

Cloud Cost Analysis and Prediction Tool:

Scenario

Cloud computing has emerged as one of the critical technologies for managing contemporary business infrastructure, while its capacity for scaling, versatility, and increasing efficiency cannot be overestimated. However, this has more often than not been coupled with the advantage of having to find, manage and control costs, which tend to get out of hand were they not keenly monitored. Companies struggle with issues of assessing their expenses’ patterns, prognosis of future costs, and search for potential savings. Against this background, if these challenges are not addressed, they result in inefficient resource usage resulting in cost overruns hence making cost management an important factor in cloud infrastructure.

Cloud Cost Analysis and Prediction Tool on the other hand, seeks to enhance the chances of conquering these hurdles since it supplies the user with a framework of historical cloud costs and in addition provides projections and recommendations. It aims to mimic a typical CM solution which processes synthetic cost data for analysis, visualization and get a knack on strategic recommendations.

Purpose

* Data Manipulation: The tool takes cost data and performs analysis on it to generate useful information.
* Visualization: It employs graphs to display trends in data so that the users can make the right decisions.
* Predictive Analysis: It forecasts future expenditures from past experiences.
* Cost Optimization: The tool suggests possible optimization measures depending on the expenditure trends.

Libraries used

datetime: For performing date related operations which includes to get the historical and future time stamp.

matplotlib: If there is a need to display historical cost data with additional predictions on cost in a line graph manner, which makes the trends obvious.

Features of the Tool

1. Mock Data Generation: Fakes the cost data of the previous six months with gradual additions for illustration of the ingredients.
2. Cost Prediction: In order to predict the cost for the next month, the trends in the analysis of the mock data are analysed and a simple arithmetic progression model is used.
3. Graphical Representation: Contributes to creating a good visualization of the cost that has occurred in history and the cost that may be expected in the future using Matplotlib.
4. Optimization Suggestions: It provides recommendations based on average cost. If the average goes past this point, its recommendations possibilities such as using reserved instances or rightsizing the resources.