PRACTICE SCHOOL-II
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DESIGN & DEVELOP A NATIVE ANDROID APP FOR A WORDPRESS BLOG AND INTEGRATE IT WITH GOOGLE FIREBASE FOR CLOUD FUNCTIONALITY

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Abstract

This synopsis outlines the key content, motivation, problem statement, expected result and related work for the project on "**DESIGN & DEVELOP A NATIVE ANDROID APP FOR A WORDPRESS BLOG AND INTEGRATE IT WITH GOOGLE FIREBASE FOR CLOUD FUNCTIONALITY**". The WordPress blog for which the android app has to be developed is designed, developed and maintained by Web Seasonings. The name of the blog is "Save Delete", the website is "www.savedelete.com". Save Delete is one of the most popular blogs in India.

1. Motivation

Mobile apps are becoming the main medium of digital interaction. The modern-day users are on the more and they are utilizing the mobile application to be on track. Regardless of whether they use a tablet, mobile phones or any other smart devices - they have access to the data they require, a reason due to which mobile applications have such prominence in the current business economy. Regardless of what a business is, a mobile application helps in getting and retain the customers. In the company I am interning in, the company wanted to have a mobile application for a blog they developed (www.savedelete.com).

The reason why Mobile Apps are interesting to me is that from the very beginning of my digital life. I have been using, interacting with these apps and I find it very fascinating how they make our life very easy. Since then I too wanted to make other people's life easier by developing and designing these apps. The project I am working on is also a relatively new thing to work with. In mobile development there are a lot of things to learn, and everyday something new is coming, so one needs to be updated.

The company, Web Seasoning has a blog that is focused on digital trends. they assigned me the project to build a mobile app for the blog. The reason why they are interested in this project is that they will be able to have more visitors for the blog. Also, the end users will have a native mobile experience while interacting with the blog posts.

2. Problem statement

Problem Statement – To design, develop and implement a native mobile application for the "Save Delete" WordPress blog (www.savedelete.com), and integrate the application with cloud services using Google Firebase. The cloud services will include: User authentication, saving user data and live likes counter.
The specification of the mobile application are as follows:
1. Ability to login to the app using Google OAuth or Email based login
2. Ability to browse, search and read all the blog posts that are posted on the "Save Delete" blog in a native android way.
3. Ability to browse and read blogs from a specific category.
4. Ability to "Save" blog posts for future reference and should be shown in a new activity.
5. Ability to "Share" the link of a blog with friends on various social media platforms.
6. Ability to "Delete" a blog post if a user didn't like it.
7. The blogs which are "Saved" & "Deleted" by a user should be stored in Firebase Real Time Database for analysis.
8. Ability to browse, download and set wallpapers.
9. Ability to like a wallpaper.

3. Method

The whole project can be broken down in several modules, the detail of each module is given bellow.

1. **Planning:** Without the perfect plan, calculating the strengths and weaknesses of the project, development of software is meaningless. Planning kicks off a project flawlessly and affects its progress positively. In this project, I long with my industry mentor decided what all should be included in the application, and we noted down each and every feature.

2. **Analysis:** This step is about analyzing the performance of the software at various stages and making notes on additional requirements. Analysis is very important to proceed further to the next step. In this project, at this step we decided what all libraries and APIs we need to use to develop the application. We also analyzed all the APIs.

3. **Design:** Once the analysis is complete, the step of designing takes over, which is basically building the architecture of the project. This helps remove possible flaws by setting a standard and attempting to stick to it. In this project, at this step we decided to use an industry standard MVVM architecture to build the application.

4. **Implementation:** The actual task of developing the software starts here with data recording going on in the background. Once the software is developed, the stage of implementation comes in where the product goes through a pilot study to see if it's functioning properly. Here the pervious 3 steps are combined to develop the application. For implementation of the application, we are using Android Studio IDE.

5. **Testing & Integration:** The testing stage assesses the software for errors and documents bugs if there are any. In any project testing and implementation goes one after the other, same is with this project.

6. **Maintenance & Deployment:** Once the software passes through all the stages without any issues it is to undergo deployment and maintenance.

