



KITCHENETTE RECIPES

Design Manual

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Abstract

The purpose of this project is to create an Android application where the user can mark foods that they have in the house and based on these foods the app should suggest recipes they can cook. The application should present the user the option to add their own custom ingredients and recipes. If a user selects, they have cooked a certain recipe, the app should automatically update the contents list to remove the ingredients they used. If a user wants to make a recipe, but does not have all the necessary ingredients, the app should present the user with a “shopping list” of ingredients to buy.

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Section 1 - Introduction

The following document will explore the design elements of building the Kitchenette application. This document will define the technologies to be used in building the application, the database schemas to be implemented, and flesh out any UML use case cases as defined in the Functional Specification.

As decided in the Functional Specification and as examined by the Research Manual, the application will be built as an Android application. As such, the technologies chosen to build this application, as discussed in Section 2, must reflect this choice. The technologies chosen include:

- Kotlin; a relatively new programming language,
- SQLite; a database management system tailored specifically for mobile devices,
- Firebase; a management platform for mobile applications in the Google Cloud Platform and
- Android Studio; Google's own Android development environment.

Finally, in relation to the needs of the application, as well as the chosen database management technology of SQLite, a database schema will be examined in Section 4 of this document. This schema must include an ER diagram and show an overview of the proposed layout of the database tables.

All the information compiled in this document will allow the Kitchenette application to be built much more smoothly. Once the details outlined in this document are followed, the Kitchenette applications' development should be clearly displayed for each stage of the development process.

Section 2 - Technologies

The technologies decided to be used in building this application are listed below.

Section 2.1 - Kotlin

Kotlin is a cross platform, general-purpose programming language. Kotlin is designed to interoperate fully with the Java programming language and the JVM environment but can also compile with JavaScript or native machine language. In October 2017, Kotlin became the first language after Java to be officially supported by Google for Android development. With the release of Android Studio 3.0, Kotlin became officially integrated into its IDE. Android applications developed in Android Studio can now be compiled under the Java or Kotlin compiler, with the latter including support for Java 6 and Java 8 bytecode. Its future development is sponsored by both Google and JetBrains. Its syntax is like Java and works off Java Class Libraries; however, it is more concise. Kotlin takes its inspiration from many languages apart from Java, including C, C++, Perl, Pascal and Python, among others (JetBrains, 2019).

Section 2.2 - SQLite

SQLite is a relational database management system contained in a C programming library. SQLite is not a server-side management system but is embedded into the end program. SQLite is small, fast, self-contained, highly reliable and a fully featured SQL database engine. It is the most used database engine in the world and comes pre-packaged into all mobile phones, most computers and countless other devices. SQLite uses the same syntax as SQL for the most part. However, it is limited to only basic data types. SQLite does not include Booleans or datetime data types (SQLite, 2019).

