**APP**: Employee Management

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**CLASS**: INFO 3245

**DOCUMENT**: PROJECT REPORT

**Description:**

Employee Management can be useful for small businesses who wants to keep track of their employee data. This application can create, edit and remove employees from database with some very useful feature which can make life easy for business users such as data validation and autocomplete to search for employees. This application has a login system which can help provide the security to the business owner since personal employee data needs to be protected at all cost.

**Motivations of the app:**

I have worked for various employers and I have seen that all of them has an employee management tool that is at their disposal. This is a very critical tool to have because as the company grows, and they hire more and more employees, it can get cumbersome to keep track of the employees. I wanted to create an application to address that issue. I wanted to create an application in which I can easily add my employees, search for them, view their information and remove them from database. I know most student application developers would love to make a game, but I love making application that are useful and can be used in a genuine business or daily life. I find games fun to play but I find that application that can make life easier is more fun to develop.

**Features:**

**Login Page**

One of the best features of the application is security that only an authorized user can access this application. The application has a database which stores the username and password for the administrator. The administrator username is 9-digit number. The application itself has a data validation system that can detect usernames that are not 9 digits and displays a message of “invalid username”. This system helps us to send unnecessary request to the database. Once the user enters the correct username and password. The user can use the application. There is only one user right now:

* Username = “100312938”
* Password = “default123”

**Forgot Password**

This application has a forgot Password option in the login page. As soon as the forgot Password option is checked, the password option disappears with the username option available. This button can grab information from the username field and can create an email to the tech administrator to request a password reset. This forgot password is only for the employer managing this tool

**Adding Employee**

Once the login is successful then a main page would appear and one of the option in that page would be to add an employee. This application is linked with a database that can store employee information. The application automatically generates the next available Employee ID so that there is no human error of giving the same employee ID to two different people. The following information can be added:

* First Name
* Last Name
* Wage(Per Hour)
* Phone Number
* Street Number
* Street Name
* Provinces
* Email
* Password

Once the user enters all the information it can submit and if its submit successfully then the user will be notified. Another useful feature adding employees is the data validation in program. This program will not allow the certain data to be entered. The criteria for data validation is:

* All fields must be filled out
* Wages can’t exceed more than 100 and less than 10
* Phone number must be 10 digits
* Password should be greater than equal to 8 characters
* A valid email should be entered

**Updating/Deleting/View Employee Information**

This section is one of the most useful part of the application. This section can view details about the employee, can fix any mistakes that was made when the employee was entered or if any information about the employee changed and can also remove the employee within the database. Once this section is opened, the user is given the option to find the employee it wants to focus on by either name or ID. This section also has auto complete search bar which allows the user to type the name or ID and it will give suggestions from the database. Once the proper ID or name is entered, the application will search for the employee and show the employee at the bottom of the page with the following information:

* Employee ID
* First Name
* Last Name

The following options will also be presented to the user:

* Update
* Delete
* View (To View detail information)

If the user clicks delete, the information of the employee will be deleted from system. If the user clicks view, a new page will open showing the employee information. If user choose to update then a new page will be open with text fields filled with employee information, and the user can change the information and press update. When the user clicks on update, the same data validation will be done by the program as adding an employee to ensure accuracy of data.

**Wage Calculator**

This application also has an additional tool which can be used to calculate wages. The user can use the auto complete text box to enter a employee ID and then Hours and the program will calculate the gross and net pay based on employee’s wage and display the following options:

* Name of the Employee
* Wage Per hour
* Gross Pay
* Taxes
* EI
* Net Pay

This tool can be used to quickly calculate employee wages based on their hours worked.

NOTE: EI and Taxes are calculated using a 20 percent rate for taxes and 5 percent rate for EI. These numbers are not accurate and are only showing calculated values.

