ECS639U – Web Programming

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**Coursework 2 – Stock Index REST API**

1. **Introduction**

A stock index is a common tool used by investors and financial managers to describe a market or to compare the return on specific investments. It is a measurement of the value of a section of the stock market and it is computed from the prices of selected stocks. As it is a mathematical construct it may not be invested in directly, however, many funds attempt to track an index.

There are two types of index relating the way stocks are selected. A price-weighted index considers just the value of each component stock to determine the index value. In contrast, a capitalization-index uses the size of the companies.

Hence, the goal with the REST API is to provide a tool capable of retrieving many important parameters of stock indexes. Nowadays, financial analysis occurs with the support of computer systems, so an API would be very useful.

1. **Design**
   1. **Semantic Descriptors**  **2.2** **State Diagram**

Stock Indexes List

Stock Indexes List

Stock Index

Name

Value

Previous Close Value

Change (%)

Volume

Item

(safe)

Country

Stock Index

Country

List of Constituents

Collection

(safe)

Constituent/Company

Name

Code

Sector

Year of IPO

Value

Previous Close Value

Change (%)

Volume

List of Constituents

Item

(safe)

Constituent/Company

* 1. **Design Description**

2.2.1. Semantic Descriptors

The semantic descriptors were defined based on the most common and analysed parameters involving stock indexes. *Name, Value, Previous Close Value, Change (%) and Volume* are used for both stock indexes and companies because they are the basic indicators. *Country* is applied only for stock indexes to enable a further search and filter for all stock indexes of the same country. Moreover, three extra descriptors are applied to companies: *Code, Sector* and *Year of IPO*. The first one express the code of the stocks representing the company, while the second express the business sector and the third the year that the company launched its stocks in the market (IPO stands for Initial Public Offering).