

Development of Financial Calculator Android App

Archita Sehgal¹, Gaurav Amarnani², Komal Ayare³, Neha Auti⁴

¹⁻⁴ Student, Dept. of Computer Engineering, Vivekanand Education Society's Polytechnic, Mumbai India

Abstract - Financial management is one of the most important responsibilities of every business or organization. For this they may need to do a large number of calculations on a daily basis that would take a lot of time to manually do the same calculations repeatedly. Also, many financial calculations have a complex formula and manual calculation can be time consuming along with the possibility of human errors. Hiring a private financial advisor may not be always feasible. In such a scenario, an application which would make different types of calculations quick, easy and would also give graphical representation of the results, becomes a valuable asset. This app is the best for investment calculations, financial planning, retirement planning, Mutual fund Analysis, accounting etc. This financial calculator Android app will consist of 20 different types of financial calculators which will be developed with the help of Android Studio. The app will have one home activity which will consist of buttons that can be clicked to go to the type of calculator desired. We will be using MP Android charts, a GitHub Library to add bar and pie charts in 6 of the calculators.

Key Words: Finance, FinTech, Android, Financial Calculators, Financial planning, MP android charts

1. INTRODUCTION

Although specialist guidance from experts can help shape the plans for finer details, financial calculators will help make the initial start. Before starting to take advice, these calculators will offer a broad description of your current financial situation and what you need to plan for. A financial calculator executes the financial calculations that are widely required in corporate and business societies. Many of the calculations are complicated. When there is a huge amount of the same calculation to be performed, it can take a long time to calculate the same number, and a manual human calculation can appear to create inaccuracies in performance. With the aid of our calculator, with the right inputs, we can quickly get 100 percent accuracy. Plus, we'll add graphic representation charts, so that it's easy to analyse the results.

The project is a helping hand for everyone who has less knowledge about financial planning or someone who wants their calculations to be done within seconds and without error. To make the android application, we will be using Android Studio. Android Studio offers a single platform in which you can create applications for Android phones, tablets, Android Wear, Android TV, and Android Auto. Structured code modules allow you to separate the project into functional units that you can create, evaluate, and debug

separately. With the support of Android Studio, we can easily build Android apps for various Android models and screen sizes. Android Studio is the official integrated development environment for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development.[1]

2. PROPOSED SYSTEM

Calculators added in the app

- 1.) Annualized Holding Period Return Calculator - Holding period return is the repayment on an asset over the entire duration during which it was held. It is one of the means by which we can estimate the performance of an investment. Hence, the aim of annualized holding period return calculator is to obtain the commensurate rate of return per year.
- 2.) Capital Asset Pricing Model (CAPM) Estimated Return Calculator - It illustrates the correlation among systematic risk and expected return for assets, especially stocks.
- 3.) Cash Velocity Calculator - Cash velocity refers to the rapidity with which a business takes in money.
- 4.) Certificate of Deposit (CD) calculator - A CD is a savings certificate with a fixed maturity date and defined interest rate. Here we plan to add a bar chart for graphical representation.
- 5.) Compound Interest Calculator with Annual Addition - Compound interest is the interest computed on the original principal, which further comprises all of the accrued interest of prior periods of a deposit or loan. This calculator also has an annual addition option which will be added to the principal and then compounded. Here we plan to add a bar chart for graphical representation.
- 6.) Earning Per Share - EPS shows how much revenue a corporation earns for each share of its shares and is a widely used metric for the calculation of corporate value.
- 7.) EMI Calculator - Equated Monthly Installment is typically a set sum of cash that you have to continually pay your moneylender in order to compensate for the loan. You need to repay the loan value as well as the interest on the loan which differs according to the moneylender.
- 8.) Future Value Calculator - Future value is the value of an asset at a particular date which is subjected to the growth rate. Here we plan to add a bar chart for graphical representation.
- 9.) GST Calculator - GST is a single tax on the number of goods and services. Here we plan to add a pie chart for graphical representation.
- 10.) Holding Period Return - Holding period return is the repayment on an asset over the entire duration during which

it was held. It is one of the means by which we can estimate the performance of an investment.

11.) Little's Law - Little's Law is a concept that calculates the average number of items in a stationary queuing system on the basis of the average waiting time of an item within the system and the average number of items arriving at the system per unit of time.

12.) Post Tax Return - A post tax return is any gain made after subtracting the amount due for taxes on an investment. People invest thinking about the likely returns that could be generated. But we're forgetting that these returns are going to be much lower if we also take taxes into account.

13.) Present Value Calculator - Present value (PV) is the current value of a future amount of money. Here we plan to add a bar chart for graphical representation.

14.) Profitability Index Calculator - The profitability index is an index that attempts to recognize the connection between the costs and advantages of a stated project.

15.) How long will my money last? - Retirement Planning is a method through which you can create your own plan for your financial and personal life to help you meet all the needs to accommodate the post-retirement expenses of your life. Here we plan to add a bar chart for graphical representation.

16.) Return on Investment (ROI) calculator - ROI attempts to directly estimate the amount of return on a particular investment, relative to the investment initial cost.

17.) Rule of 72 - The Rule of 72 is a method for estimating an investment's doubling time.

18.) Simple Interest Calculator - Investments earned on a scheme are calculated as gains accumulated against the interest accumulated. Such gains are compiled in either compound or simple interest [2]. Here we plan to add a bar chart for graphical representation.

19.) Total Stock Return - This calculator will help you calculate your total returns on your stocks.

