# Report for Assignment 3

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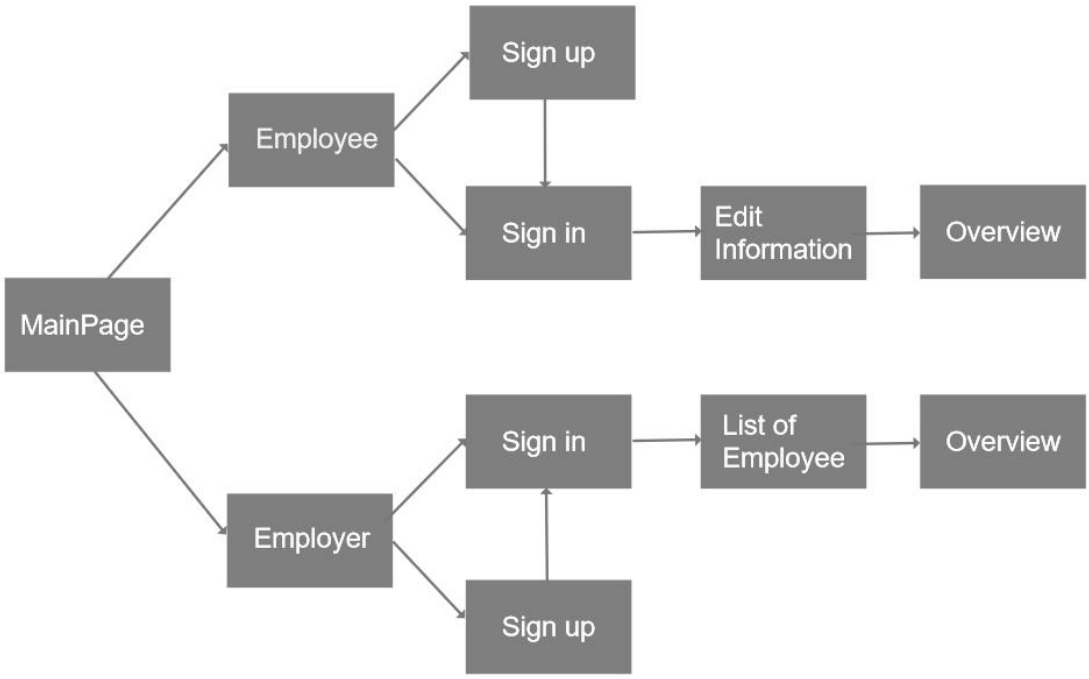
1. **Specification**

   HR Management 2021 is a web-based information management system which contributes to solving the problem of collecting and making personal archives of employees in the companies or teams. Our website's target users are those companies or team leaders who with a great number of team members. Our website provides new employees with a portal to submit their personal information to the website. The empowered users have another portal with which they can be directly led to the gallery of all submitted employee information.

