## Executive Review Template

## : [Spring 2024]

## : [Jordan Luong]

## : [Asteroid Prediction Project]

## Summary:

Provide a concise overview of the data science project, highlighting key objectives, outcomes, and relevance to the business goals. Include key metrics or performance indicators that demonstrate the project's success.

This project is aimed at using data sets from Kaggle, and this data set is maintained by the Jet Propulsion Laboratory of California, an organization under NASA, to run predictions on asteroids to predict each asteroid’s diameter. With this, I will then take my other dataset, which contains the specific GROUPS of asteroid’s (not individual asteroids) to then try to predict and showcase what groups of asteroids lie within the ecliptic, which is another name for a path, just to see what groups lie within our planet’s path.

## Timeline:

Outline the project timeline with key milestones and deadlines. Include information on the current project status, any delays encountered, and adjustments made to the original schedule.

|  |  |
| --- | --- |
| Milestone | Planned Date |
| Executive Review Template and Presentation finished | 2/19/2024 |
| Continue to work on project | Weeks 6-11 |
| Identify and develop solutions to potential risks to project | Week 10 |
| Finalize and document the project for final presentation | Week 17 |
|  |  |
|  |  |

## Data Needs:

Provide an overview of the data sources utilized in the project, including data types, volume, and quality. Highlight any challenges or issues related to data collection, processing, or cleaning.

The datatypes that will be used, just like in the summary, will be from Kaggle, one is a “cleaned” and tuned data type, the other is the official asteroid data set that is being monitored by the JPL group of California. In terms of challenges, since one has already been “cleaned”, one would just have to confirm that everything is done according to how the project is setup. The other is the official dataset, so cleaning that to how one would want it shouldn’t be too much of a problem.

## Data Sources:

* [Asteroid Prediction - <https://www.kaggle.com/code/marissafernandes/asteroid-prediction> ]: [The dataset here has various features that could be used, such as size, velocity, and orbital parameters]
* [Asteroid Data set - <https://ssd.jpl.nasa.gov/tools/sbdb_lookup.html#/> ]:

[This dataset here is the official dataset that is maintained by the JPL of California. Some columns here standout as they could be used in the project]

## Data Challenges:

* [Cleaning and Accuracy/Consistency]:

[When using multiple Machine Learning algorithms, make sure to showcase the difference between the ones used]

* [Handling Data]: [Maintain the integrity of the dataset by “cleaning” and fixing up any missing entries when going through the data.]

## Value Proposition:

Articulate the business value generated by the data science project. Clearly outline the impact on key performance indicators (KPIs), cost savings, revenue growth, or any other relevant business metrics.

## Key Benefits:

* [Prediction model]: [End goal of this project is to be able to predict the first asteroids database’ trajectory, that is the end goal, to be able to predict asteroid’s trajectory ]
* [Early Warning]: [Development of early warning systems that would lead to faster/improved evacuation and potentially damage mitigation as well]

## KPI Impact:

These numbers are all hypothetical, but going with what my value proposition states, we could maybe see something like these numbers in an actual legitimate project:

|  |  |  |  |
| --- | --- | --- | --- |
| KPI | Before Project | After Project | Improvement |
| Accuracy of Asteroid Diameter Prediction | 75% | 90% | 15% |
|  |  |  |  |
| Response Time to Potential Threats | 10 days | 4 days | 6 days |
|  |  |  |  |
|  |  |  |  |

## Elevator Pitch:

Craft a succinct and compelling elevator pitch that summarizes the essence of the data science project. Highlight the problem solved, the solution provided, and the tangible benefits to the organization.

Using the two Kaggle datasets, the Asteroid Prediction Project aims to enhance and improve the accuracy of hazardous asteroid diameters, which will in turn be able to allow the access to be able to predict asteroid trajectories to predict the potential impact, in the hypothetical that they were to hit earth.