INTELLIGENT FINANCE ADVISOR

PROJECT SYNOPSIS

OF PROJECT-1 (IT795)

BACHELOR OF TECHNOLOGY
in
Information Technology

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BONAFIDE CERTIFICATE

Certified that this synopsis for the project titled “Intelligent Finance Advisor” is a part of the project work being carried out by “Harsh Raman, Nishkarsh Gautam, Mayank, Navnit Singh and Md. Salman Asif ” under my supervision.

Full Signature of the Candidates (with date)

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INDEX

ABSTRACT –

Investopedia.com says, “Personal finance is a term that covers managing your money and savings and investing. It encompasses budgeting, banking, insurance, mortgages, investments, retirement planning, and tax and estate planning. It often refers to the entire industry that provides financial services to individuals and households and advises them about financial and investment opportunities.”

People from every generation are worried about their financial health. Also, Artificial Intelligence is revolutionizing how we do our day to day activity. From transportation to healthcare to self-driving cars – advanced data processing, personalization, and intelligent decision making has become key to doing everyday tasks.

Lack of money is not the problem. The problem is the lack of financial discipline. People need to put efforts to cope with the lack of financial discipline, but the hardest part is to make the decision and take that next step.

Our solution – “INTELLIGENT FINANCE ADVISOR” is a personal budgeting app which suggests investments in capital markets on personal savings using AI. It is a mobile application(iOS and Android) which will take data from users for their monthly budget planning and calculate personal savings and it will suggest them appropriate investments.

MOTIVATION –

Benjamin Franklin said, "A penny saved is two pence clear." Here, he is not equating saving to earning; instead his lesson is precisely about "opportunity cost" – the basic idea that every decision comes at the cost of the next best option. Saving is income not spent, or deferred consumption and to invest is to allocate money in the expectation of some benefit in the future.

Every individual is unique and have their own financial goals. Management of money in, money out and money growth is a very fundamental decision everyone has to take. With advancement and rapidness of our society, it is very important that we keep up the pace. Personalization with the help of user data is what society is working on in this new age.

Mobile application which can budget and suggest investments is going to be very handy and useful for users of all age. It becomes tough at times to keep an account of all our spending. It is also wise to invest some of our money for financial security of uncertain future.

We already have some budgeting apps like Mint, PocketGuard, YNAB, etc. and investing apps like Robinhood, Acorns, Stash, etc. However, there is a need of an application which can keep an account of your day to day expenses, plan your recurring expense, keep an account on money you save and suggest investments to some of that money.

Our project is going to predict some possible investment opportunities through time series analysis on top gainers and top losers and then calculating population's expectation on those stocks through sentimental analysis.

LITERATURE REVIEW ─

Pros –

- **Cross-platform application made in flutter SDK.** Google's flutter SDK allows us to write one code for both iOS and Android application in "DART" language.
- **Simple and aesthetic user-interface.** A user friendly application with a simplistic approach to presentation and usability.
- **Backend written in Python.** Backend services will be written in Python which has a huge collection of open-source libraries for various purposes.
- **NoSQL database.** MongoDB database is going to be used for storing user data. NoSQL feature makes it highly scalable.
- **Artificial intelligent predictor.** Prediction of sentiments and stock prices will be based on earlier recorded datasets.
- **Deployment to container.** Our application will be deployed to container thus mobility of this software increases between servers.

Cons –

- **Not a browser based application.** This is a native application based for Android and iOS operating systems.
- **Predictions will be based on available datasets only.** User data is ever-increasing and our models will be working on only past datasets so there is a risk of unexpected outcomes on unusual scenarios.
- **Users have to organize their money only through feeding data.**

THERE IS ALWAYS A SCOPE OF IMPROVEMENT.

PROBLEM DEFINITION –

Accounting, budgeting and investing are the basic three stages of financial planning. Our solution is going to take data from users like income, expenditures and investments, and is going to suggest them investments in capital markets on which has a good reputation and is expected to grow using text data taken from twitter and time series analysis. It is a cross-platform application which user can use anytime and can get personalized assistance in no time.

It is difficult to create an accounting system for our day to day expenditures. A software which can take data from users and present results solves a lot of financial decision making problems and is very handy. Investing to get a financial security is a good practice and it is quite costly to get a financial advisor on your money. Through this application, one can get cheap investment suggestions. This saves a lot of time as you only need to open your mobile application to get advices and not physically go to a financial advisor.

Backend service is also written in Python which has a huge open source community and an ever-increasing stack of libraries for various utilities. A NoSQL database makes the software highly scalable, thus giving it a high performance. A docker container makes this application easily movable to different servers.

METHODOLOGY -

Step 1: Frontend design and software will be created in Visual Studio using Flutter Software Development Kit. Software will be tested on emulators and mobile devices. HTTPS requests and internet socket connections will be written at the frontend application side in this step.

Step 2: Backend services using DJANGO framework in python. Services can be tested through "Postman".

Step 3: Modules for all kinds of analysis will be written in this step. Pre-processing of datasets will be done and models will be made. Models will be tested and most accurate models will be selected.

Step 4: Connectivity to databases will be established in this step.

Step 5: Deployment to the cloud will be done and software will be tested.

FACILITIES REQUIRED FOR THE PROPOSED WORK -

- Visual Studio
- Flutter SDK
- Anaconda Navigator
- Python 3 environment
- Django
- Numpy
- Pandas
- Scikit-learn
- Tensorflow
- Pytorch
- Statsmodels
- Tweepy
- NLTK
- Textblob
- bsedata
- Postman
- Docker
- Heroku
- Git

REFERENCES -

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[7] https://pypi.org/project/bsedata/

[8] https://www.docker.com/