



Project Report(WS 18/19)

Title

Team Bravo



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Table of Contents

1	Introduction	2
1.1	Overview and Motivation	3
1.2	Goals	4
1.3	Some Useful Features	4
2	Architecture	5
2.1	Overall Architecture	5
2.2	Flow Diagram	6
2.3	State Diagram	7
2.4	Libraries Used	7
3	Project Components & Code Structure	8
3.1	Front-end	8
3.2	Services	8
3.3	Database Schema	8
4	Manual Instructions	9
4.1	Developers Guide	9
5	User Guide	9
6	Summary	9
7	Future Work	10
8	Reference	10

1 Introduction

1.1 Overview and Motivation

The objective of this document is to explain the Appointment Management of the TUD an android based application. The overall features of this App has been explained in detail. This document also contain the problem we face during development phase and the steps taken to solve these problems. This document can serve as a user guide and a technical guide for developers.

The number of students is increasing day by day which certainly has its benefits but it also create new challenges for administrator and their staff. Processes and procedures that previously were adequate may no longer be effective in handling a rise in new students, prompting administrator to seek out alternatives and new technology and techniques to assist them and their students.

One process affected almost immediately from an increase in students is appointment scheduling. A requirement for individual student or to attend seminars, events and other activities, this seemingly simple task can quickly become burdensome and challenging to stall members. This is especially true if the facility continues to rely on the most standard and also most inefficient manner of scheduling appointment it will waste a lot of time and create a lot of problem for the administrator and staffs.

Today in our SmartPhone-connected society where more and more individual prefer to conduct common tasks such as scheduling appointments online instead of picking up the phone and calling them in. Our android application is design to make the appointment processeasier for both administrative staff and students alike. Our Android app allow individual to conveniently and securely book their appointment online through this android application.

1.2 Goals

Any **User** of this app can:

- Register to the system by giving relevant(Email, password) information.
- User Profile Management(View/Edit personal details).
- Can View and edit profile(name, username, picture).
- Can make an appointment
- User can select date and time of their choice for appointment.
- Admin can add employee, professor, assistant to the system.
- Admin can also view, edit and delete employee, Professor and assistant from the system.
- Employee can update his days of availability and also the time.
- Employee can change their status(inoffice, out of office, busy, do not disturb).

1.3 Some Useful Features

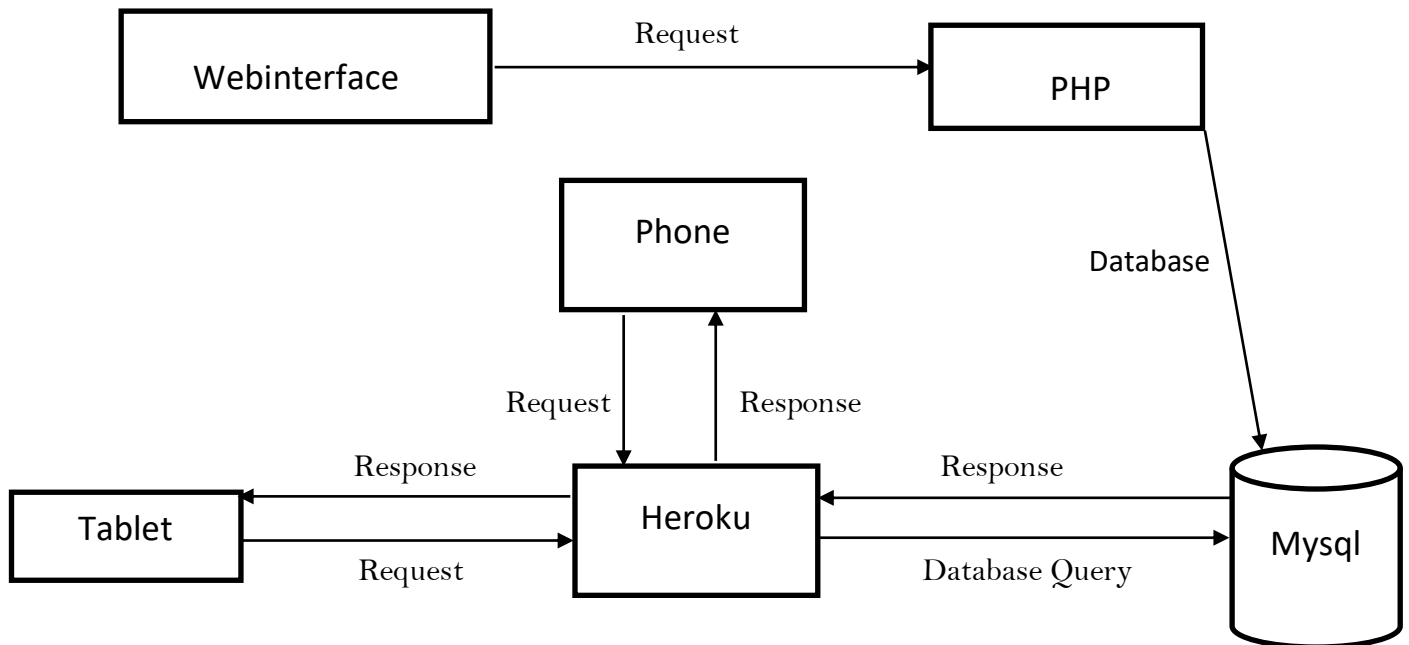
- The app is highly scalable and reliable.
- Unlimited Users.
- Usage of Android UI Patterns.

