

Proposal

Ammar Jivraj, Daniel Portuondo, Alexandra Syunkova

Advisor: Dr. Vanessa Aguiar

Submitted in partial fulfillment

Of the requirements of CSC-431

Software Engineering course project

February 11, 2021

Preface

This is a proposal for the SAPP project for partial fulfillment of the requirements of a Software Engineering course (CSC431) project in the department of Computer Science at the University of Miami.

This proposal provides the scope and context of the project to be undertaken. It details the intended user group and the value that the system will have to them.

The intended audience of this document is the course professor and teaching assistants so that they can determine whether the project should be approved as proposed, approved with modifications, or not approved.

1. Overview

1.1. Purpose, Scope and Objectives

The proposed application is a sentiment analysis program to provide its users insight on trending and related “investments” (stocks, cryptos, precious metals) by gathering and analyzing user generated avenues of content on social media. This program will provide a clean and easy to use UI to offer insight to an investor of any level.

As an easy-access application, SAPP will not only assist and advance trading among beginners and experienced traders, but also provide useful insights to trading companies and applications. It will serve as a desktop and mobile, online web application providing a comprehensive collection of data in the form of dashboards, graphs, and other visual cues. The software will allow the user to gain insights into the public sentiments on individual stock securities and cryptocurrencies as well as conglomerated data in the form of sectors, precious metals, and countries among others. The foundations of this data will be extracted through

public interactions and posts made through major social media sites, such as Facebook, Twitter, and Reddit, via web scrapers. Machine learning principles will be applied to the gathered information to identify the sentiment behind it, which, when aggregated together, will provide a general consensus on the subject at hand.

Stable internet connection will be required to use the application, and a compatible browser such as Google Chrome, Safari, Mozilla Firefox, or Microsoft EDGE will be required to access it. The software will be offered across all major computer operating systems: Windows, MacOS, and Linux, as well as mobile platforms: iOS, iPadOS, and Android.

1.2 Project Description

The SAPP homepage will, by default, depict data on investments which are trending, relevant, volatile, and most likely to be influenced by social media. Users will be able to search for and select potential investments of interest to follow, which will consequently provide a catered dashboard on the web application's home page.

Any particular page on a given investment will provide a sentiment value alongside a brief metric of how the investment will perform, whether its prediction of rising or falling is claimed with "High," "Moderate," or "Low" confidence. Interactive pie charts will be included depicting the distribution of mentions across sites. Each site will carry different weight in the final prediction depending on its historical impact on the given investment. Navigation to related information will be seamless. Users will be able to drill down on any particular social media segment of the pie chart to view more in-depth data such as sentiment distribution as well as a collection of posts that significantly influenced sentiment. They can also drill up from the page to view the sector/ETF/etc. it belongs to and investigate more holistic views and uncover further investment opportunities suitable to their interests.

These features will be implemented through a combination of established softwares and custom code written by our team through the Python language and data will be stored via MySQL. The front end of our site will be built with HTML, CSS, and Javascript.