**New concepts or insight Learned**

Generating an email

One of the concepts I learned is how to open email client and put information in the send email. This is a part of my feature called Forgot Password. I really enjoyed this concept because this is the first time my application was opening or accessing other application. I also learned that we can access the gallery as well to import and show pictures. Even though I didn’t implement the gallery, I was able to learn it when I was trying to learn about how to send an email.

Animation

I also learned how to animate objects in the android layout in a different way from what we have taught. Using animate() function we can scale them and position them differently. This was a fun experience as this makes the application more interactive. I have always been a fan of animation and adding this makes the application look much smoother and advanced.

AutoComplete

Another fun part of my development is playing around auto complete. I have always seen in google when we try to search and how it gives us suggestion. I was always very fascinated by that and wanted to implement it in my application. I wanted it in a way that a user can search for employees and it will show suggestion based on the list employees in a database. I had to grab the data and store it in a list for employee list and employee name and then connect with the auto complete to make that functionality work

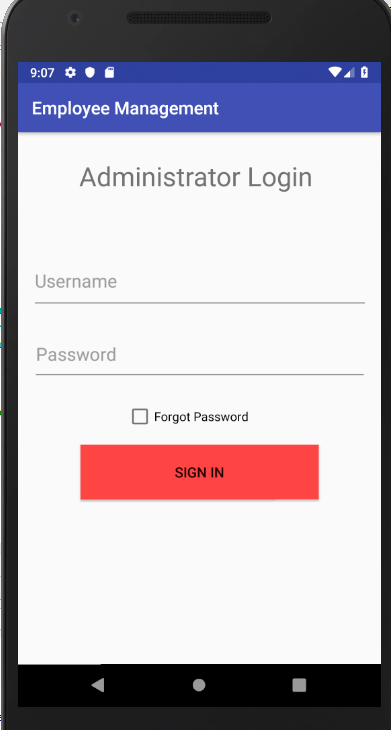
Data Validation

I heard a lot of people say how important it is to have data validation within the application to avoid inaccurate data, and I got to experience this first hand with this application. We, as developers, tend to feed the application the data its meant to deal with but when it comes to data validation we have to think of how can different types of data can cause errors. Basically, we must think from user’s point of view and take it into account how users can make errors and how can it impact our application. One of the example is that when we add an employee we must make sure to get user to fill all the fields. If the user leaves the fields empty, then it can cause our application to have errors while inserting data.

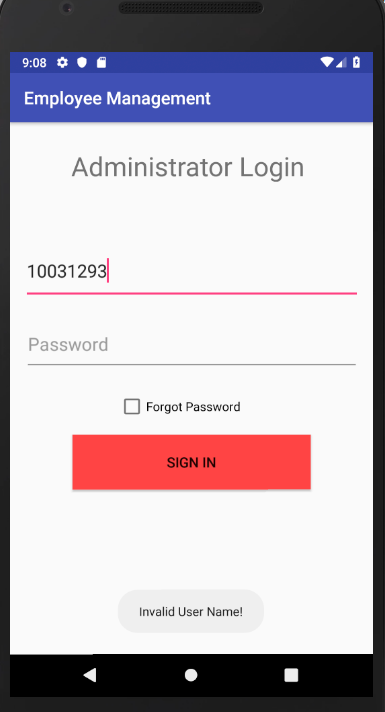
**Screenshots**

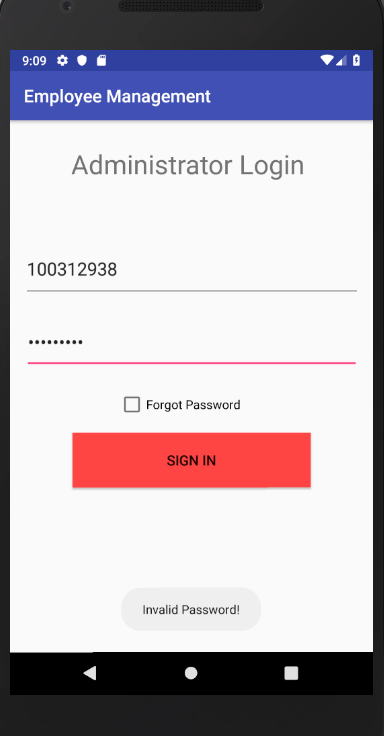
***Login System***

1. Opening the app, and this is the first screen available.



1. The user can enter the information to log in the application. Any incorrect password or username will be greeted by the message of being it invalid.