2 Architecture

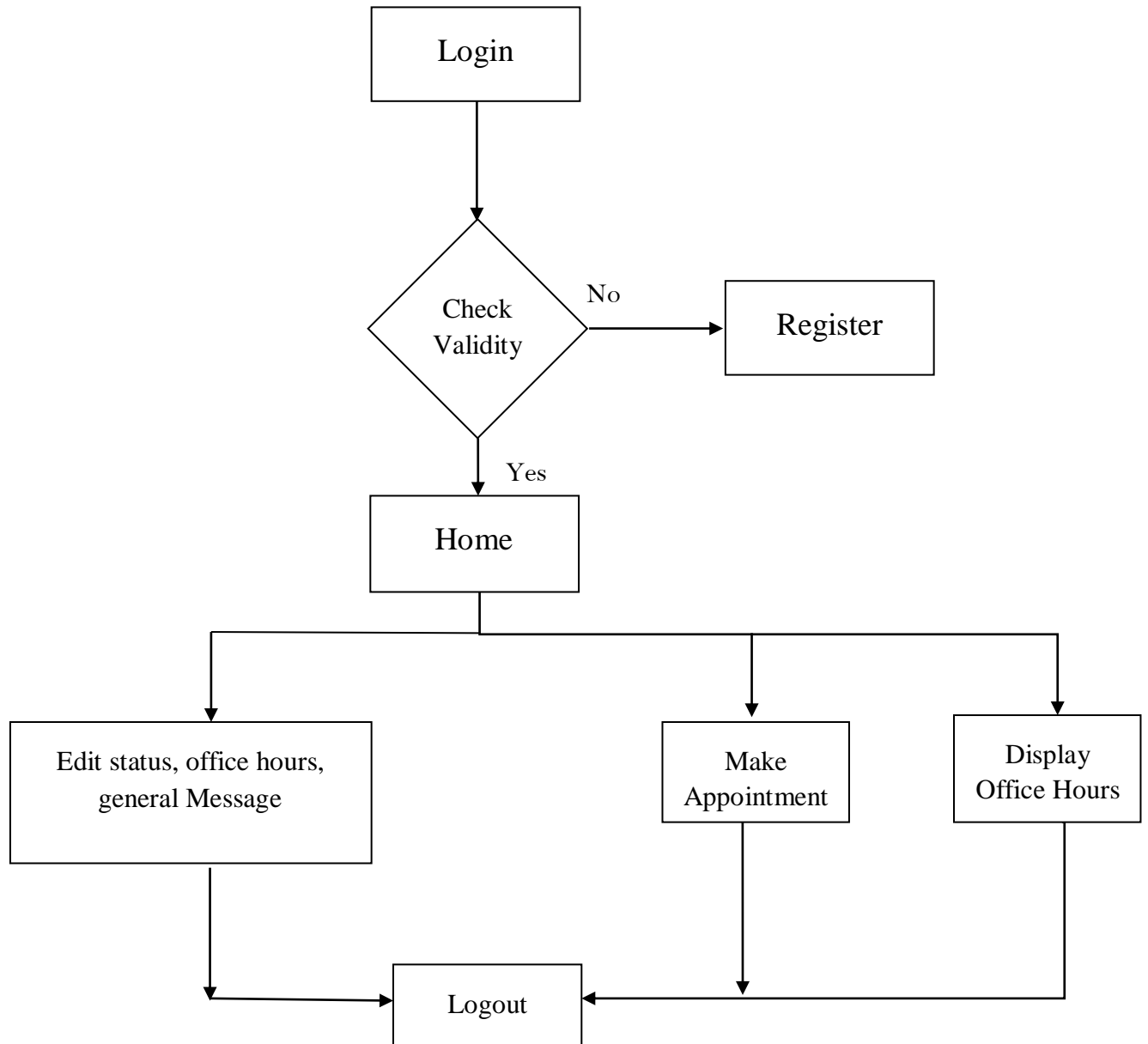
2.1 Overall Architecture

In the below Architecture, we have explained the complete workflow of our App.

