

DE LA SALLE UNIVERSITY - MANILA

SmartSaving

A Term Project

Presented to Mr. Ramon Stephen L. Ruiz

In Partial Fulfillment of the

by

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I. Introduction

SmartSaving is a program that helps others calculate savings over time and track their daily expenses by simply entering their initial deposit, monthly payment, and interest rate. It then calculates and displays the total savings after the specified number of months. Furthermore, by entering the user's expenses, the program will categorize them and look at their spending habits so that the user can know their daily expenses.

A reason why this program is important is because of the immense inflation we are experiencing in the past year. It is also relevant due to the growing market of online shopping. So helping the user manage their budget and spending habits will be very beneficial in this case. Moreover, Having financial control may lower stress and make you feel safer. Money management enables this and reduces individuals' stress to a certain extent (Managing Money and Budgeting, 2023).

The goal is to help the user manage their money. Since online commerce has been growing for the past decade, more and more people are buying online. However, without knowledge of managing money, it is very easy for one to get carried away and spend more than they need to. Therefore, by guiding the user overtime, they can learn to manage their money properly by showing them the information they need.

II. Methodology

In order to solve the problem, we plan to make a Console program that can help adolescents or individuals who have no understanding of money manage their money properly by knowing their initial deposit, monthly payment, expenses, and interest rate. This program will contain the following features:

1. Calculating the total amount of savings by entering the months, and calculating the monthly payment and interest rates
2. Add the expenses by entering the expenses that would be added and the types.
3. Displaying the graph of the savings growth over time by knowing the initial deposit, interest rates, and many more factors to know the savings of the user each month in a console program.
4. Displaying the monthly expenses report can let the users understand how many expenses they had made within a month by knowing the overall amount of expenses.
5. Let the users set their monthly maximum limit, and the program will keep tracking to know if the spending amount has exceeded the maximum limit that the user has set, If the amount has exceeded or is being exceeded, then it will give a corresponding warning.
6. Making a Piggy bank that can let the user know what their current balance is by displaying a virtual piggy bank using Java console program.

To make this program, the following java pillars might be used:

1. Encapsulations : by declaring the private variables and public methods.
2. Abstraction: by simplifying the complex system or method into an understandable system.
3. Polymorphism: It allows multiple sorts of classes to be interchanged, making the code accessible.
4. Inheritance: Inheriting the features and methods that might be used from other classes, which can reuse the codes that previously existed.

Next, we will state the milestones that this program had:

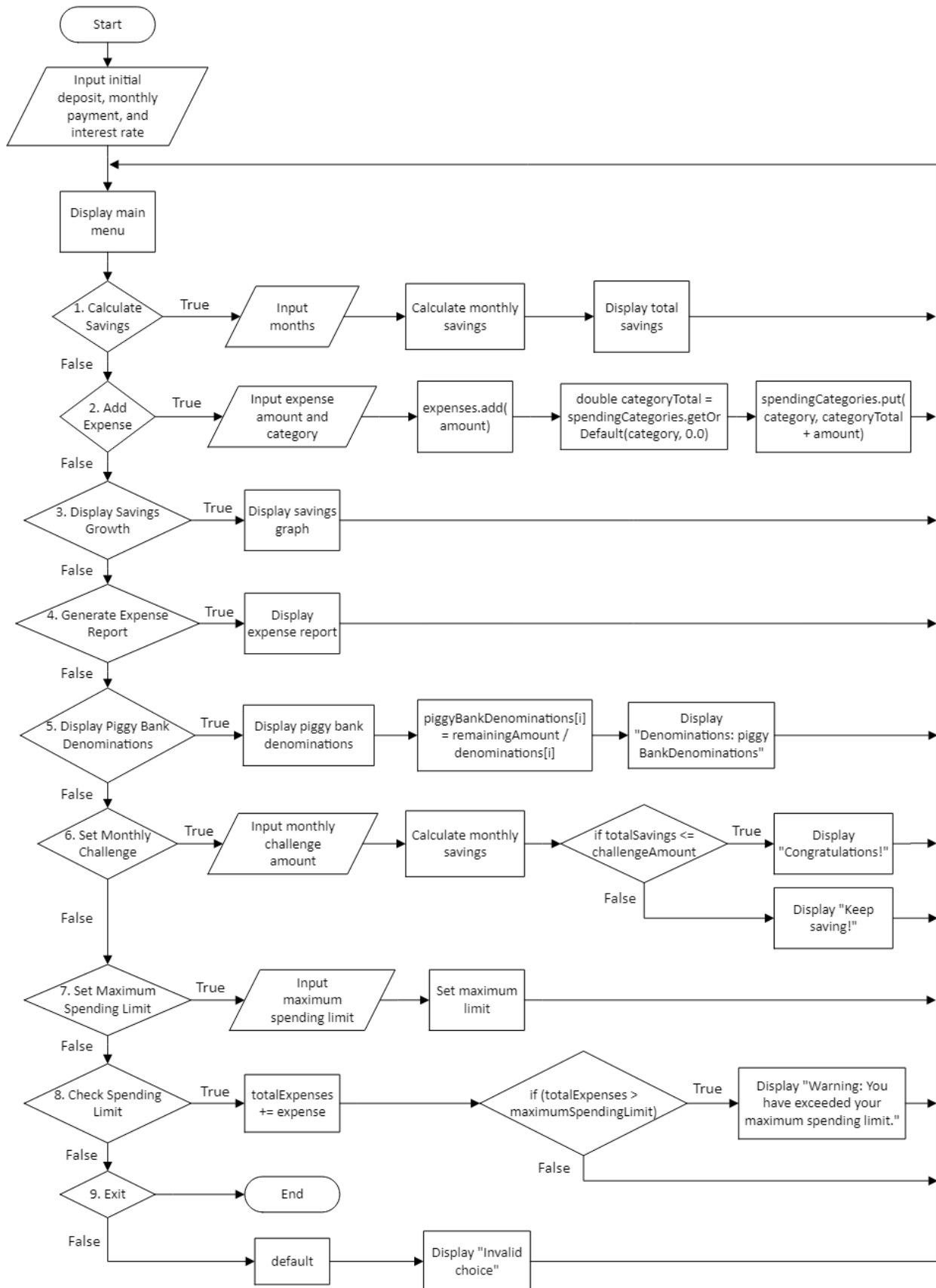
- Using the Scanner method to get the initial deposit, monthly payment, expenses, and interest rate.
- Using math imports for calculating the total savings.
- Showing the users about the features that this program had and letting the users select the features that they liked using the switch cases.
- Keeping track of the expenses that the users had made with the use of the arraylist.
- Importing the “ java.util.HashMap” which will be used for adding the expenses that the users will be adding.
- Making virtual piggy bank with the use of the for loop
- Setting the maximum amount of expenses with the use of nested loops.
- Generating a graph about one's savings over a certain period of time by importing the “ava.util.Map”