Section 2.3 - Firebase

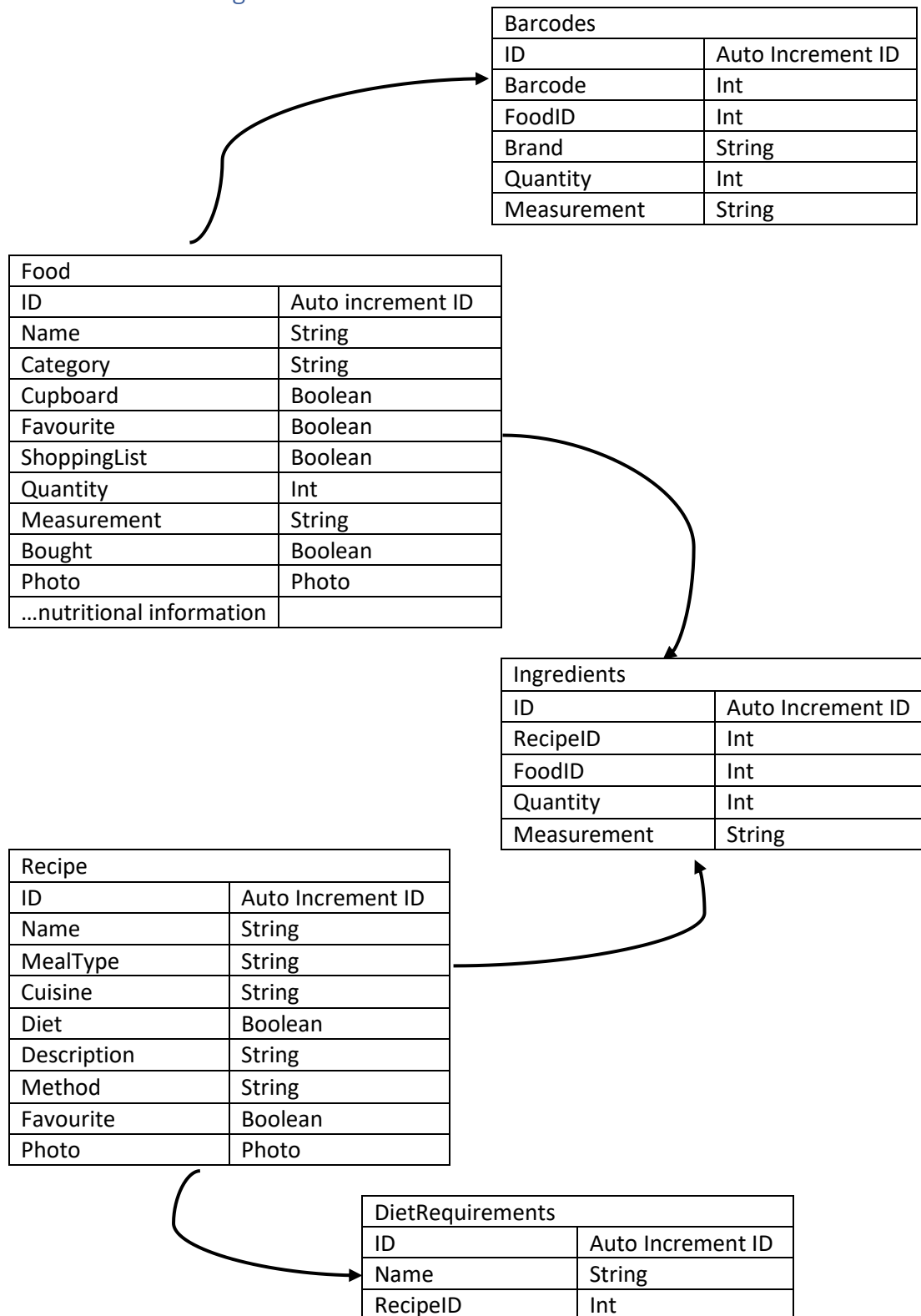
Firebase is a mobile and web application development platform. It was developed by Firebase Inc. in 2011 and then was acquired by Google in 2014. The Firebase platform contains 18 products, covering analytics, development, cloud storage, real time database management, stability, performance and advert implementation. Firebase platform can be downloaded as an API and integrated with Android applications, so they may be backed up and stored on the Firebase cloud, based on the Google Cloud Platform. From there, any of Firebases products can be implemented into the application. Firebase is the management infrastructure behind many successful applications including Duolingo, Shazam and Trivago. It is cross-platform and supports development with Android, iOS, web browsers, unity and C++ (Google, 2019).

Section 2.4 - Android Studio

Android Studio is Google's official integrated development environment for the Android operating system. It is built on JetBrains IntelliJ IDEA software specifically for Android development. It supports the development of Android applications in three programming languages, Java, Kotlin and C++. Android Studio offers a variety of development tools such as an intelligent code editor, Android Virtual Machine and a Visual Layout Editor for XML. Android Studio is fully free to use and can be downloaded onto windows, mac or Linux operating systems (Google Developers, 2019).

Section 3 - Database Schema

Section 3.1 - ER Diagram



Bibliography

Google Developers, 2019. *Android Studio*. [Online]
Available at: <https://developer.android.com/studio>
[Accessed 9 April 2019].

Google, 2019. *Firebase helps mobile app teams succeed..* [Online]
Available at: <https://firebase.google.com/>
[Accessed 9 April 2019].

JetBrains, 2019. *Kotlin FAQ*. [Online]
Available at: <https://kotlinlang.org/docs/reference/faq.html>
[Accessed 09 04 2019].

SQLite, 2019. *What is SQLite?*. [Online]
Available at: <https://www.sqlite.org/index.html>
[Accessed 9 April 2019].