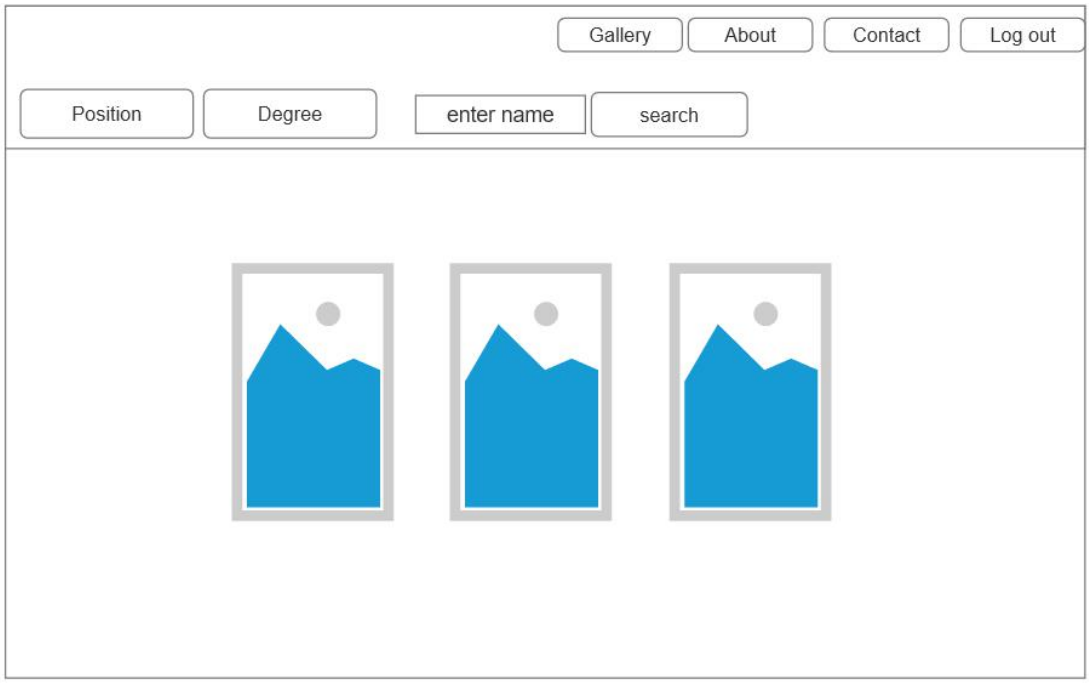
2. **Structure**



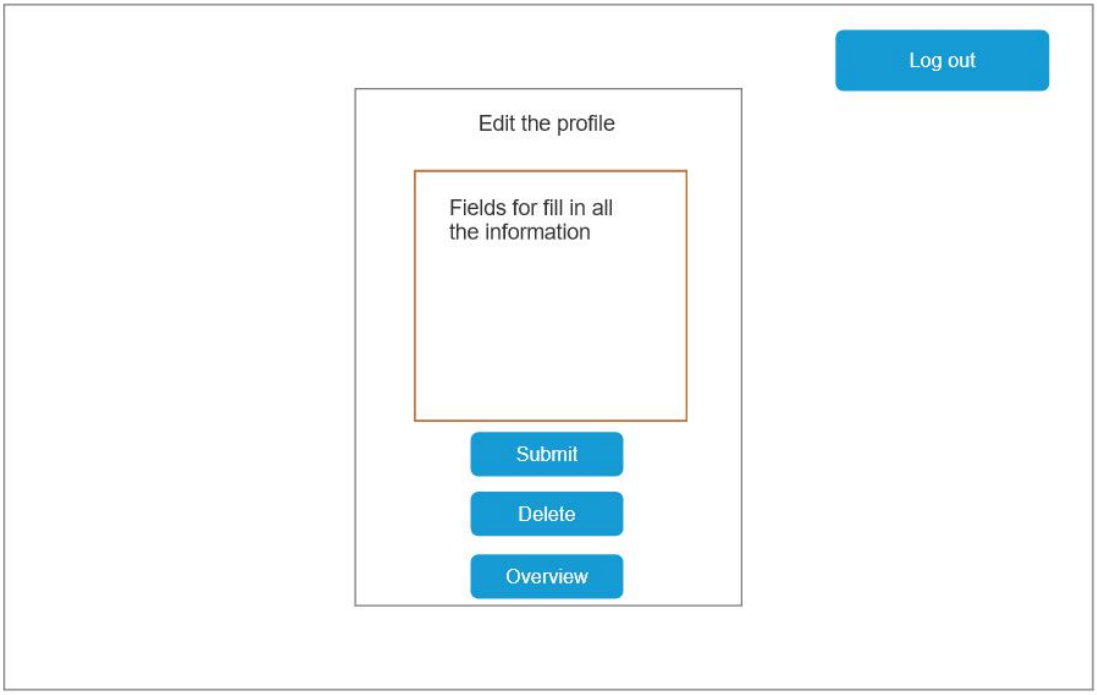

This is the site map of our website. In the main page, you can choose sign up and sign in as a employee or employer in a new page. If sign in as a employee, you can enter the page for editing your information. after that, click the overview you can enter the overview page. If you are a employer, you will enter a page with list of employee after sign in. Click the profile you will enter the overview page of this employee.