20.) Working Capital Calculator- Working capital is the capacity of a corporation to fund its current liabilities from its existing assets. Working capital is an essential indicator of financial stability, as creditors can measure the ability of a business to pay off its debts within a year.

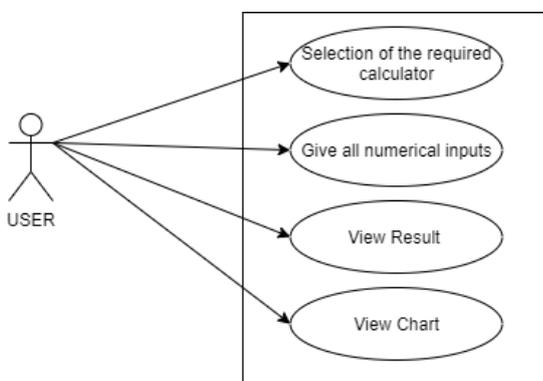


Fig - 1: Use case diagram

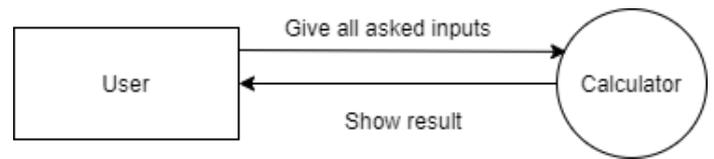


Fig - 2: Level 0 DFD

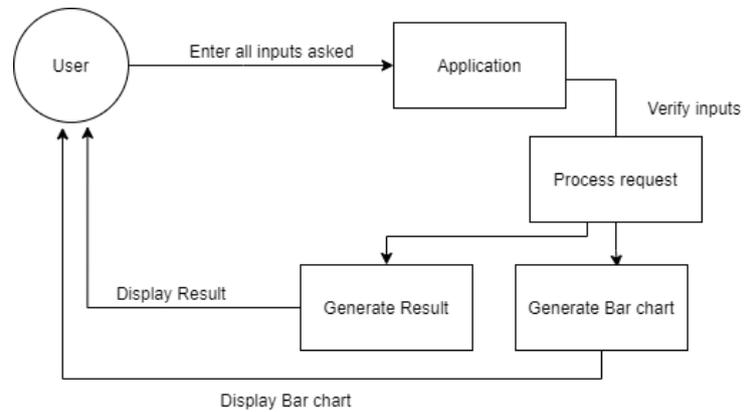


Fig - 3: Level 1 DFD

3. SYSTEM REQUIREMENTS AND SPECIFICATIONS

Here we are including the software's and hardware's used for developing the project and implementing the project

A. Software Requirements

1. Windows 8 or above
2. Java Toolkit JDK 1.8 or above
3. Android Studio 4.1 or above
4. Android Emulator 6.0 or above

B. Hardware Requirements

1. Computer having 4 GB RAM or above
2. Android Phone 6.0 or above
3. Intel i3 Processor or above

4. FUTURE SCOPE

This app will have a lot of scope in present as well as in future, as financial calculations are something that can never get outdated. Whether it be a common person or a financial advisor, everyone needs help in financial calculations and our app will serve this purpose. In the future, we can add more financial calculators in further updates which will help the user to easily calculate complex financial calculations with 100% accuracy.

5. ALGORITHM

- Step 1: Start
- Step 2: Open the app
- Step 3: Select the calculator you want
- Step 4: Give the inputs
- Step 5: Click on Calculate button

Step 6: Answer will be shown

Step 7: Exit

6. FLOWCHART

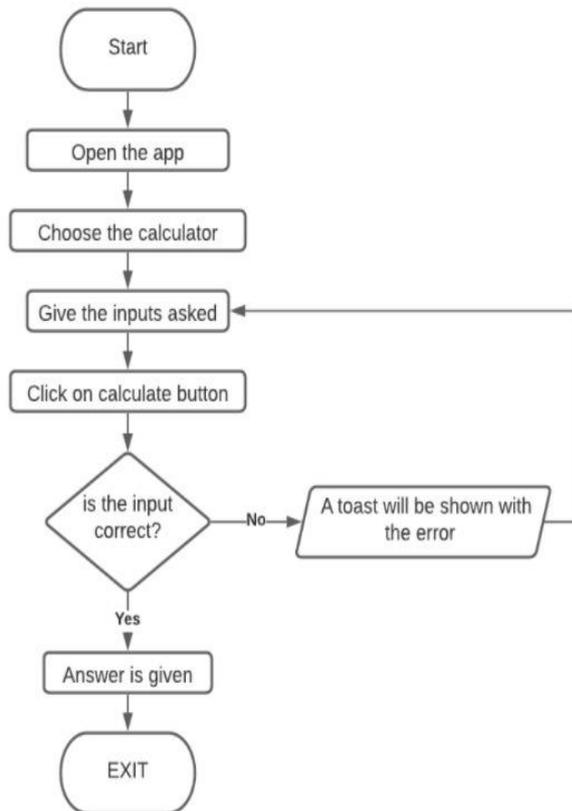


Fig - 4: Flowchart

7. CONCLUSION

This project involves the development of the Financial calculator Hub android app. The project will be a helping hand for everyone who has less knowledge about financial planning or someone who wants their calculations to be done within seconds and without error. We will make the GUI in such a way that any person can easily calculate with our calculators.

8. ACKNOWLEDGEMENT

We as part of our final year project at VESP developed and tested the software under the guidance of Professor Sanjay Wankhede. We would like to thank him for his support.

REFERENCES

- [1] https://en.wikipedia.org/wiki/Android_Studio
- [2] <https://groww.in/calculators/simple-interest-calculator/>