**DATA DICTIONARY**

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**For Zero & 1st Level: -** \*Data Structures are Defined at the end.

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| **DATA FLOW NAME:** | Name of the stock |
| **DESCRIPTION:** | Name of the stock user want a prediction against/wants to enquire about. |
| **FROM PROCESSES:** |  |
| **TO PROCESSES:** | Level 1.0  User Request Processing |
| **DATA STRUCTURES:** | NOS |

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| **DATA FLOW NAME:** | Response to Additional features |
| **DESCRIPTION:** | Response of the user to the additional options provided by the system to add intuition or not to the prediction. |
| **FROM PROCESSES:** |  |
| **TO PROCESSES:** | Level 1.0  User Request Processing |
| **DATA STRUCTURES:** | ADDITIONAL FEATURES DETAILS |

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| **DATA FLOW NAME:** | Opt to choose Additional features |
| **DESCRIPTION:** | System provides the user with the option to include intuition into the prediction or not and if so then what. |
| **FROM PROCESSES:** | Level 1.0  User Request Processing |
| **TO PROCESSES:** |  |
| **DATA STRUCTURES:** | ADDITIONAL FEATURES DETAILS |

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| **DATA FLOW NAME:** | Feedback to prediction and accuracy |
| **DESCRIPTION:** | System presents the user to with the accuracy and prediction generated for the name of the stock enter |
| **FROM PROCESSES:** | Level 1.0  User Request Processing |
| **TO PROCESSES:** |  |
| **DATA STRUCTURES:** | PREDICTION AND ACCURACY |

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| **DATA FLOW NAME:** | Name of the stock, Response to name of stock |
| **DESCRIPTION:** | Response to Name of the stock provided to 2.0 after checking in our database (if it’s available for the system in its database or not).  Name of the stock provided so if isn’t present then it generated the data needed from yahoo’s database. |
| **FROM PROCESSES:** | Level 1.0  User Request Processing |
| **TO PROCESSES:** | Level 2.0  Database Processing |
| **DATA STRUCTURES:** | NOS  ADDITIONAL FEATURES DETAILS |

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| **DATA FLOW NAME:** | Feedback to prediction and accuracy |
| **DESCRIPTION:** | The final prediction and accuracy generated by the system based on the name of stock and processing intuition into it if that was chosen at the start. |
| **FROM PROCESSES:** | Level 5.0  Prediction, Accuracy and Graph Processing |
| **TO PROCESSES:** | Level 1.0  User Request Processing |
| **DATA STRUCTURES:** | PREDICTION AND ACCURACY |

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| **DATA FLOW NAME:** | Response to additional features |
| **DESCRIPTION:** | User’s response to the additional options provided by the system to include intuition and to what extent. |
| **FROM PROCESSES:** | Level 1.0  User Request Processing |
| **TO PROCESSES:** | Level 3.0  Additional Feature Processing |
| **DATA STRUCTURES:** | ADDITIONAL FEATURES DETAILS |

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| **DATA FLOW NAME:** | Additional features |
| **DESCRIPTION:** | Optional additional features to include intuition into the picture such as,  If it will go up or down, choosing high and low for the intuition. |
| **FROM PROCESSES:** | Level 3.0  Additional Feature Processing |
| **TO PROCESSES:** | Level 1.0  User Request Processing |
| **DATA STRUCTURES:** | ADDITIONAL FEATURES DETAILS |

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| **DATA FLOW NAME:** | Response to name of stock |
| **DESCRIPTION:** | Database ‘User requested stocks’ response to the enquiry made by level 1.0 to check if a stock by that name exist in the system’s database. |
| **FROM PROCESSES:** |  |
| **TO PROCESSES:** | Level 1.0  User Request Processing |
| **DATA STRUCTURES:** | RNOS |

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| **DATA FLOW NAME:** | Name of the Stock |
| **DESCRIPTION:** | System checks in a stock by the name entered by the user in the database User Requested stocks db exist in the system/If it has been used before. |
| **FROM PROCESSES:** | Level 1.0  User Request Processing |
| **TO PROCESSES:** |  |
| **DATA STRUCTURES:** | NOS |