All these modules will give a checkpoint to measure the progress of the project and fulfillment of the problem statement.

4. (Expected) Analysis and Results
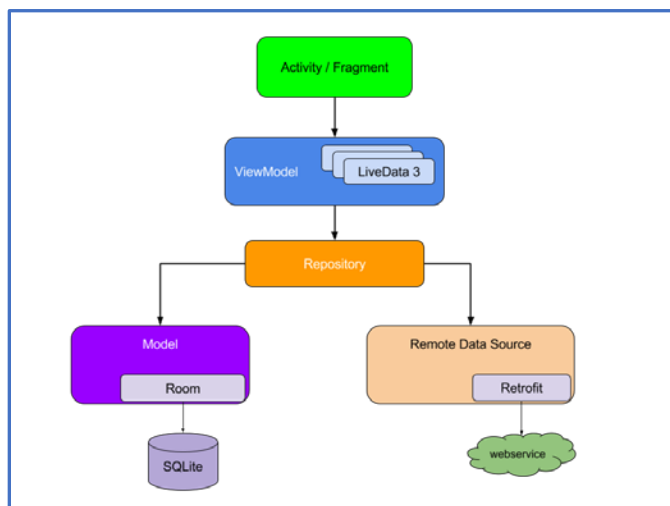
The Given diagram shows the flow of the application:

It is expected that the same flow will be followed in the developed application. It is also expected to fulfill the problem statement that is listed in the 2nd point of the synopsis. It is expected to follow the method listed in the 3rd point.

The deliverables of the project are:
1. Design of the Application
2. Mobile Application following all the specifications and requirements.
3. Progress report to the company.
4. Access to firebase database and services.

5. Related work

The resulting mobile application will be built upon various 3rd party libraries and some official APIs from WordPress and Google. The following text give details about various libraries and APIs that will be used in the mobile application.

1. **WordPress REST API:** The WordPress REST API provides an interface for applications to interact with your WordPress site by sending and receiving data as JSON (JavaScript Object Notation) objects. This API will be the core of the application as all the data the app will show it will come from this API.

2. **Android Jetpack:** Jetpack is a suite of libraries to help developers follow best practices, reduce boilerplate code, and write code that works consistently across Android versions and devices so that developers can focus on the code they care about. From this suite of libraries, we will be using several libraries.

3. **Google Firebase:** Firebase is a Backend-as-a-Service (BAAS) that allows developers to focus crafting fantastic user experiences and has cloud service in the application without managing a dedicated server. In this project we will be using Google Firebase to provide services like User Authentication, saving user data etc.

4. **Retrofit:** Retrofit is a REST Client for Java and Android. It makes it relatively easy to retrieve and upload JSON (or other structured data) via a REST based webservice. In Retrofit you configure which converter is used for the data serialization. Typically for JSON you use GSon, but you can add custom converters to process XML or other protocols. Retrofit uses the OkHttp library for HTTP requests. In this project retrofit will be used to communicate with the WordPress REST API.

5. **Glide:** Glide is a fast and efficient open source media management and image loading framework for Android that wraps media decoding, memory and disk caching, and resource pooling into a simple and easy to use interface. In this project Glide will be used to fetch images from Cloud server and display in the application.

6. **Android Studio:** Android Studio is the official Integrated Development Environment (IDE) for Android app development, based on IntelliJ IDEA. On top of IntelliJ's powerful code editor and developer tools, Android Studio offers even more features that enhance your productivity when building Android apps. Since this project is about build an android app Android Studio is the best tool to use.

7. **Postman:** Postman is a software development tool. It enables people to test calls to APIs. Postman users enter data. The data is sent to a special web server address. Typically, information is returned, which Postman presents to the user. For analyzing the WordPress REST API, we use postman.

6. Conclusion

In today's world where everyone wants to have an app for everything ranging from a calculator to a banking app. It is important to develop mobile apps that can scale and are reliable, which means that the app can use latest features, implement new features and can run on most of the devices.

For every development project we need a plan to execute, in this project also we have decided a plan to follow and analysed the expected results.

References

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