Netaji Subhas University of Technology

Sector – 3, Dwarka, Delhi – 110078

Cloud Computing Project

Cloud Computing - COCSC15

Team Members

Amogh Garg - 2020UCO1688
Arushee Verma - 2020UCO1695
Nikhil Kumar - 2020UCO1708
Shubham Sharma - 2020UCO1705

CLOUD COMPUTING PROJECT

Problem Statement

Investing is an effective way to put your money to work and potentially build wealth. Smart investing may allow your money to outpace inflation and increase in value. The greater growth potential of investing is primarily due to the power of compounding and the risk-return tradeoff.
Hence, people often require guidance and suggestions regarding investment related matters.

Our project is concerned with devising an algorithm which will assist the account holders to manage their savings mainly in the form of investments based on their past transactions and account balance history. After devising the same, we aim to deploy the model on cloud and make it readily available for usage.

Domain

The domain of our project is **Finance** which will be involving investment banking, saving and ML Models.

Making Investment Predictions

The fact that machine learning-enabled technologies give advanced market insights allows the fund managers to identify specific market changes much earlier as compared to the traditional investment models.

With renowned firms such as Bank of America, JPMorgan, and Morgan Stanley investing heavily in ML technologies to develop automated investment advisors, the disruption in the investment banking industry is quite evident.

Financial Advisory

There are various budget management apps powered by machine learning, which can offer customers the benefit of highly specialized and targeted financial advice and guidance. Machine Learning algorithms not only allow customers to track their spending on a daily basis using these apps but also help them analyze this data to identify their spending patterns, followed by identifying the areas where they can save.

Cloud Used

Amazon Web Services:
We would be using AWS Cloud services and multiple libraries it comprises, for deploying our model. The libraries are listed in the next section.

Tools used

- EC2 - Amazon Elastic Compute Cloud (Amazon EC2) is a web-based service that allows businesses to run application programs in the AWS Public Cloud. Amazon EC2 allows a developer to spin up virtual machines, which provide compute capacity for IT projects and cloud workloads that run with global AWS data centers. In our project EC2 will be used to provide a server in order to run the ML model.
- AWS ML / Sagemaker - AWS Sagemaker is a fully managed machine learning service which will be used to preprocess the dataset and train the machine learning model on the dataset.
- DynamoDB / RDBMS - One of these database services will be used to store the dataset and perform various functions on the dataset.
- Simple Storage Service - This service will be used to store various files in the form of buckets.[S3]
- AWS FinSpace- Amazon FinSpace is a data management and analytics service purpose-built for the financial services industry (FSI). FinSpace reduces the time you spend finding and preparing petabytes of financial data to be ready for analysis from months to minutes.

Data Sets

https://www.kaggle.com/datasets/apoorvwatsky/bank-transaction-data
https://eforexcel.com/wp/downloads-20-sample-csv-files-data-sets-for-testing-till-2-million-records-bank-transactions/

Project Implementation and Timeline

Week No.	Dates	Deliverables
1	2 September 2022 - 8 September 2022	Finding datasets and preprocessing the relevant datasets(s).
2	9 September 2022 - 16 September 2022	Exploring AWS features.
3	17 September 2022 - 23 September 2022	Devising an algorithm for ML model.
4	24 September 2022 - 30 September 2022	Working more on the ML model.
5	1 October 2022 - 7 October 2022	Testing the model and deploying services.

6	8 October 2022 - 14 October 2022	Final modifications.

References

https://www.irjmets.com/uploadedfiles/paper/volume2/issue_4_april_2020/750/1628083000.pdf
https://www.kaggle.com/datasets/apoorvwatsky/bank-transaction-data
http://data.gov.in/
https://marutitech.com/ai-and-ml-in-finance/
http://rbi.gov.in/
https://eforexcel.com/wp/downloads-20-sample-csv-files-data-sets-for-testing-till-2-million-records-bank-transactions/