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| **DATA FLOW NAME:** | New/Updated Data |
| **DESCRIPTION:** | Provides the system with the new data if that stock was never used before by the system, if it was then it will provide the updated data from Yahoo’s Database. |
| **FROM PROCESSES:** |  |
| **TO PROCESSES:** | Level 2.0  Database Processing |
| **DATA STRUCTURES:** | STOCK TABLE |

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| **DATA FLOW NAME:** | Name of the Stock |
| **DESCRIPTION:** | Level 2.0(Database Processing) provides the Yahoo’s database with the name of the stock it wants the data for further processing |
| **FROM PROCESSES:** | Level 2.0  Database Processing |
| **TO PROCESSES:** |  |
| **DATA STRUCTURES:** | NOS |

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| **DATA FLOW NAME:** | Name of the Stock |
| **DESCRIPTION:** | Level 2.0(Database Processing) updates the database of the ‘Visited stock’ if it is ever required in the future. |
| **FROM PROCESSES:** | Level 2.0  Database Processing |
| **TO PROCESSES:** |  |
| **DATA STRUCTURES:** | NOS |

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| **DATA FLOW NAME:** | Name of stock, New/Updated Data |
| **DESCRIPTION:** | Level 2.0(Database Processing) provide the Name and the Data of that stock(dataset) to the Database Entity (pseudo entity in this case) for further computations upon that dataset. |
| **FROM PROCESSES:** | Level 2.0  Database Processing |
| **TO PROCESSES:** |  |
| **DATA STRUCTURES:** | NOS  STOCK TABLE |

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| **DATA FLOW NAME:** | Response to Additional Features |
| **DESCRIPTION:** | Level 3.0 forwards the information about the Response to additional features option offered to the user to include intuition into the prediction to finally use at level 4.0. |
| **FROM PROCESSES:** | Level 3.0  Additional Feature Processing |
| **TO PROCESSES:** | Level 4.0  Database Distribution Processing |
| **DATA STRUCTURES:** | ADDITIONAL FEATURES DETAILS |

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| **DATA FLOW NAME:** | Dataset |
| **DESCRIPTION:** | This the whole data about the particular stock entered by the user directed to level 4.0(Database Distribution Processing) to distribute that database into train and test and inculcate the additional features into the dataset. |
| **FROM PROCESSES:** |  |
| **TO PROCESSES:** | Level 4.0  Database Distribution Processing |
| **DATA STRUCTURES:** | STOCK TABLE |

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| **DATA FLOW NAME:** | Test and Train Data |
| **DESCRIPTION:** | This is the final Test and Train data divisions with the intuition additional features processed into it by the predefined algorithm of the system. |
| **FROM PROCESSES:** | Level 4.0  Database Distribution Processing |
| **TO PROCESSES:** | Level 5.0  Prediction, Accuracy and Graph Processing |
| **DATA STRUCTURES:** | STOCK TABLE  STOCK TABLE |

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| **DATA FLOW NAME:** | Fetching Train dataset |
| **DESCRIPTION:** | The Final Train dataset (from the Train db) after making the split into the original dataset and including the new data points introduced by applying the additional features onto the original dataset. Used to Train the algorithm about the stock’s movement. |
| **FROM PROCESSES:** |  |
| **TO PROCESSES:** | Level 4.0  Database Distribution Processing |
| **DATA STRUCTURES:** | STOCK TABLE |

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| **DATA FLOW NAME:** | Fetching Test Dataset |
| **DESCRIPTION:** | The Final Test dataset supplied to level 4.0 to Test against the trained algorithm, to see if works properly or not. |
| **FROM PROCESSES:** |  |
| **TO PROCESSES:** | Level 4.0  Database Distribution Processing |
| **DATA STRUCTURES:** | STOCK TABLE |