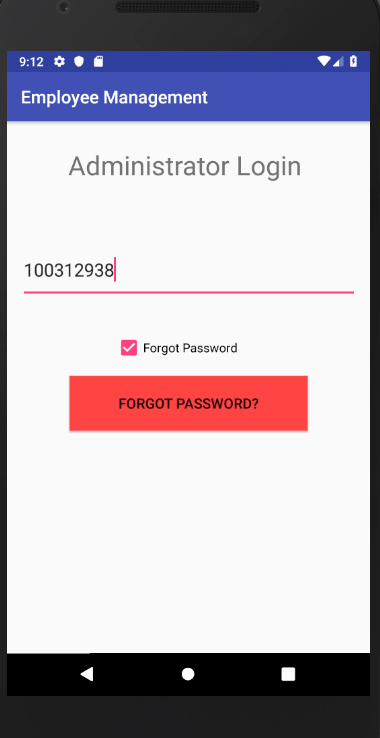




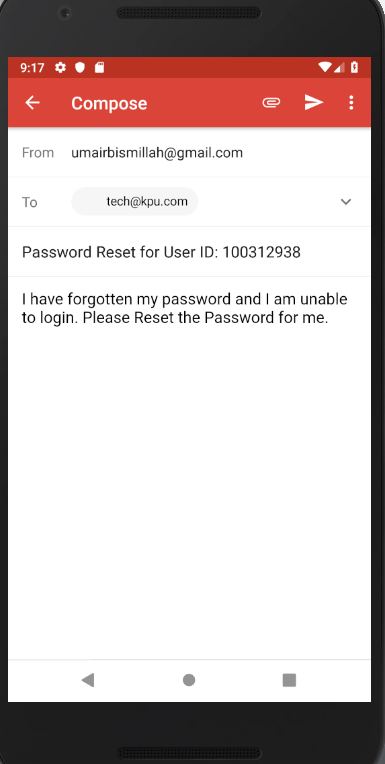
1. A successful sign in will show that the password is validated and move the main page



1. There is also a forgot password feature. Once checked the option then password field disappears and only username feature remains. The button’s text is changed to forgot password



1. After entering the username and clicking forgot password. An email client will be open with a ready to send email.



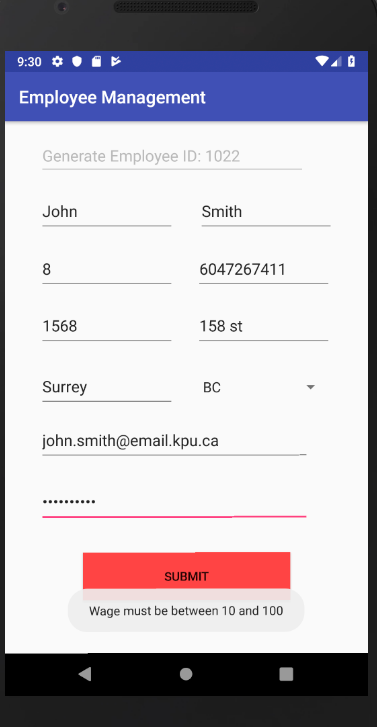
*Main Page : Adding an Employee*

1. The main page will show three options and in this section we will explore the section “ADD EMPLOYEE”
2. Once the main page comes up we can click the button “ADD EMPLOYEE” to add a new employee