This is wireframe of main page, if you are employee click left side, otherwise click right side. After clicking the button and description will appear.


This is the wireframe of sign in and sign up page, they are nearly the same in employee and employer, fill in these information to sign in or sign up. Only one side will be shown, click the button you will enter different side.




This is the wireframe after sign in for employer. These pictures show the profile and basic information of employee, click them and you will enter the overview.

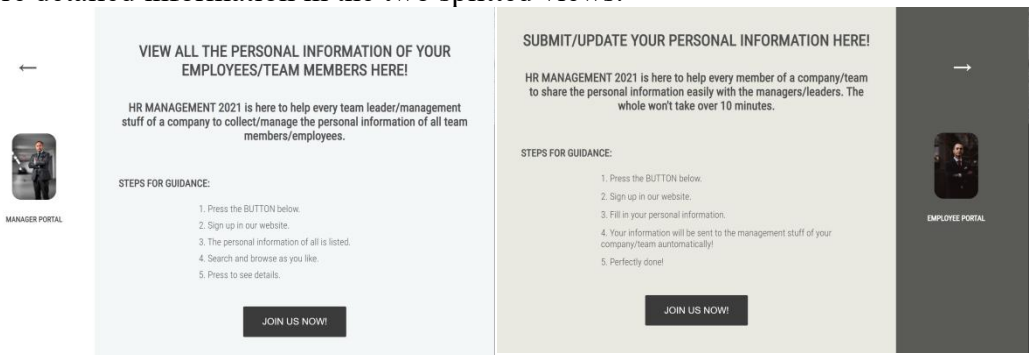



This is the wireframe after sign in for employee. You can edit all the information in the field. Click submit button after finish it. Click the overview button to see the overview of it.

