Document Information

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**Document History Control Log**

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| --- | --- | --- | --- | --- |
| Version | Date | Status\* | Author | Description of Change |
| 0.01 | 01/17/20 | N | Nicholas Loffer | Baseline Working Draft |
| 0.01 | 02/25/20 | U | Nicholas Tidwell | First Iteration |
| .002 | 3/26/20 | U | Nicholas Loffer | 2nd Milestone |
|  |  |  |  |  |
| \* New, Revision, Update, or Cancelled | | | |  |

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# Purpose

Our group will be developing a python application that will capture and analyze stock data from 3rd party sources and report their findings to the user.

The purpose of this document is to define the projects:

* Requirements
* Design
* Division of Labor
* Python Library Tracking

# Requirements

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| --- | --- |
| Section | Requirements |
| 1. Data Acquisition | * Must scrape data from internet sources. * Must be able to format data in multiple file forms. * Must have a GUI to configure acquisition. |
| 1. Data Storage | * Must store large amounts of data. * Must be able to interact with multiple app components. |
| 1. Data Processing and Analysis | * Must provide predictive analytics. * Must provide descriptive analytics. * May provide prescriptive analytics. |
| 1. Data Reporting and Presentation. | * Must provide a GUI for reporting. * Must provide push notifications to email or text. * Must provide data visualization. |

# Design & Components

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| --- | --- |
| Section | Solution Design |
| 1. Data Acquisition | * Backend program using appropriate Python libraries to scrape data. * Dashboard to configure backend script. |
| 2. Data Storage | * Cloud, local server, or other database solution to be configured. * Appropriate python code, libraries, and API’s to interact with the DB and the stock application. |
| 3. Data Processing and Analysis | * Will use of appropriate python libraries to build data analysis modules. * Use of appropriate python libraries to build parallel processing modules. |
| 4. Data Reporting | * Will use of either HTML or GUI dashboard with appropriate Python libraries. * Will use appropriate Python libraries to build push notifications to email or text. * Will use appropriate Python libraries for data visualization. I.E. charts & graphs. |

# Division of Labor

|  | |
| --- | --- |
| Section | Solution Design |
| 1. Data Acquisition | * . Nicholas Tidwell |
| 2. Data Storage | * Nicholas Loffer – Database Lead   + Darren Kopacz – Database Assist |
| 3. Data Processing and Analysis | * Nicholas Loffer – Push Notification Lead * Oscar Kosar-Kosarewicz – Stock prediction and data analytics * Ben Roth – Add functionality to current stock prediction libraries currently in python like Stocker |
| 4. Data Reporting | * Darren Kopacz - UI |

# Python Library Tracking

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| --- | --- | --- |
| **Library Name** | **Library Functionality** | **Library Link** |
| PyQt5 | GUI | <https://sourceforge.net/projects/pyqt/files/PyQt5/> |
| Sqlite3/SQLAlchemy | Storing/managing data in a DB. |  |
| Numpy | Data Manipulation | <https://numpy.org/> |
| Pandas | Data Manipulation | <https://pandas.pydata.org/> |
| Sklearn | Machine learning | <https://scikit-learn.org/stable/> |
| Smtplib | Email Notifications/ | Python.org/3/library/smtplib.html |
| Pymysql | Database interaction | https://pymysql.readthedocs.io/en/latest/# |

# Team Members

| Team Info | | |  |
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## GITHUB Repository

git@github.com:NickTiddy52/StockMarket\_GroupProject.git

https://github.com/NickTiddy52/StockMarket\_GroupProject.git