Architecture Diagram:



2.2 Flow Diagram



2.3 State Diagram



The state diagram of App comprises of 4 stages which are as follows:

- **Register Phase**– In this phase, user needs to give his/her information like: Name, Email Address, Set a password.
- **Login Phase**– In this phase, user get authenticated.
- **Activity Phase** – In this phase, user get all the services provided by our application like scheduling an appointment by giving his name email, select date and purpose of appointment.
- **Logout Phase** – In this phase, user is logged out.

2.4 Libraries Used

- **Heroku**:To deploy our web-services code written in node.js.
- **Appcompat**: It provided the material color themes, widget tinting.
- **CardView**: To display the employees.
- **Retrofit and RxJava**: To connect to Heroku.
- **Constraint-Layout**: For UI-design.

3 Project Components & Code Structure

3.1 Front-end

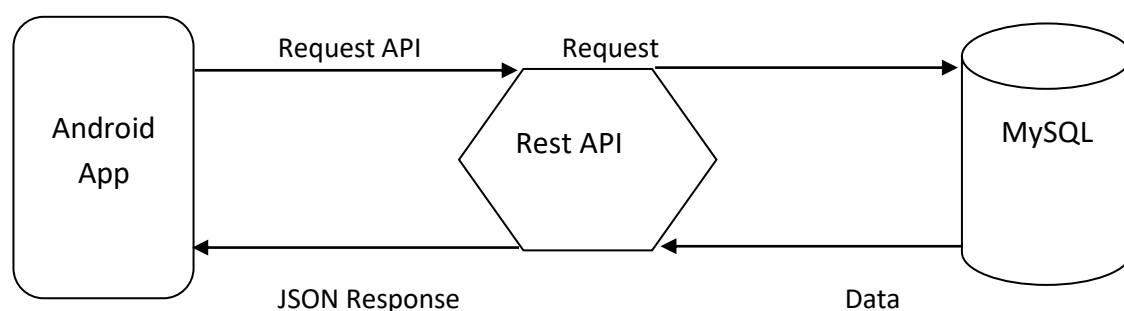
- **Google Calendar API:** This library provides options to retrieve/store data from/in a Google calendar.
- **Google-gson:** Gson is a Java library that is used to convert Java Objects into their JSON representation. In other words, it is used to convert a JSON string to an equivalent Java object.

3.2 Services

- **Node Express.**
- **MysqlNpm.**

3.3 Database Schema

MySQL has been used for database interaction. REST API backed up with a MySQL database is a very common schematic of an Enterprise mobile application. We use RESTful service to read data from a MySQL database table. In the server side, the API service reads data from the database and sends the response in JSON format. After receiving the response, the Android application displays the row of items in a ListView by parsing the JSON data.



4 Manual Instructions

The below instruction will help developer to run the project in your local system, and explains project structure to enable developer to add maintain and contribute to the project.

4.1 Developers Guide

Following are the steps for a developer to follow to setup the environment for the project
Setting up the git repository

1. The latest version of the code is present at the repository present at the following link:
<https://scm.informatik.tu-darmstadt.de/projects/iptk-ws18-19-team-bravo/repository>.
2. After getting the rights the repository, clone the project code present in the *master* branch.

<https://scm.informatik.tu-darmstadt.de/projects/iptk-ws18-19-team-bravo>

Setting up the IDE:

1. Download and install Android Studio.
2. Open and run the project in Android Studio which will install all the dependencies via gradle.
3. After installing all the dependencies your project is ready to be executed.

5 User Guide

Following are the steps for the user to get acquainted with the application.

1. Download and install the application APK.
2. Make an account by filling all required information.
3. Now you are all done and ready to use our application.

6 Summary

This lab has been a learning curve for all of us, through this project we get to know different aspects of development using numerous plugins for node.js and android development. We have used MySQL for backend storage where we are storing user profiles, and data which is returned from google API. For backend services we are using node express framework. Though this application is complete yet there is always some space available for enhancements which can be our future work.

7 Future Work

In this section, we have highlighted certain features which can be implemented for the future releases to make this app more User friendly. Below some of the suggestion for future work.

- Appointment Scheduler.
- Push notification when appointment is made.
- Instant data update from phone to tablet.
- Get location of employee.

8 Reference

- <https://scm.informatik.tu-darmstadt.de/projects/iptk-ws18-19-team-bravo/repository>.