**DMPA LAB: Project Synopsis**

**IT Finbot: Mining and analysing the performance of a single IT company with respect to the industry.**

**Objective:**

The objective of the IT Finbot is to find the current trends in the IT industry and then use them as a basis to understand the performance of any single company. The application also reads the initial pattern in order to predict the future performance of the afore mentioned company in its primary industry. This enables the user to garner both an overall review of the industry while assessing the growth of a company with a dynamic comparative.

**Language Used:**

1. Python
2. (Possible use of R for computation)

**Libraries Used:**

1. Quandl
2. BeautifulSoup4
3. Requests
4. Numpy
5. ScikitLearn
6. Pandas
7. Selenium
8. Matplotlib

**Methodology:**

**Data Gathering:**

1. The datasets for all the reference companies are imported from Quandl, after which the averages for viable attributes are computed.
2. The user is the asked to provide the name of a company that he/she desires to use for the comparison.
3. Using the Requests and the BeautifulSoup4 libraries, the ticker (UID) for the user company is scrapped and extracted.

**Similarity Comparison:**

1. A static comparison between the averages previously computed and the values extracted for the user company is displayed for a primitive comparison.
2. Using the Numpy, ScikitLearn and Pandas libraries, extrapolation is carried out on both the datasets which returns the growth pattern of both the industry and the company.

**Data Representation:**

1. The patterns are then plotted using the Matplotlib library to allow the user a graphical representation of both the datasets.
2. A further prompt allows the user to visit the webpage of the requested site in case of any further queries. The Selenium library is used to accomplish this task.

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