Personal Expense Tracker Application

Literature Survey

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DOMAIN : Cloud App Development

PROJECT TITLE : Personal Expense Tracker Application

Problem Statement:

At the instant, there is no as such complete solution present easily or we should say free of cost which enables a person to keep a track of its daily expenditure easily. To do so a person has to keep a log in a diary or in a computer, also all the calculations needs to be done by the user which may sometimes results in errors leading to losses. Due to lack of a complete tracking system, there is a constant overload to rely on the daily entry of the expenditure and total estimation till the end of the month. A personal finance app will not only help you with budgeting and accounting but also give you helpful insights about money management.

Personal finance applications will ask users to add their expenses and based on their expenses, wallet balance will be updated which will be visible to the user. Also, users can get an analysis of their expenditure in graphical forms. They have an option to set a limit for the amount to be used for that particular month if the limit isexceeded the user will be notified with an email alert.

Literature Survey:

Some research and journals have been reviewed throughout this project to make out a distinct image of it. These journals in short, works as a guide for this project to implement Least Square Method. Based on article [4], it discusses about regression models. Basically, it holds a concept where we forecast the time series of interest at y-axis assuming that it has a linear relationship with other time series at x-axis. The author [4] also stated that, the least squares principle provides a way of determining the coefficients effectively by minimizing the sum of the squared errors. A study carried out by author [9], it introduces tools and methods for both finance and accounting that help with asset pricing, corporate finance, options and futures, and conducting financial accounting research. How least square method works and implied in financial forecasting is discussed. The author [2] applied several of statistical time series models to observe forecast errors in the demand of juice production are within the expected limit and to choose a forecasting technique which has a less relative error. The author [2] proved that Least Square Method is more accurate than the others. Article [3] also did the study in order to forecast milk production in India using statistical time series modelingDouble Exponential Smoothing and Auto-regressive Integrated Moving Average and concluded that Auto Regressive Integrated Moving Average performed better. 8 In a paper studied by [7] explains that Batch-mode Least Squares SVM (LSSVM) is often associated with unbounded number of support vectors (SVs). This, makes it unsuitable for applications if it involves large-scale streaming data. In this paper [7], it explains how to train the limited-scale LSSVM dynamically. By applying a budget online LSSVM (BOLSSVM) algorithm, methodologically, by setting a fixed budget for SVs, LSSVM model is updated according to the current SVs set dynamically without re-training from scratch. This way, the proposed BOLSSVM algorithm is especially useful for online prediction tasks. Thus, batch-mode learning methods were compared, the computational complexity of the proposed BOLSSVM method is significantly reduced. The validity and effectiveness of the proposed BOLSSVM algorithm is

shown by the experimental results of classification and regression on benchmark data-sets and real-world applications. The paper [10] aims to describe a computerized system that is able to predict the budget for the new year based on past budgets by using time series analysis. It will then show results with most minimum errors and controls the budget during the year. Through the ability to control exchange, compared to the scheme with the investigator and calculating the deviation, measurement of performance ratio and the growth of a number of indicators relating to budgets, it is possible to achieve the objective. For example, this article [10] uses the rate of condensation of capital, the growth rate and profitability ratio and gives a clear indication whether these ratios are good or not. 9 2.3 Related Software One of the most common existing software that is related to this project is MINT. Mint was formally introduced in September 2007. it is a server-based web, but this software also can be used using PC or smart-phone. Based on a research from author [1], MINT is aware of users' daily expense and if they have a future goal of buying something, user can reduce your current spending according to it. Most importantly, it keeps a track on users' credit bills, home bills and savings. This budgeting software also will notify users whenever user are due to pay a bill or payment. This will lower the chance for users to forget to make payment. Despite having some great advantages, MINT also comes with a plenty of drawbacks such as there no guarantee of the security in this online software. The chances of getting their account hacked is worrisome as this software stores users' financial account. The rivalry from other potential software also becomes one of the big factor. Website has too many ads while browsing through finances

Our Proposed Solution:

We plan to build an interactive UI and deploy it on cluster provided by the IBM cloud. The app image will be made using Docker. This working node will be stored as image on the container registry. To store the information of the users weplan to make use of IBM DB2.

The expense tracking app will be running on web and can be accessed

anywhere, the users are expected to enter their day today expenses and the application will store this information in the database and do the calculation on the same. If the expense crosses some threshold limit set by the user, the application will send an alert mail to the user. This can be implemented with help of Send Grid services.

References:

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