Politehnica University of Timișoara

Faculty of Automation and Computers

**Department of Computer and Information Technology**

**Split the Bill**

Bachelor Thesis

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**Contents**

1. INTRODUCTION
   1. PROBLEM STATEMENT
   2. SCOPE OF THE PROJECT
2. TECHNOLOGIES
   1. FLUTTER SDK
      1. DART
      2. SCOPE MODELS
      3. OTHER PACKETS
   2. FIREBASE
      1. AUTHETIFICATION
      2. NO SQL DATABASE
3. APPLICATION DESCRIPTION & DESIGN
   1. APPLICATION DESCRIPTION
   2. SPECIFICATIONS
   3. ARCHITECTURE
   4. STRUCTURE OF THE DATABASE
4. APPLICATION IMPLEMENTATION
   1. ACCOUNT
      1. REGISTRATION
      2. AUTHETIFICATION
      3. EDITING USER INFROMATION
      4. SIGNOUT
   2. BILLBOARD PAGE
   3. SUPPLY PAGE
   4. CHORES PAGE
   5. MORE PAGE
      1. APARTMENT INFROMATION
      2. CHANGE THEME
      3. REPORT ISSUE
5. USE CASES
   1. EXAMPLE & SCREEN SHOTS
   2. USE CASES
6. CONCLUSIONS & PERSPECTIVE
   1. CONCLUSIONS
   2. CONTRIBUTIONS
   3. FUTURE WORK
7. REFERENCES

1 Introduction

* 1. Problem Statement

Nowadays a lot of people move into the city, at first people think of getting their own place but it is rather expensive to do so, and for the sake of saving up money people search for rooms in shared flats. Living with more than three people in an apartment can become difficult, especially when it comes to sharing the expensies and splitting the money for the cleaning supplies that everybody uses. It is also difficult to keep track of who contributed to the cleaning of the common areas in the flat.

Conflict can arrise from tha lack of communication between the roommates, because of their busy schedule, and they have no time to check in with each other, thus making it hard to live with one another. Such as having some friends over without asking, or having forgotten that the landlord was coming and people did not know about it. These can lead to conflicts and missunderstandings, thus forcing some people to find a new place to live in.

In order to prevent such things the people who live in shared flats must well organized, and have to have a good money management skills, but a lot of people who live in shared flats are young adult who do not yet posses there skill sets, thus making it difficult to get along with other and split everything correctly.

* 1. 1.2 Scope of the Project

The scope of the project is to help people who have roommates organize themselfes more easily when it comes to trivial matters such as chores, or splitting the money for the cleaning supplies. For this reason I was thinking of develeping a mobile application, the reason for developing a mobile application is because nowadays people are on their phones all the time, and almost everybody has a smart device. Because of this reason it is easier to check the application if something has came up or something has changed or not.

The reason why I did not develop a web page is because users prefer native application instead of web applications. There are a lot of reasons why this is the case, one of the reason is that it is faster and native application are more easily personalized, and users tend to like personalizing their application. Another reason for prefering application is that is more secure, and they can work up until a point without internet connection.

The mobile application is called split the bill, this application helps with spliting the chores and cleaning supplies between the people living in the same flat, and it also has a billboard page for putting announcements for people to see. In short the application will be useful for people who want to keep track of the things above and help them organize themselfes more easily.

Technologies

* 1. Flutter SDK

Flutter is an open source  cross-platform mobile app development framework, with which the developers can create native applications  for both the Android and IOS platform. This framework is created by Google. The programming language used by Flutter is called Dart.

The framework doesn’t depend on the widgets that are used by the platforms, because it only needs the canvas to draw it’s own rendering.

Flutter implements the OOP principle of the composition over inheritance.

??should I write here about composition over inheritance or in the architecture part??

A flutter application consists of a widget tree, so the application consists of small widgets which creates a complex user interface. A widget can be of two types. Stateless Widget which doesn’t change thus it is a final widget, and the Stateful Widget, this type of widget changes states by calling the function setState() which notifies the listeners that the state of the widget has changed thus the widget is redrawn.

Packets in dart???

* + 1. Dart

Dart is an object oriented programming language that uses both JIT(Just In Time) compilation and as well as AOT(Ahead-Of-Time) compilation.

JIT :

AOT:

* + 1. Scope Models

What are scope models???

* + 1. Other packets

Other packets used