## 3. Design

a. Welcome page

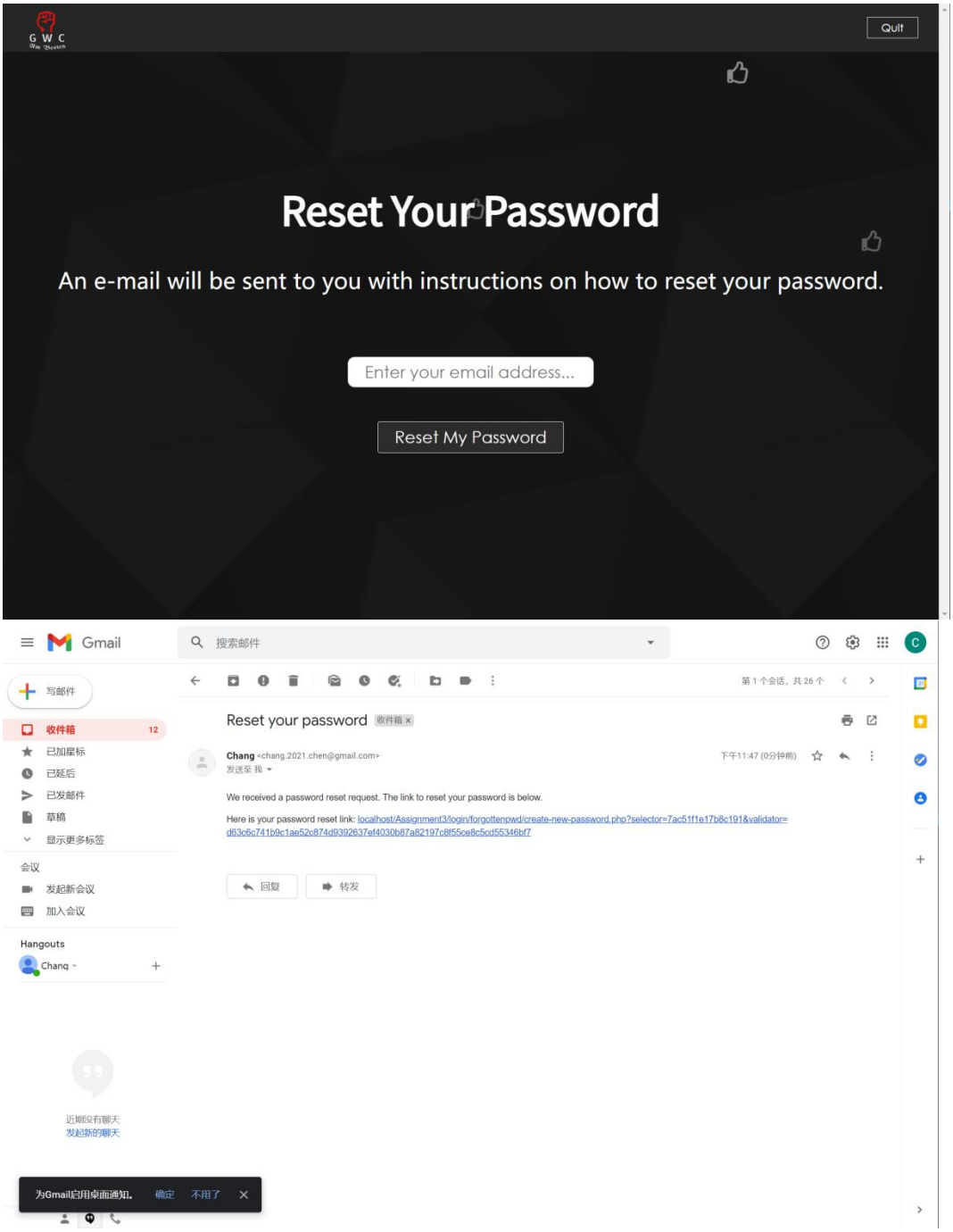

The Welcome Page mainly introduces the website name and straightly points out the target users and offer the portal to detailed introduction. The welcome Page uses contrasting colors, grey and white to distinguish the two target users. Also, we use animation to extend each part and give more detailed information in the two splitted views.