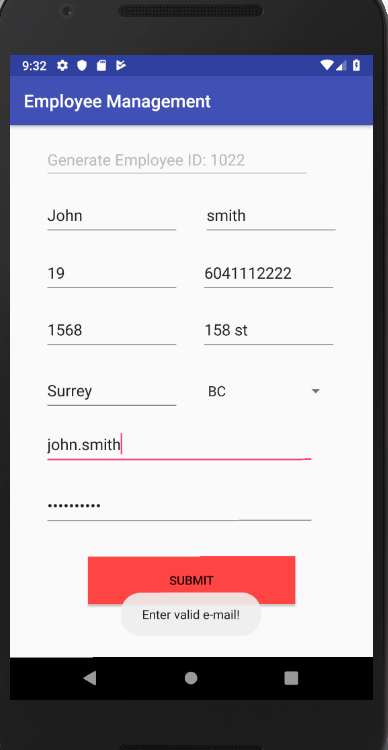


1. As soon as you go the next page, this page will appear with sections to fill the information of the new employee. An ID will be generated automatically for the new employee and will be shown on the top the page without an edit option. All options use EditText but the province can be selected from the spinner
2. The User can enter data and if the wrong data is entered according to the data validation criteria, then the user will be notified such as:

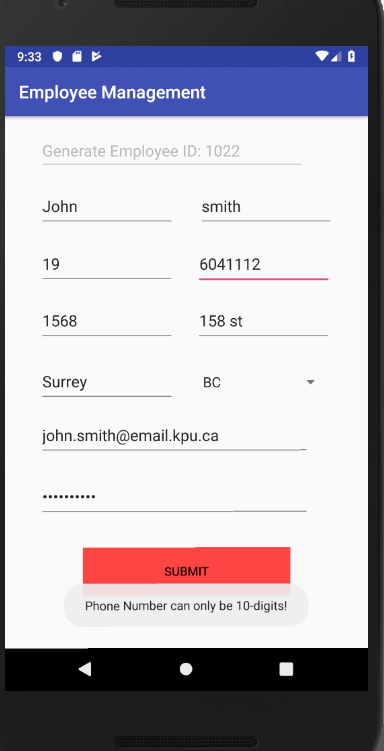
Incorrect Wage Error:



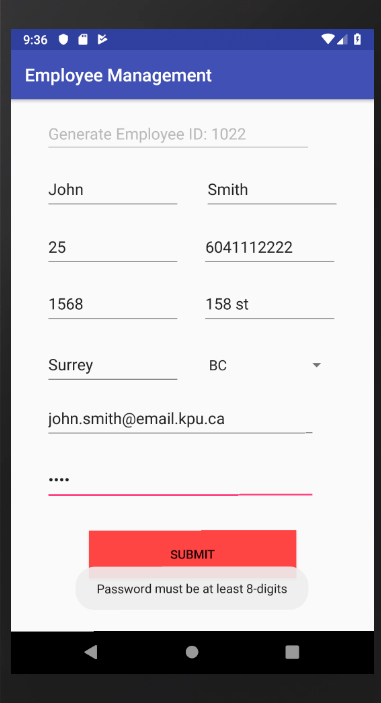
Invalid Email Error:



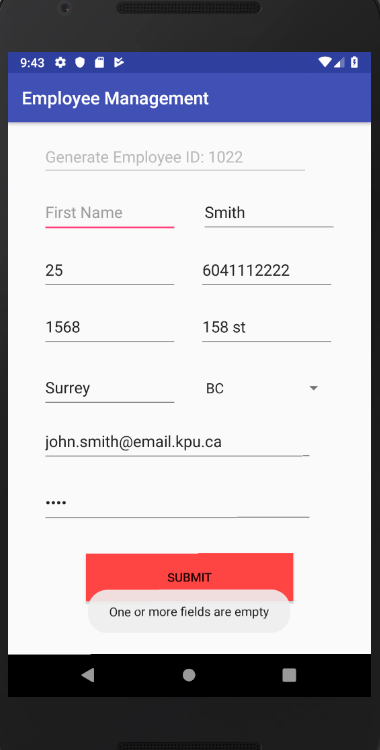
Invalid Phone Number Error:



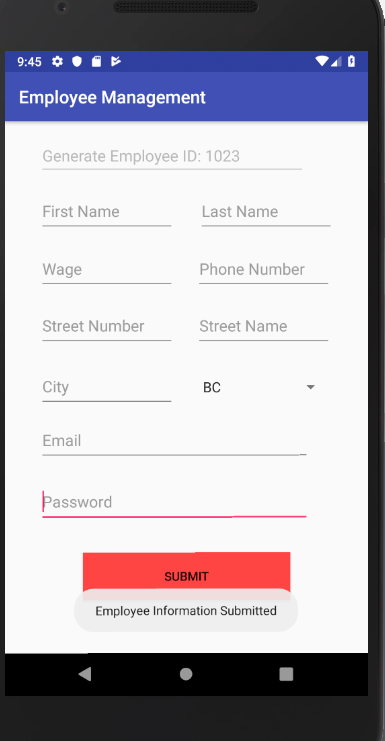
Invalid Password Error



Empty Fields Error:

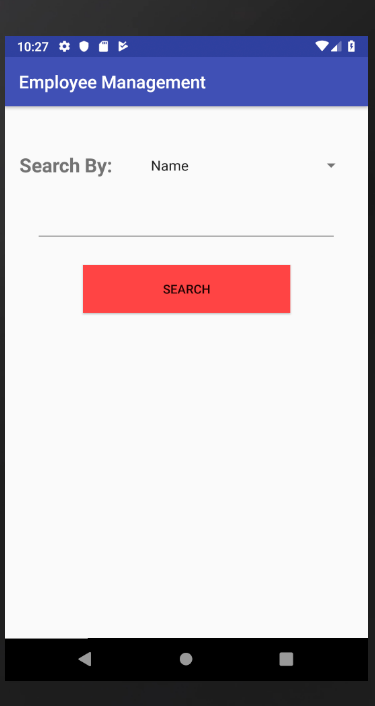


1. Once the correct data is entered then the user can click submit and it will be notified that the “Employee Information Submitted”. After the submission the fields will clear as well.



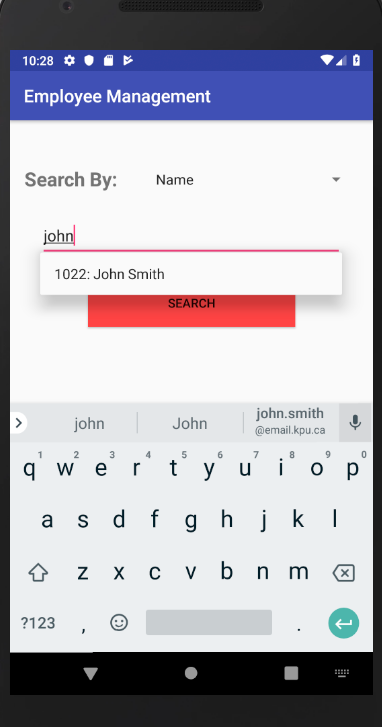
***Update/View/Delete***

1. Employee data can be updated, viewed and deleted from this section. Once we are in the main page we click the button “DELETE/UPDATE/VIEW EMPLOYEE”. After clicking the button a search option will open:

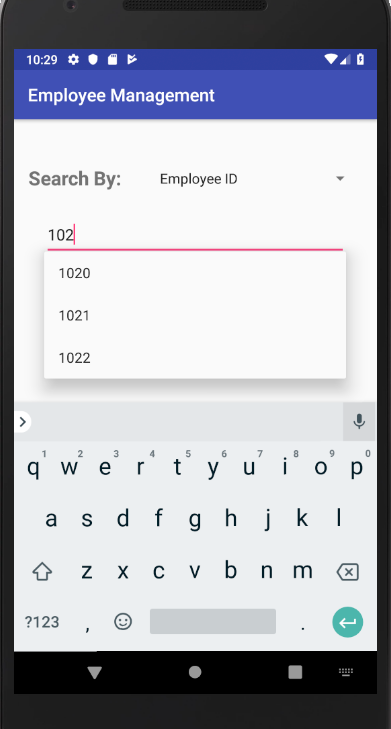


1. Employees can be search by name or ID

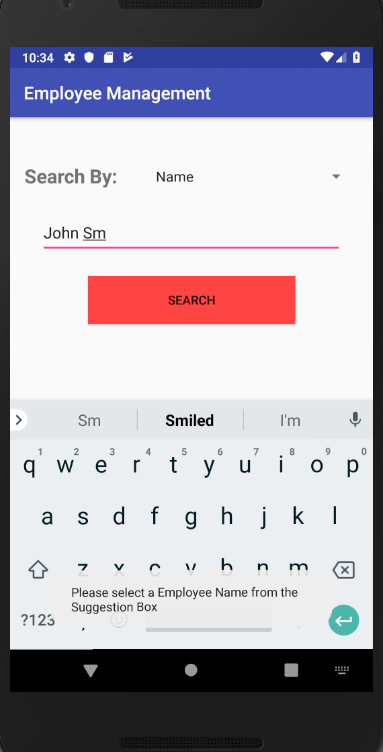
By NAME:



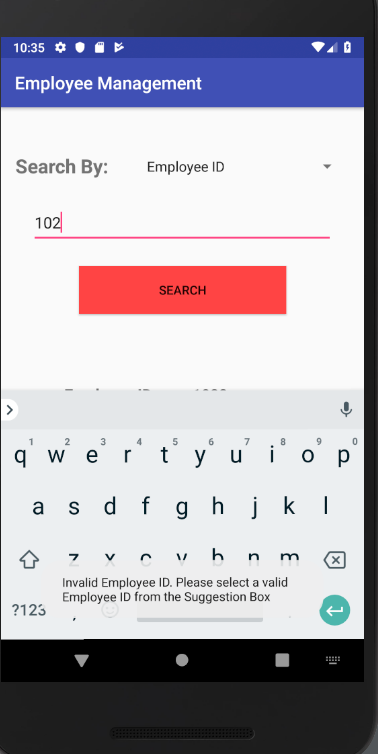
BY ID:



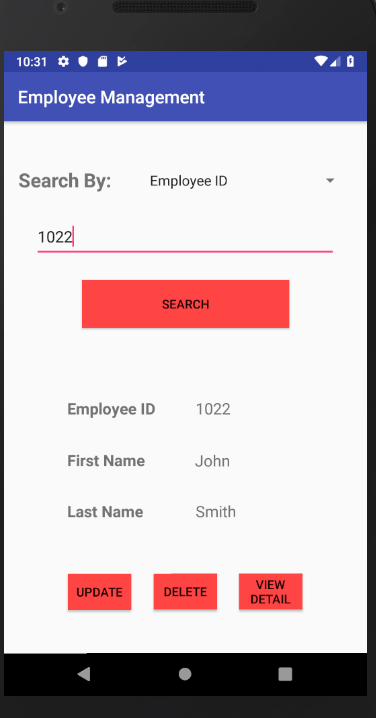
1. For employee Name, the selection must be chosen from the suggestion box



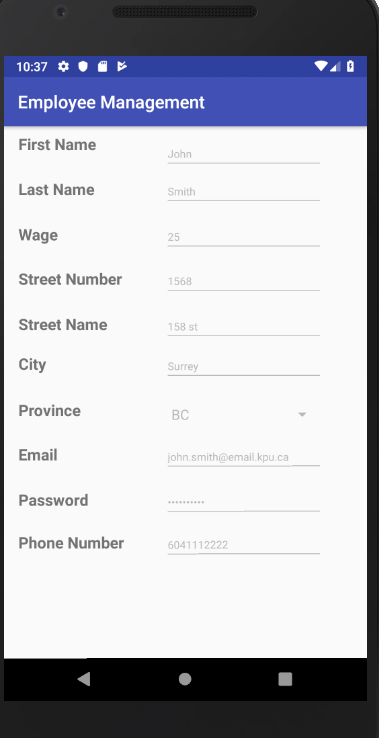
1. For Employee ID, an invalid ID will display an error of Invalid Employee