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| **DATA FLOW NAME:** | Test dataset |
| **DESCRIPTION:** | This is the spliced Test dataset from the original dataset which will later be used to test the algorithm working potential. |
| **FROM PROCESSES:** | Level 4.0  Database Distribution Processing |
| **TO PROCESSES:** |  |
| **DATA STRUCTURES:** | STOCK TABLE |

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| **DATA FLOW NAME:** | Train dataset |
| **DESCRIPTION:** | This is the spliced Train dataset from the original dataset which will later be mixed with the additional features applied dataset to improve the training and predictive capacity of the algorithm. |
| **FROM PROCESSES:** | Level 4.0  Database Distribution Processing |
| **TO PROCESSES:** |  |
| **DATA STRUCTURES:** | STOCK TABLE |

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| **DATA FLOW NAME:** | Additional Features Applied |
| **DESCRIPTION:** | It is the newly generated data points collection after applying the information supplied by the user in the Response to additional features option and will be added to Train dataset to train the algorithm finally in the Train db. |
| **FROM PROCESSES:** | Level 4.0  Database Distribution Processing |
| **TO PROCESSES:** |  |
| **DATA STRUCTURES:** | STOCK TABLE |

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| **DATA FLOW NAME:** | Graph |
| **DESCRIPTION:** | The Final predicted graph for the stock mentioned by the user by applying intuition (if addition options was chosen). |
| **FROM PROCESSES:** | Level 5.0  Prediction, Accuracy and Graph Processing |
| **TO PROCESSES:** |  |
| **DATA STRUCTURES:** | N/A (Not Applicable) |

**For Level 1.1 Detailed: -**

\*here NOS stands for Name of Stock

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| **DATA FLOW NAME:** | NOS |
| **DESCRIPTION:** | Name of the Stock user wants the prediction against. |
| **FROM PROCESSES:** |  |
| **TO PROCESSES:** | Level 1.1  User Request |
| **DATA STRUCTURES:** | NOS |
| **DATA FLOW NAME:** | NOS |
| **DESCRIPTION:** | Name of the Stock Checked in the User Requested Stocks db to check if it has been used before or not (so we can use it if it was used). |
| **FROM PROCESSES:** | Level 1.1  User Request |
| **TO PROCESSES:** |  |
| **DATA STRUCTURES:** | NOS |

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| **DATA FLOW NAME:** | Response to NOS |
| **DESCRIPTION:** | Database User Requested Stocks db sends a response to the enquiry made by level 1.1 |
| **FROM PROCESSES:** |  |
| **TO PROCESSES:** | Level 1.1  User Request |
| **DATA STRUCTURES:** | RNOS |

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| **DATA FLOW NAME:** | NOS |
| **DESCRIPTION:** | Name of the stock is forwarded to level 1.2 so it can be used further by the system. |
| **FROM PROCESSES:** | Level 1.1  User Request |
| **TO PROCESSES:** | Level 1.2  Additional Features |
| **DATA STRUCTURES:** | NOS |

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| **DATA FLOW NAME:** | NOS, Response to NOS |
| **DESCRIPTION:** | Response to Name of the stock provided to 2.0 after checking in our database (if it’s available for the system in its database or not).  Name of the stock provided so if isn’t present then it generated the data needed from yahoo’s database. |
| **FROM PROCESSES:** | Level 1.1  User Request |
| **TO PROCESSES:** | Level 2.0  Database Processing |
| **DATA STRUCTURES:** | NOS  RNOS |

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| **DATA FLOW NAME:** | Additional Features |
| **DESCRIPTION:** | Level 3.0 supplies these Additional features for the user to take upon and include intuition into the prediction or not and if yes then to what extent. |
| **FROM PROCESSES:** | Level 3.0  Additional Features Processing |
| **TO PROCESSES:** | Level 1.2  Additional Features |
| **DATA STRUCTURES:** | ADDITIONAL FEATURES DETAILS |