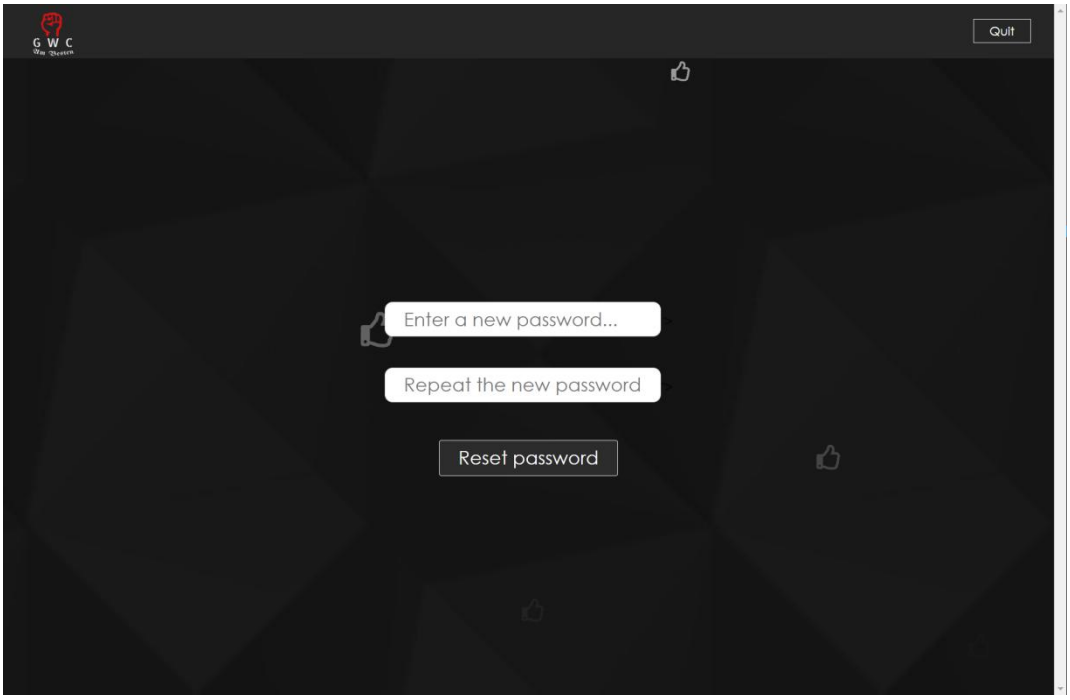



b. Login Page

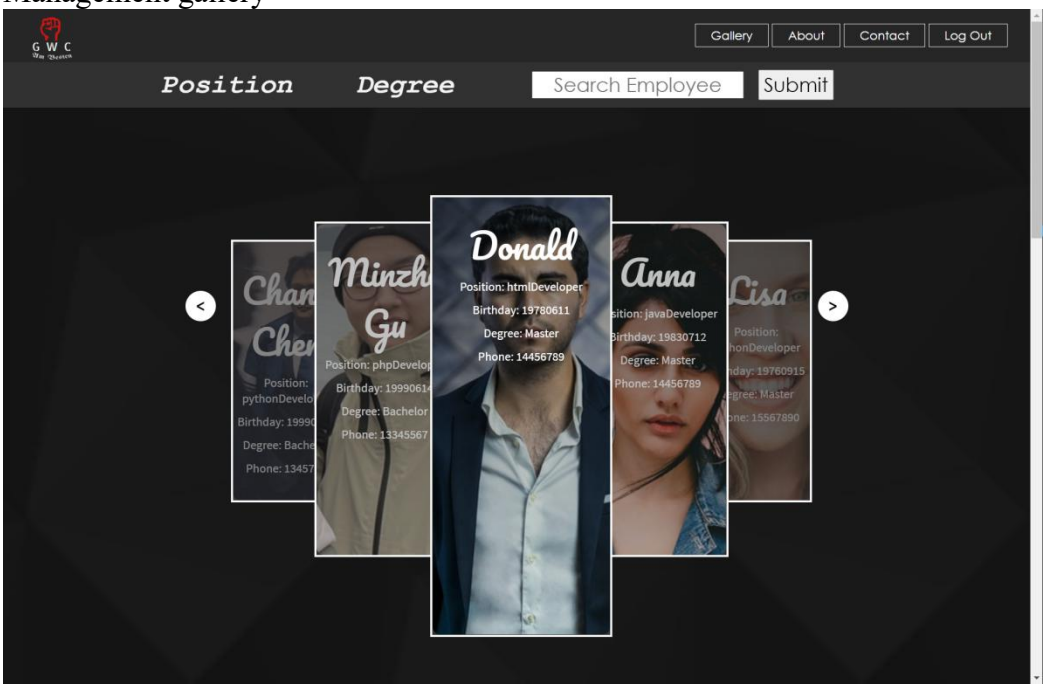
The Login page inherits the horizontal style from the welcome page as well as the contrasting colors. Animation is also used to switch within the sign-in section and sign-up section. If the input data is not allowed, warning and hint will be given in this page. Meanwhile, different choices in the welcome page lead to different user types, employee or manager. Both of them will be led to this page.

However, though the same looking of the login page, after logining in, they will enter pages of different functions. If users accidentally forget the passwords, they can press “Forgot my password” to enter the password resetting page and reset your password by email.

