INDY-12- College Student Budget App (Frugal U)

Software Design Specification

Course: CS 4850-01 Senior Project

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1.0 Introduction

The Software Design Specification (SDS) document elaborates on the functional and nonfunctional requirements for the product. The SDS highlights the design of the application from both a high-level view as well as a low-level view.

The SDS includes the overview of the system, along with constraints and guidelines for the development of the system at a high level. The SDS covers the layout of the user interface, as well as the flow of functionality throughout the application.

2.0 Design Considerations

The software application will require certain assumptions, as well as constraints for the design of the application. The application will need to have a wide range of functionality for devices, as well as having high ease-of-access for users for a good User Experience (UX).

2.1 Assumptions and Dependencies

The application must be able to operate on a wide range of mobile devices, such as Apple and Android devices. Thus, the software application must be able to operate on operating systems such as iOS and Android OS.

The application should be easily interpreted and accessible. The UX through the instructions and operations within the application should be clear and concise for the user to easily understand, while maintaining the complexity on the backend to calculate the functionalities of the application.

It is possible that the software application will require alterations to the design to adapt to the needs of the system’s functionality, as well as presentation ability. For

example, a design choice on the home screen of the application taking up too much space may require a simplification of the design or an alternative all together.

2.2 General Constraints

The application must be functional on a range of mobile devices. Functionality should not vary from device to device.

The application, if within the ability, will make use of a database system to store and recall input data from the user to be able to access in the event of a local data loss, for example the mobile device drive losing all data within. Thus, the application will need a method in which it is able to connect to a form of cloud server to call upon that stored data within the database.

The application may also make use of the mobile device's memory and storage to document and save the data used within the application. The usage of the memory and storage should be kept to a minimum while still being able to rapidly call upon the data as needed.

2.3 Goals and Guidelines

The application will follow several goals for the system design. Goals may be adjusted, as well as additional goals being within the possibility.

2.3.1 Simplicity for Users

The application must not be over-complicated. The goal of the application is to provide clear and concise functionality. Options and operations should be easily understood, as well as operating well within their defined task.

2.3.2 Flow of Functionality

The application should flow through operations and functions cleanly and reasonably. Each selection should transition to an equivalent page or prompt that represents the chosen operation. This will further push the simplicity of the application, while not taking away from the complexity of the functions within the application.

2.3.3 Feeling of Satisfaction

The application should provide a feeling of satisfaction for the user when the user's goal or goals are met. For example, a message of congratulations or affirmation upon reaching a goal or goals. This could be furthered by allowing the ability to set both short term and long-term goals for the user to strive for.

3.0 System Architecture

The application will feature several systems and subsystems within the design. Systems within the design are specified as functional screens or interfaces on an individual level, while also being interwoven through operations to navigate throughout the multiple interfaces to use the application.

On the main screen for opening the application as a user for the first time should present an account login or account sign up interface. This interface will allow a user to enter their account for the application or create one to use the application.

After the initial login or account creation, the main screen would be the home screen for the entire application. Within this interface will feature multiple operations that allow the user to navigate the system to complete certain functionalities. It will also include an overview of current spending and goals for the user within their budgeting parameters that they personally set.

3.1 Post Home Screen Interfaces

Upon using a button or operation within the home screen, the user will be redirected to a new interface that corresponds to that operation chosen.

3.1.1 Profile Button

When the user selects the profile button, a profile details screen will appear. This interface will contain their first name, last name, and college email. It will also provide an option to reset the user's password, as well as edit the college email in the event of changing colleges.

3.1.2 Expense Tracking

Upon selecting the expense tracking button, the user will be redirected to an interface that allows the user to input, categorize, and view personal expenses. It will provide options such as selecting the type of expense and the amount spent.

3.1.3 Budget Settings

When selecting the budget settings button, the user will be presented with options that allow them to set limits or goals on expenses, either as a whole or as individual categories. This screen may allow the accumulation of goals met, as well as the previously mentioned messages of congratulations or affirmation.

3.1.4 Financial Resources and Education

The application should present an interface with valuable information for the user upon selecting the financial tips and education button. This information may contain articles that address financial strategies tailored to college students. The information may also include accessibility for financial aid, if within the ability of the design.

3.1.5 Alerts and Notifications

When selecting the alerts and notifications button, the user should be redirected to a screen that will allow them to customize notifications related to the functionality of the application. For example, the ability to receive an alert when the user is approaching a source of income, or if the user is approaching their defined limit for an expense category.

4.0 Glossary

SDS (System Design Document): the document that outlines the objectives and goals of the application’s design, development, and implementation

UX (User Experience): the overall experience of a person using a product such as a website or a computer application, especially in terms of how easy or pleasing it is to use.