences are likely to make the website looks different to users than you intend to present to them. To guarantee the consistency of user interface between those devices, the website need to be develop in accordance with web standards.

Client Side Technology

The whole website will be written by HTML, CSS and JavaScript. HTML is responsible for all visible contents such as the logo, the image of aircraft, the text on website, etc. CSS will be used to decorate the content of webpage, for example, set the frame for the whole webpage, set the background color, make effects when mouse hover over the button, etc. To make the website interactive, JavaScript is indispensable in here. Firstly, the webpage will offline in 3 minutes without operation, and then an error message will show 'Session ended'. This idea is gained from Si-net, to do so can protect user's privacy. This function will be written by JavaScript from scratch. Secondly, the aircraft will change color with smooth animation when mouse hover over it. Thirdly, the website will use jQuery as a third-party JavaScript library to check the format of email address when login/signup, if user typed in a wrong format email address, a notice message will come up with a transition effect beside to remind user. Next, to know the location of

users, the website will use Geolocation API written by JavaScript to get the coordinates of users' current location with no matter they use mobile or computer. Considered the safety issue and latest browser enforce https connection for the geolocation API, we will apply a SSL certificate from CA then deploy to the website. At last, after get user's location, a google embedded map will show in the web page, this feature is mainly supported by Google Maps JavaScript API, but may need some changes on code to adapt the design of this website.

Server Side Technology

Due to both PHP and MySQL are open-source and free for personal use, so in this case, the PHP will be used to communicate between the client side (website) and server side (database), and use MySQL as database to store user's information.

The feature will be implemented by PHP is that when user login an account, the username and password they typed in will be sent to server to check if those match with database. Later if user want to change password or UID, their new information will be updated in the database. Another feature is that when user A press 'Send Location' button, their location information will be send to database. And later, when user B want to know User A's location, the webpage will retrieve location from database to present to User B.

In addition, to enhance the user experience and reduce the waiting time, AJAX will be apply in this website, so that only update those element which need to be updated (such as update embedded google map directly, the click behaviour without trigger a new web page, etc) instead of refresh the whole site to let user experience website smoothly and reduce bandwidth usage.

Information Security

Considering that the information stored in database is username, password, UID and user location, to avoid the risk of database information exposed to public area, that private information will be encrypted by Password Hashing API which is supported by PHP 5.5 version. Therefore, those hashed meaningless information will be stored in the database which is very secure. The reason for choosing it is because it is not only safer than other encryption methods such as md5, but also easy to use and official recommended by PHP.

Furthermore, while user trying to change the password, they allow to request system to change a UID for them as well. The reason to do this is to avoid if the user want stop sharing their location with someone. After that, the old UID will expire immediately and no longer can be used.

To prevent the database suffers SQL injection, we will use Prepared Statements in PHP which it uses boundary parameters so that it is impossible for attackers to modify sql statement, as a result, they are unable to get permission to view and destroy the information in the database.

Deployment

Both website and database will be deployed in the Microsoft Azure.

Reference

1. Washington.edu. Web Design & Development I (Student Version) [Internet]. Available from: <https://www.washington.edu/accessit/webdesign/student/index.html>