III. Project Description

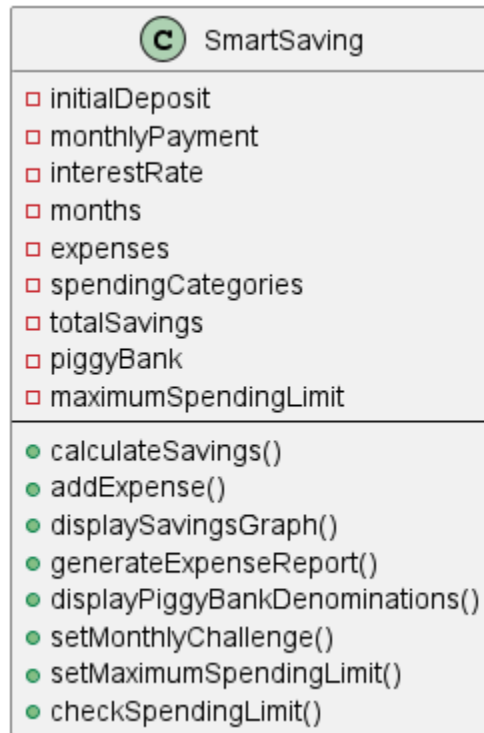
IPO TABLE:

Input	Processes	Output
initialDeposit monthlyPayment interestRate Months Expenses spendingCategories piggyBank maximumSpendingLimit	CalculateSavings() addExpense() displaySavingGraphs() generateExpenseReport() displayPiggyBankDenom inations() setMaximumSpendingLi mit() checkSpendingLimit()	totalSavings categoryTotal remainingAmount currentSavings

Flowchart:



UML Diagram:



IV. Deliverables

Deliverables	Descriptions	Date Performed	Members
Initial Proposal	Planning what kind of theme and making the corresponding solutions through it	June 19,2023	All
Project Proposal	Indicating the introduction, methodology, and project descriptions of the problem that we will like to address with	June 26, 2023	All
Program Structures	Starting to code the program with the Java source codes and the UML Diagram	July 4, 2023	All

Documentations	Finalizing the documentation, including the introduction, methodology, Project Description, and conclusion. Moreover, adding the source codes, User Manuals, and results	July 12, 2023	All
Submission of the Final Paper	Submitting the final documents	July 20, 2023	All
Demonstration	Making a demo of the Project	July 25, 2023	All
Video Recording	Recording a 10 min video which briefly discusses the project, including the demo then submitting it	July 30, 2023	All

V. Evaluation

Criteria	Description
Program Structure	Evaluating if the codes are understandable and usable. Moreover, evaluating the structures and methods used in the UML Diagram
Effectiveness	Evaluating the effectiveness of the project in solving the specific problems.
Output	Evaluating if the program is working as it should.
User Experience	Evaluating the quality of the interface and if the user understands it.

VI. Conclusion

SmartSaving will help individuals learn how to be more responsible with their money by giving them the necessary information they need regarding the money in their account. This will address the growing market of online commerce, especially during a massive inflation in the 2020s. By guiding the users through SmartSaving, they will gradually learn to spend responsibly before making any drastic financial decisions.

VII. References

Managing money and budgeting. (2023, March 16). Raising Children Network.
<https://raisingchildren.net.au/grown-ups/family-life/managing-money/managing-money>

Chan, N. (2023). Filipino Online Shopping Behavior: Statistics & Trends You Need to Know. Spiralytics.
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