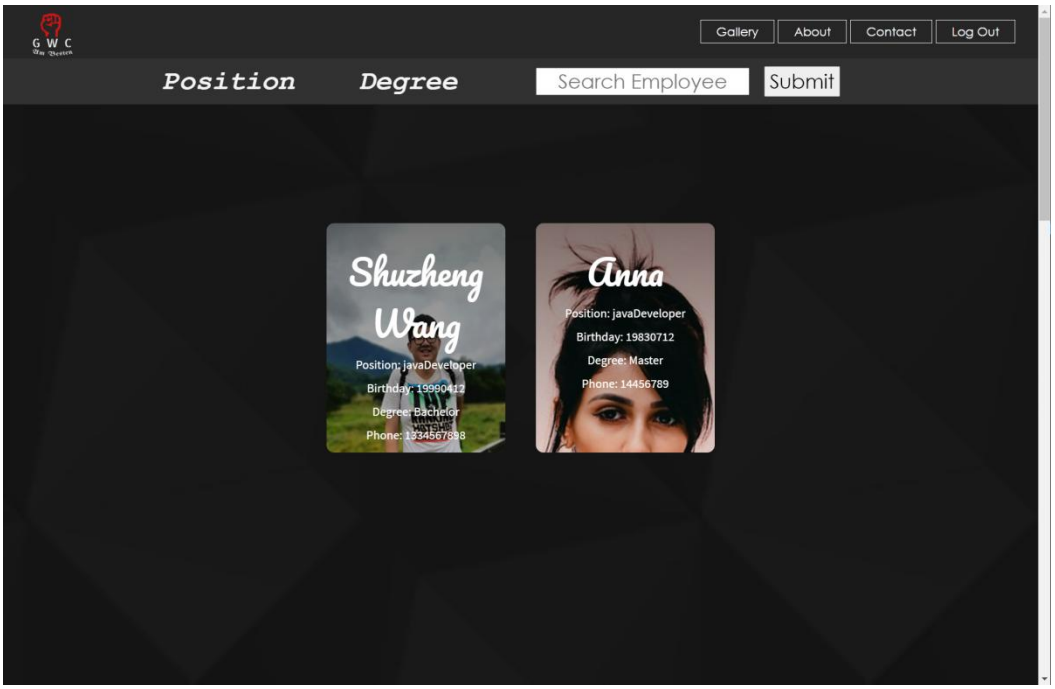

GWC
Quit
Reset Your Password
An e-mail will be sent to you with instructions on how to reset your password.
Enter your email address...
Reset My Password
Gmail
搜索邮件
写邮件
收件箱 12
已加星标
已延后
已发邮件
草稿
显示更多标签
会议
发起新会议
加入会议
Hangouts
Chang
近期没有聊天
发起新的聊天
第 1 个会话，共 26 个
Reset your password
收件箱
Chang <chang.2021.chen@gmail.com>
发送至 我
下午11:47 (0分钟前)
We received a password reset request. The link to reset your password is below.
Here is your password reset link: localhost/Assignment3/login/forgottenpwd/create-new-password.php?selector=7ac51f1e17b8c191&validator=d63c6c741b9c1ae52c874d9392637ef4030b87a82197c8f55ce8c5cd55346bf7
回复
转发
为Gmail启用桌面通知。
确定
不用了




