NYU | TANDON SCHOOL OF ENGINEERING

COMPUTER SCIENCE AND ENGINEERING

Course: CS 4523

Semester: Spring 2021

Advisor: Professor Strauss

Project Name: Happy Budget

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Project Motivation

Personal finance refers to how one manages their money, which differs from person to person. In a commerce centered world where money grants accessibility and freedom, personal finance holds a major role in defining what a person's life will be like. Failure to manage personal finance can lead to debt and the accumulation of it. As a result, you will be forced to spend more of your lifetime working to repay the accumulated debt. Additionally, retaining low savings will put one at risk of losing access to daily necessities in unexpected circumstances and delay retirement.

Although personal finance holds significant importance in a person's life, people are often uneducated and inexperienced on how to manage their personal finances. Student loans are "delaying financial security" by accumulating interest fees, "3 in 10 Americans have more credit card debt than emergency savings," and "most people in the U.S. can't even cover a $1,000 emergency with savings" (Leal). Though schools and colleges are the institutions for education, the required education in personal finances that will teach, develop, and strengthen financial literacy are often not part of their curriculum. In one study, "41% of respondents said they're self-taught, … 37% said their parents taught them about finances, … [and] 12% said they learned about personal finance from teachers" (Frazier). Without early education and experience, a person would not know what steps they need to take to begin securing financial security for themselves while also accomplishing more personal goals.

Project Proposal

We seek to develop an educational, interactive personal finance application called Happy Budget that will provide an outlet to alleviate the learning gap for personal finances. The application aims to first teach children and young adults the importance of having healthy

spending habits and help prevent them from developing financially unhealthy habits while fostering sound financial decisions through an interactive, intuitive, and enticing way. Additionally, the application must allow a connection to a personal bank account or at the very least allow for the input of personal finance information, track money usage and provide the correlating statistics, offer interactive play, facilitate the addition of personal goals with correlating financial statistics, and provide financial literacy tips.

To provide first-hand experience to users, the application should allow a connection to a personal bank account. The users will be able to see their total balance through this connection and interact with their money. The application should allow for the optional connection of a second personal bank account, specifically a savings account. In the case that a user does connect their personal savings account, the application will allow the user to see their total balance but deter the user from interacting with this money unless the user has decided it is absolutely necessary. An option to interact with the personal savings account money should be included and the application must abide by and display the rules attached to the personal savings account. For example, if the personal savings account only allows two withdrawals a month, the application must inform the user and make sure to not allow more than two withdrawals a month. Alternatively, in the case that a connection to a personal bank account is not supported, the application must allow users to input their personal finance data directly.

The application must track the user's spending to provide quantitative data and inform the user about their spending habits. To provide more insight into the user's spending, the application should provide statistical data on what the user spends their money on, such as technology, entertainment, and food. Other such data that the application could also display are comparisons between current week spendings and the past weeks spendings, graphs to see how

much money the user will save in future months, etc. The quantitative and statistical data should be presented to the user in a clear and informative format. Additionally, the application must either calculate a budget a user should abide by in a single given day in order to maintain a healthy financial status or have it be set by the user. Corresponding quantitative and statistical data must be visible to the user. The user's data can be uploaded and analyzed if the user permits it, providing trends and comparison of the user's spending to other users.

Interactive play will maintain the user's interest and allow the user to gain first-hand experience. The interactive play will be directly related to the user's money to positively reinforce saving money towards a goal. If a user has a goal, the user may put money into that goal through some interactive means, such as through a small mini game. If a user has a personal savings account connected, the user should be able to put money in through interactive play.

The addition of the ability to add personal goals will provide first-hand experience in learning to save money towards a goal. The user should be able to add one or more goals and the amount needed for that goal. The application will estimate how long it will take to achieve that goal based on how much the user expects to contribute to the goal each day, week, or month. Additionally, the application will keep track of the amount of money contributed to the goal over time and provide the user with the data and estimation of completion. The application will also allow the user to reorganize their goals based on their priorities and delete or edit already set goals.

Since education is the main goal of the application, personal financing tips should also be provided throughout the application's lifetime. These tips should appear when the user does something related to the tip. If a user is spending more than they are saving, a corresponding personal financing tip should appear. The tips can also be a notification about the promotion of a

sale in a store the user frequents, or a price comparison between stores to find the cheapest

option the user can buy. This feature should serve to improve the user's experience by making

their purchases effective and thoughtful. If deemed necessary or requested by users, the

application can also house a dictionary containing common terminology regarding economics or

banking and brief information about emerging economic technologies such as cryptocurrency

and their drawbacks.

Software Analysis/Requirements Specification (SRS)

    02/17/2021

Software Project Management Plan (SPMP)

    03/01/2021

Software Design Document (SDD)

    03/08/2021

Implementation/Demonstration (code and full documentation)

    05/05/2021

Presentation

    05/10/2021

Works Cited

Frazier, Liz. "5 Reasons Personal Finance Should Be Taught In School." Forbes, Forbes

    Magazine, 30 Aug. 2019, www.forbes.com/sites/lizfrazierpeck/2019/08/29/5-reasons-

    personal-finance-should-be-taught-in-school/.

Leal, Samantha. "I Grew Up Poor And Financially Illiterate - And I'm Still Trying To Figure Out

    How To Build Wealth." Bankrate, Bankrate, 12 Apr. 2019, www.bankrate.com/personal-

    finance/smart-money/poor-financially-illiterate-how-to-build-wealth/.