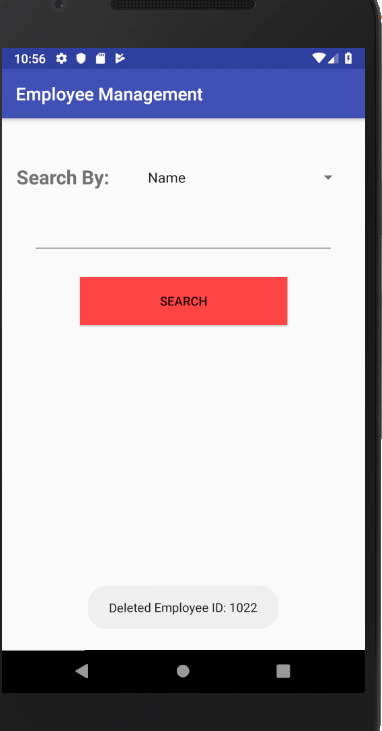
1. After entering the employee either by name or id. Click Search and the employee would be selected, and the user will be displayed with the employee’s ID, first name and last name.



1. After clicking search, you will be presented with three options. Either to update, delete or view detail.
2. If you click View Detail, then a detail information will be displayed about the employee

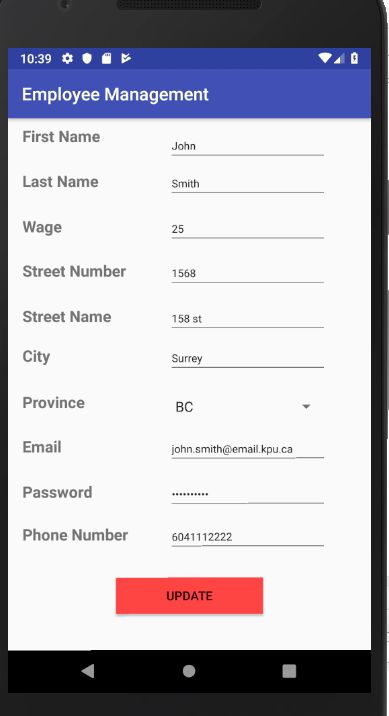


1. If you click the Delete button, a confirmation of removal will be shown

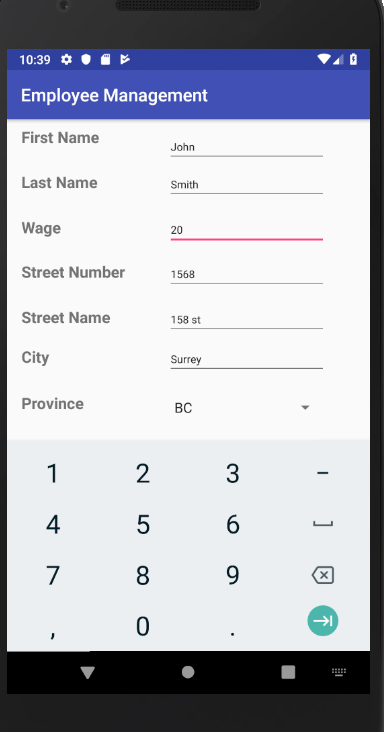


1. If you click the update button you will be moved to the new page to edit the employee