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| **DATA FLOW NAME:** | Response to additional Features |
| **DESCRIPTION:** | Response of the user to the additional options provided by the system to add intuition or not to the prediction |
| **FROM PROCESSES:** | Level 1.2  Additional Features |
| **TO PROCESSES:** | Level 3.0  Additional Features Processing |
| **DATA STRUCTURES:** | ADDITIONAL FEATURES DETAILS |

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| **DATA FLOW NAME:** | NOS |
| **DESCRIPTION:** | Name of the stock is forwarded to level 1.2 so it can be used further by the system. |
| **FROM PROCESSES:** | Level 1.2  Additional Features |
| **TO PROCESSES:** | Level 1.3  Prediction and Accuracy Processing |
| **DATA STRUCTURES:** | NOS |

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| **DATA FLOW NAME:** | Opt to choose Additional Features |
| **DESCRIPTION:** | System provides the user with the option to include intuition into the prediction or not and if so then what. |
| **FROM PROCESSES:** | Level 1.2  Additional Features |
| **TO PROCESSES:** |  |
| **DATA STRUCTURES:** | ADDITIONAL FEATURES DETAILS |

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| **DATA FLOW NAME:** | Response to additional Features |
| **DESCRIPTION:** | Response of the user to the additional options provided by the system to add intuition or not to the prediction. |
| **FROM PROCESSES:** |  |
| **TO PROCESSES:** | Level 1.2  Additional Features |
| **DATA STRUCTURES:** | ADDITIONAL FEATURES DETAILS |

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| **DATA FLOW NAME:** | Feedback to Prediction and Accuracy |
| **DESCRIPTION:** | System presents the user to with the accuracy and prediction generated for the name of the stock enter |
| **FROM PROCESSES:** | Level 1.3  Prediction and Accuracy Processing |
| **TO PROCESSES:** |  |
| **DATA STRUCTURES:** | PREDICTION AND ACCURACY |

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| **DATA FLOW NAME:** | Feedback to prediction and accuracy |
| **DESCRIPTION:** | The final prediction and accuracy generated by the system based on the name of stock and processing intuition into it if that was chosen at the start. |
| **FROM PROCESSES:** | Level 5.0  Prediction, Accuracy and Graph Processing |
| **TO PROCESSES:** | Level 1.3  Prediction and Accuracy Processing |
| **DATA STRUCTURES:** | PREDICTION AND ACCURACY |

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| **DATA FLOW NAME:** | NOS, Accuracy and Prediction |
| **DESCRIPTION:** | This stores the Final prediction and Accuracy and name of the Stock entered by the user in the Accuracy and Prediction db(database) |
| **FROM PROCESSES:** | Level 1.3  Prediction and Accuracy Processing |
| **TO PROCESSES:** |  |
| **DATA STRUCTURES:** | NOS  PREDICTION AND ACCURACY |

**DATA STRUCTURES: -**

NOS

{Data type: Text, Field Size for display: 20}

RNOS (Y/N)

{Data type: Text, Field Size for display: 1}

ADDITIONAL FEATURES DETAILS

* OPT TO INCLUDE INTUITION(Y/N)

{Data type: Text, Field Size for display: 1}

* DIRECTION(Up/Down)

{Data type: Text, Field Size for display: 4}

* HIGH

{Data type: Decimal, Field Size for display: 10}

* LOW

{Data type: Decimal, Field Size for display: 10}

PREDICTION AND ACCURACY

* STOCK TABLE
* ACCURACY

{Data type: Decimal, Field Size for display: 5}

STOCK TABLE

* DATE (DD/MM/YYYY)

{Data type: Date/Time, Field Size for display: 10}

* OPEN

{Data type: Decimal, Field Size for display: 10}

* HIGH

{Data type: Decimal, Field Size for display: 10}

* LOW

{Data type: Decimal, Field Size for display: 10}

* CLOSE

{Data type: Decimal, Field Size for display: 10}

* ADJ CLOSE

{Data type: Decimal, Field Size for display: 10}

* VOLUME

{Data type: Integer, Field Size for display: 15}