c. Management gallery



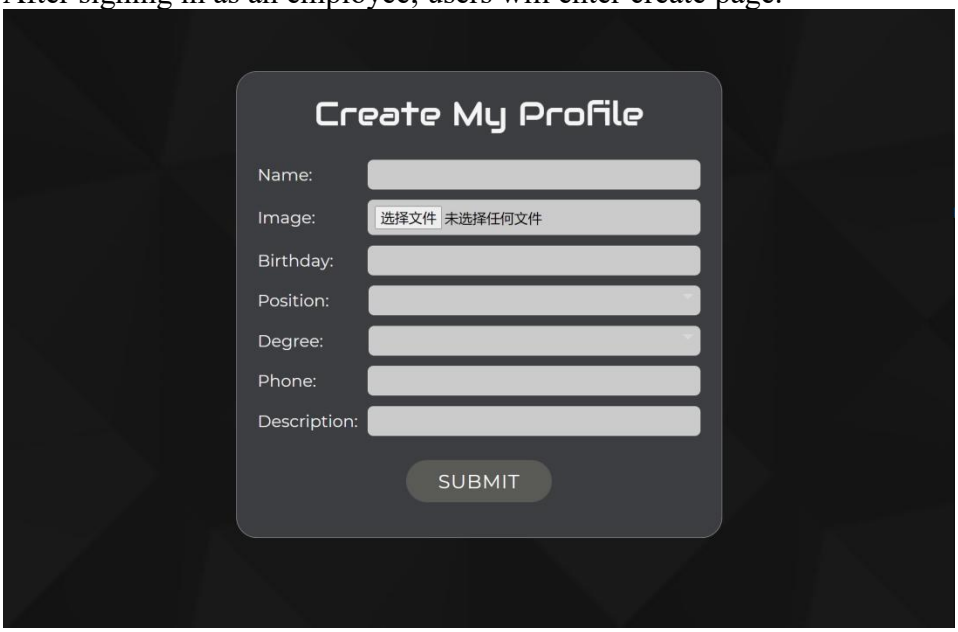

i. After signing in as a manager, users will enter the gallery page. The gallery shows the initial seven persons information and they are listed in square slides rotating. Users can click the slide to see the detailed information. Besides, if not listed in the gallery, others can be found through the sorting in the navigating bar or search that and then they will be shown like this.




When pressing the tiles shown here or slides in the gallery, the detailed page will be shown.


The uploaded information will be clearly shown here. The page inherits the contrasting color design as well to illustrate all information.

ii. After signing in as an employee, users will enter create page.




Users can fill in all the required information to create your whole profile and have an overview of the created style. Empty form is not allowed here. Warning will be given if so.

## 4. Implementation

Our website's code contains 5 folders: asset for picture, video storage; login for sign up, sign in, and password reset via email; overview for personal information overview; product is our main function; welcome for type choosing and website introduction.

We use OOP in our main function to connect Database and implement CRUD functions. This method helps us to add new data and function easily which is beneficial for team coding and enables a better extension.

In the other aspects, we use PP because we think this method will faster our project process. And the other aspects are less likely to have a big change. Because they are quite specific enough.

For asset folder, picture folder is the where all picture related elements in our website are stored similar to the video folder.

For login folder, login.php is made of a background video and a framework of signin/signup container. There are two forms which collect users' inputs. The form is linked to signin.inc.php and signup.inc.php which contain in the includes folder. After the form is submitted. These two files will get the information they needed and set the flag for sign in or sign up display in login.php. Then they will connect to database via dbh.inc.php, differentiate the errors, and implement their main logic (create user or sign in user) by using functions in functions.inc.php. Passwords will be hashed to protect user privacy. Furthermore, login.php will be redirected to and it will then give non-telling error feedbacks by using errorhandling files in includes folder.

If the user forget their passwords, by clicking the 'forget the password' in login.php, they will be redirected to reset-password.php in forgottenpwd folder. After the email form is submitted. In the reset-request.inc.php file, a selector, token, and expire time are generated. A new line will overwrite the old line in DB's pwdReset table. And an email will be sent to user's email account via xampp's sendmail service, the sender is configured as chang.2021.chen@gmail.com in our environment. We use this technology because it is embedded in the xampp already. Through

configuration can it send email via Gmail server. After the user click on the link in the email, create-new-password.php with hashed selector and token in the url will be redirected to. It will first validate user's request and then submit the new password. Error will be detected if user enter a not valid new password or the time is already expired. After that, DB will delete the relevant line in table pwdReset and update the line in table user. Then the link in user's email will be invalid and user's password will be reseted.
For overview, the user information will be displayed in one single page. This can by triggered by clicking the tile of employee and click the "Overview" button.
For product, there are two classes. DB is the class for DB connection. Model is the class for CRUD functions which extends the DB class. mainPage.php will be displayed when user has an employer account. In this page, the first seven managers will be display in gallery slides as default. We reference a jquery code to make the slides movable. Click their tiles will redirected users to their overview. User can also search the employee name and filter through different conditions. If the user has an employee account, they will be redirected to insertxml.php first. In this page, they will first be checked whether they have data in DB or not. After that, we can create or update their data. Errors will be detected if user has invalid inputs. Furthermore, if user clicks on the ' overview' button, their detailed information will be displayed to them. All functions mentioned above can be found in includes folder.
For welcome, this is the page which introduces our website to users and differentiates their user type.
For the structure of DB, ER model is below.

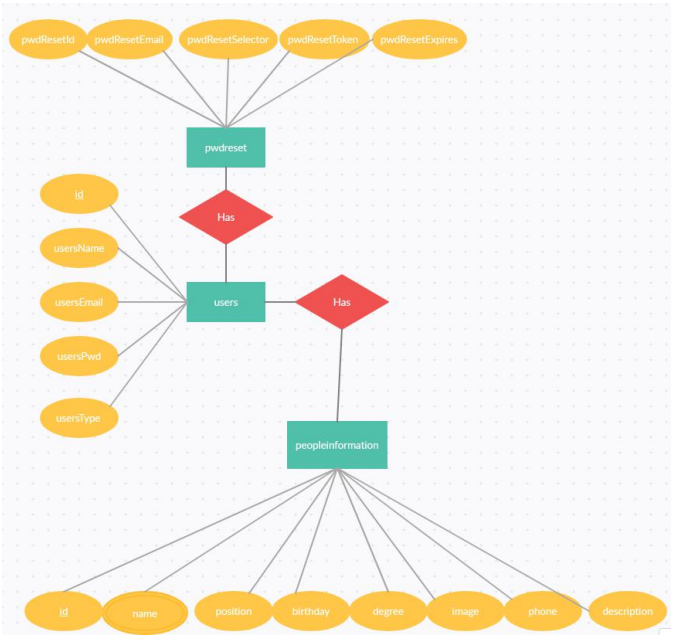


Figure 1 Structure of DB

## 5. Test

We did both White-box testing and Black-box testing. We did our unit test by static code analysis and peer code reviews, for example the product code is written by Shuzheng Wang and then reviewed by Chang Chen. We also did integration test, for example, the integration tests of login and product. Then we did system testing, we test the login interface, then creating and

editing an entity, followed by summary processing and deletion of entries, then logoff. We also invited Mr. Tianshi Feng to do a speak-out black-box test to our project. We noted down all the aspects to be improved in iPad then distributes the workload to different group members.
We also did accessibility test of our login system in Human Computer Interaction classes. We tested some aspects in the standard of Web Accessibility Initiative (WAI), the test indicates some problems that we can further improve.

## 6. Evaluation

Firstly, our database is quite simple. In the next time, we will construct a more detailed one. For example, phone is an attribute in the table peopleinformation. But it can be home phone, office phone, or mobile phone. This is an attribute that can be as a table.
Secondly, because in the Assignment 2 we didn't adopt the OOP, this time when we try to build the main function of our project in an OOP way we found OOP is quite beneficial in group programming. Though it costs us more time to construct the structure, we think this method is potential when the project become bigger. However, PP is also advantageous in speed for small website and is easy to understand. Next time, we will first construct the structure of the project then start to programme it.
We also found our website have many problems in IT security and human machine interaction aspects. For example, when we hashed the password, we didn't use salt, instead we just used the inner hashed function provided by php itself. Because we are all quite new to the php language and network security, next time we will try to use a more advanced way to ensure IT security.
The accessibility in HCI's WAI test also indicates our website may be not friendly to some people. For example, for people use TAB to read the website, our signin button can be reached obviously. We will also try to do it differently next time.
Furthermore, our imagination at first is also restricted by the uncertainty of our ability. Next time we think we can build more complicate functions since we have more preliminary experience in php programming.

Wang Shuzheng: The establishment of the database and the connection between database and php program. Code about the edit function of employee and the visit interface of employer. Files including emptycheck.inc.php, updatexml.inc.php, errorhandling.inc.php, insertxml.php, mainpage.php, updatexml.php, query.inc.php, insertxml.inc.php, model.php. And the construction of eight default data. Including the account, the people information, the finding and PS of their picture. Software testing. Joint author of report.

Gu Mingzhe: The design and code of welcome page; the design and code of employee information inserting form, the design and code of profile overview page; author of readme.md; joint author of report. Software testing.

Chang Chen: Code the login system. Separate the code into different files. Reconstruct the code in an OOP way. Review coding from Mingzhe Gu and Shuzheng Wang. Connect different parts together. Joint author of report.