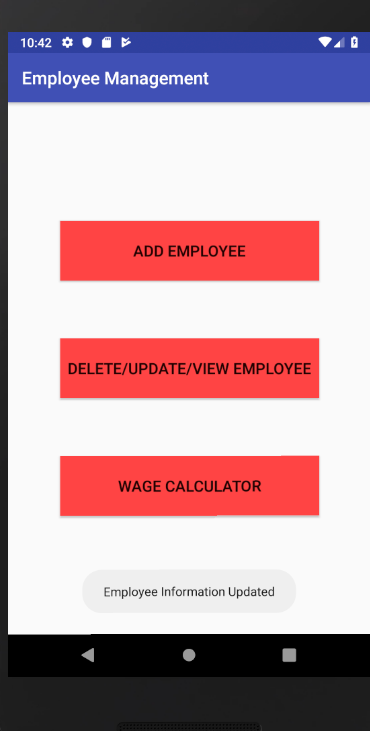
Scenario updating Johns wage to 20:



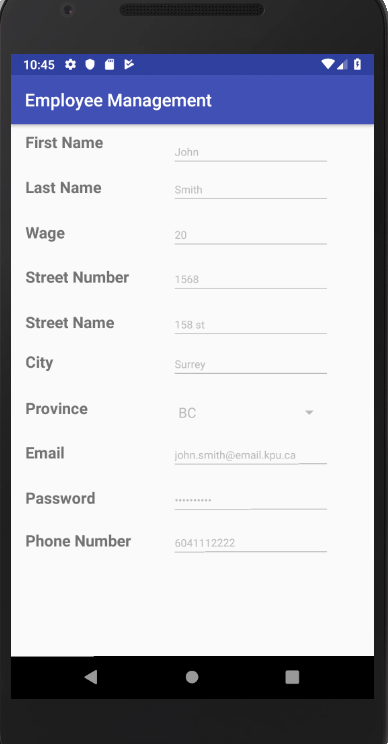
Updating John’s Wage



Pressing update

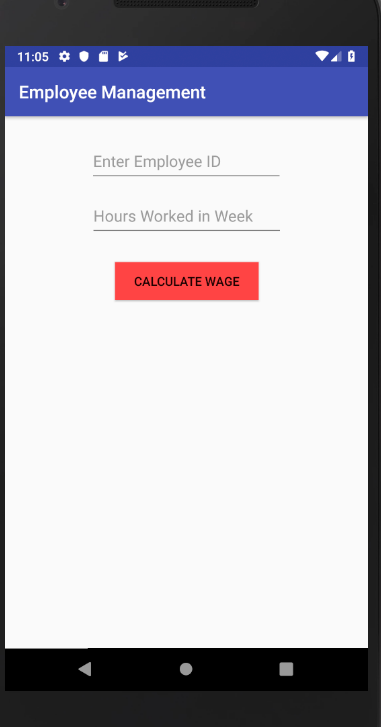


John’s updated Wage



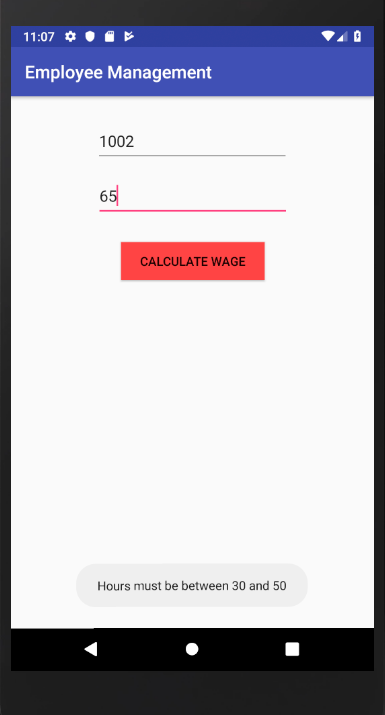
***Wage Calculator***

1. Wage Calculator option is available to Admin Main Page



1. You can select Employee ID using auto completion option and then enter the hours of work. The hours for a week can be minimum 30 and maximum 50 hours.

Invalid Hours:



1. After entering the correct hours and Employee ID. You will be shown the following Information:

