

GROUP 4

# COSMOSCOPE



MASADRE | PARDILLA | MAGBITANG | BIABADO | QUIRAY | NOTARIO



# INTRODUCTION

CosmoScope is a Solar System 3D simulation program that lets users explore and learn about the celestial bodies that comprise our solar system. This program provides a 3D virtual environment that simulates the motion and behavior of the planets in our solar system. Users of CosmoScope can see the positions and movements of the planets over time. This simulation software is intended to be user-friendly and informative, making it an excellent resource for astronomy enthusiasts, students, and educators.



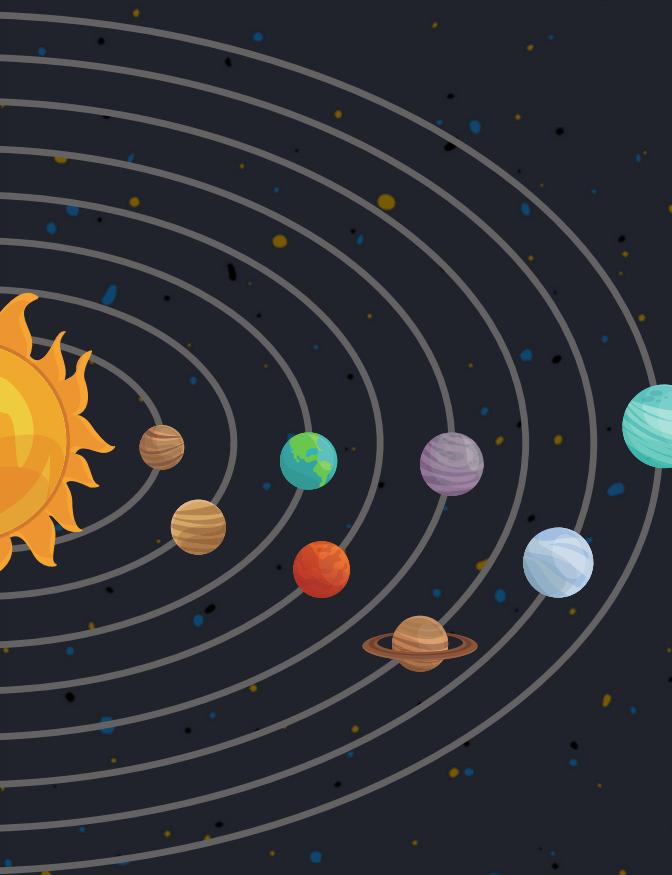
EARTH



URANUS

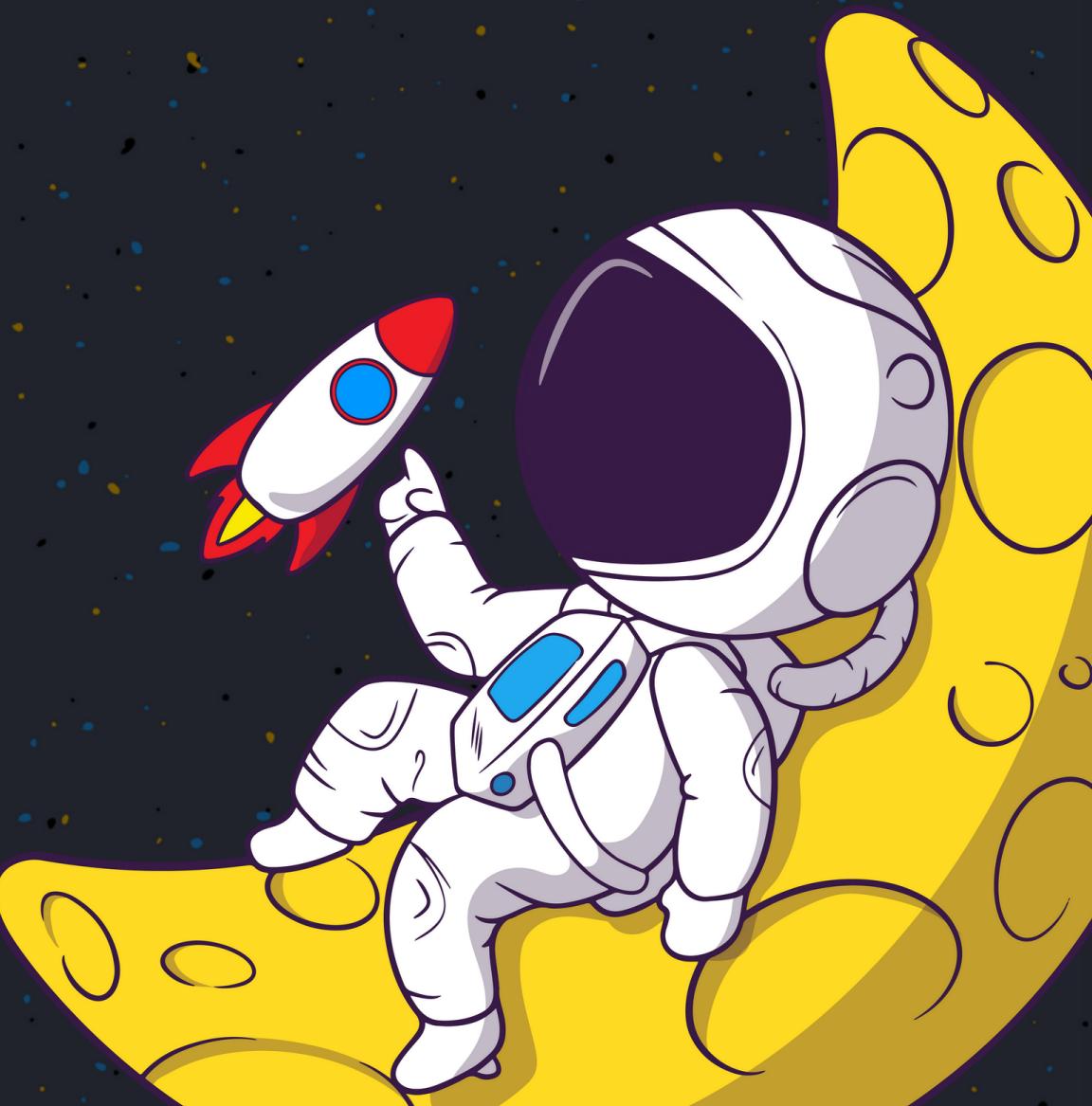


VENUS



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# PROJECT DESCRIPTION



# PROJECT DESCRIPTION

As part of this project, an innovative app that simulates our solar system was developed. This app will offer a 3D virtual representation of our solar system and how its planets orbit. Users will be able to explore the solar system through an interactive and intuitive interface, allowing them to zoom in and out of the different planets, sun, and other celestial bodies that make up our solar system. It will allow users to see the positions of the planets and their orbits over different time periods.

# PROJECT SCOPE



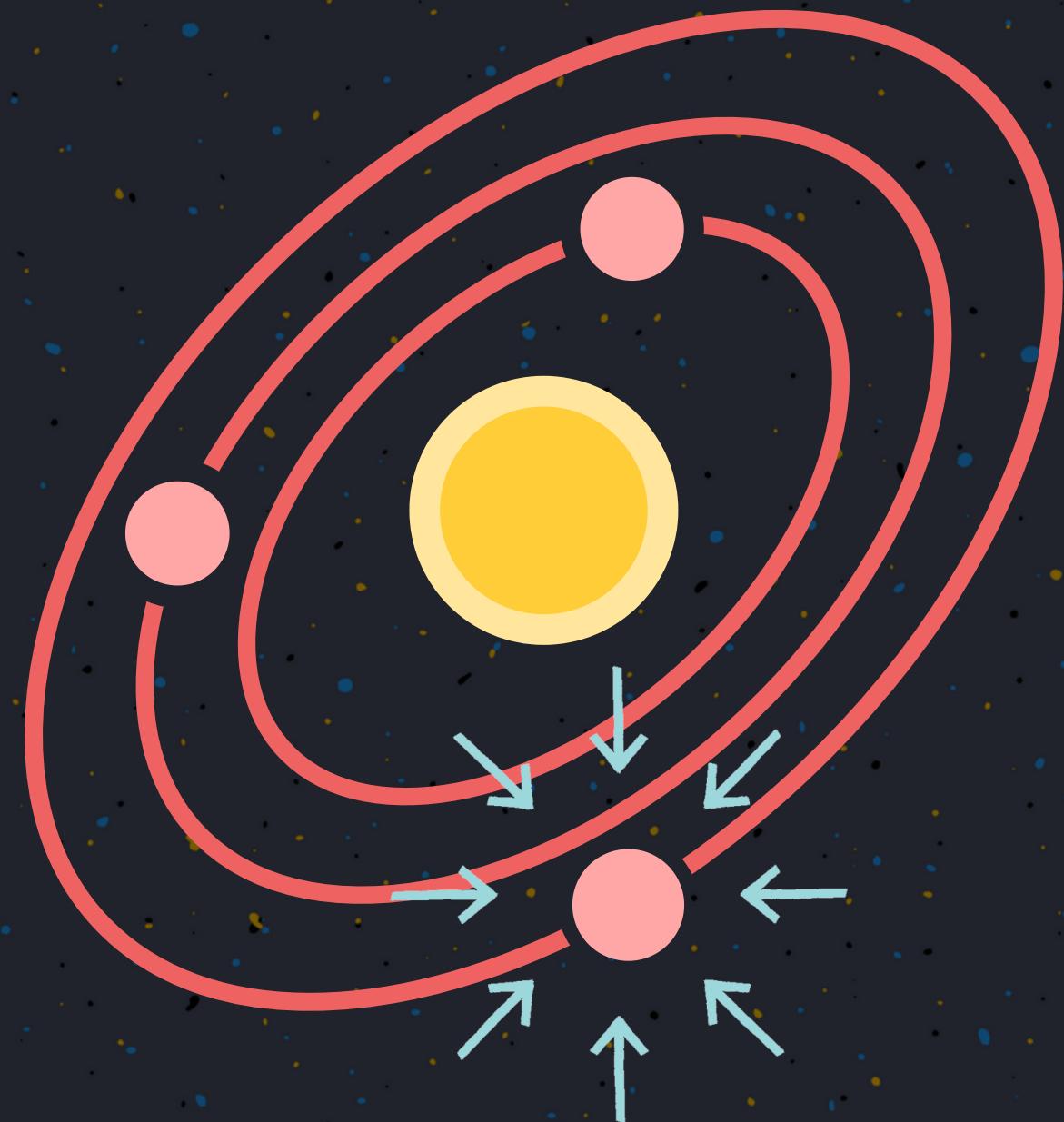


# PROJECT SCOPE

## WORK TO BE ACCOMPLISHED

### Methods for creating a CosmoScope

- Creating and organizing the aims, layouts, goals, prerequisites, and essential data.
- Making an app for general Solar System use
- The app development process
- Testing the application created with the assigned programming language
- Creating a better Solar System app that can be used in general.





## PURPOSE OR BUSINESS NEED

- Educational Tool
- Entertainment
- Scientific research
- Personal interest

## STAKEHOLDERS/USERS

- Students
- Science educators
- Researchers
- Casual users

# OBJECTIVES

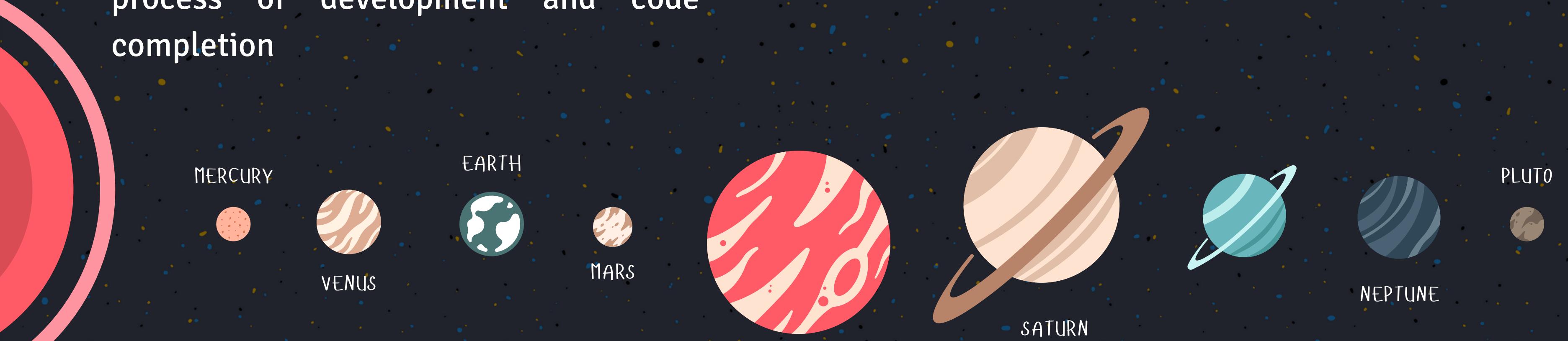


## TECHNICAL

- To fully design and implement a Python program
- To develop a Solar System 3D Simulation app in a Python scripting language
- To use PyCharms as an IDE in the process of development and code completion

## SCHEDULE

To complete the project within Prof. Angelica Payne's given timeframe (January 2023 - February 23, 2023)



# DELIVERABLES





# INTERNAL DELIVERABLES

- INITIAL SYSTEM CODE (.PY FORMAT)
- TESTING & DEBUGGING RESULTS

- FINAL SYSTEM CODE (.PY FORMAT)
- EXECUTABLE FILE

- APP'S LOGO
- FLOWCHART

- DOCUMENTATION
- POWERPOINT PRESENTATION

# EXTERNAL DELIVERABLES



Python built-in libraries:

Solar System Simulation

- Matplotlib
- PropagationModule
- Numpy

Propagation Module

- Matplotlib
- SimulationParameters

Propagation Module

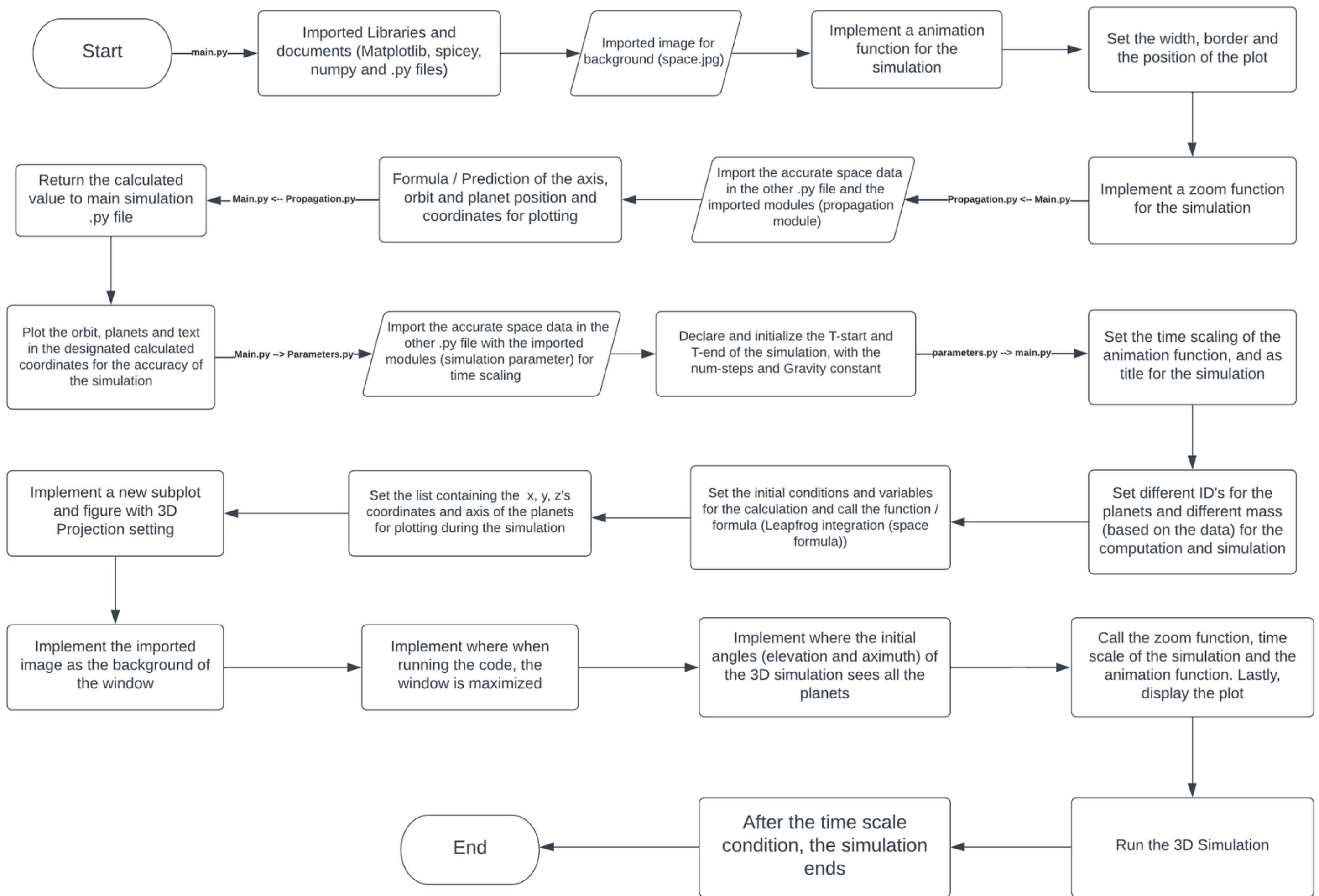
- Numpy
- Spiceypy

Display the Graph and Simulation

Exit Program

# FLOWCHART





# CLIENTS / USERS REQUIREMENTS

# CLIENTS / USERS REQUIREMENTS

- Educators and students who want to use solar system simulations to learn about it.
- Anyone who has access to computer.
- Anyone with an interest in solar systems.

# SUCCESS FACTORS





## 1. SERVE THE PROJECT PURPOSE

- Simulates the motion and behavior of the planets in our system.



## 2. MEET ALL OF THE PROJECT TECHNICAL OBJECTIVES



## 3. MEET ALL OF THE PROJECT SCHEDULE OBJECTIVE



## 4. DEVELOP THE APP WITHOUT ANY BUGS AND ERRORS



## 5. PRESENT THE APP TO THE STAKEHOLDERS AND USERS

# PROJECT TEAM ROLES AND RESPONSIBILITIES

# PROJECT TEAM ROLES AND RESPONSIBILITIES



ELISHA  
JHOYCE  
MAGBITANG  
SYSTEM ANALYST



DEVONERE  
BIABADO  
BUSINESS ANALYST



MARK  
FRANCIS  
MASADRE  
PROJECT MANAGER  
DEVELOPER & DESIGNER

DIONMELLE  
PARDILLA  
DEVELOPER & DESIGNER



SHOSHANNAH  
NOTARIO  
TECHNICAL WRITER



DESEREE  
QUIRAY  
TECHNICAL WRITER



# IMPLEMENTATION





## TEAM TASKS

- Brainstorm ideas.
- Design the app.
- Develop the app.
- Test the app.
- Present the app.

## PROCEDURE

- Agile Methodology: SCRUM

## TOOLS/TECHNOLOGY

- PyCharm
- GitHub
- Canva

## PROJECT CHANGE CONTROL PROCESS

- SCRUM using iteration process

# PROJECT SCHEDULE AND TIMESTONE



# PROJECT SCHEDULE AND TIMESTONE

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01-13-2013  
PROJECT  
IDENTIFICATION



01-01-2013  
PROJECT  
DESIGN



01-6-2013  
02-16-2013  
PROJECT  
DEVELOPMENT

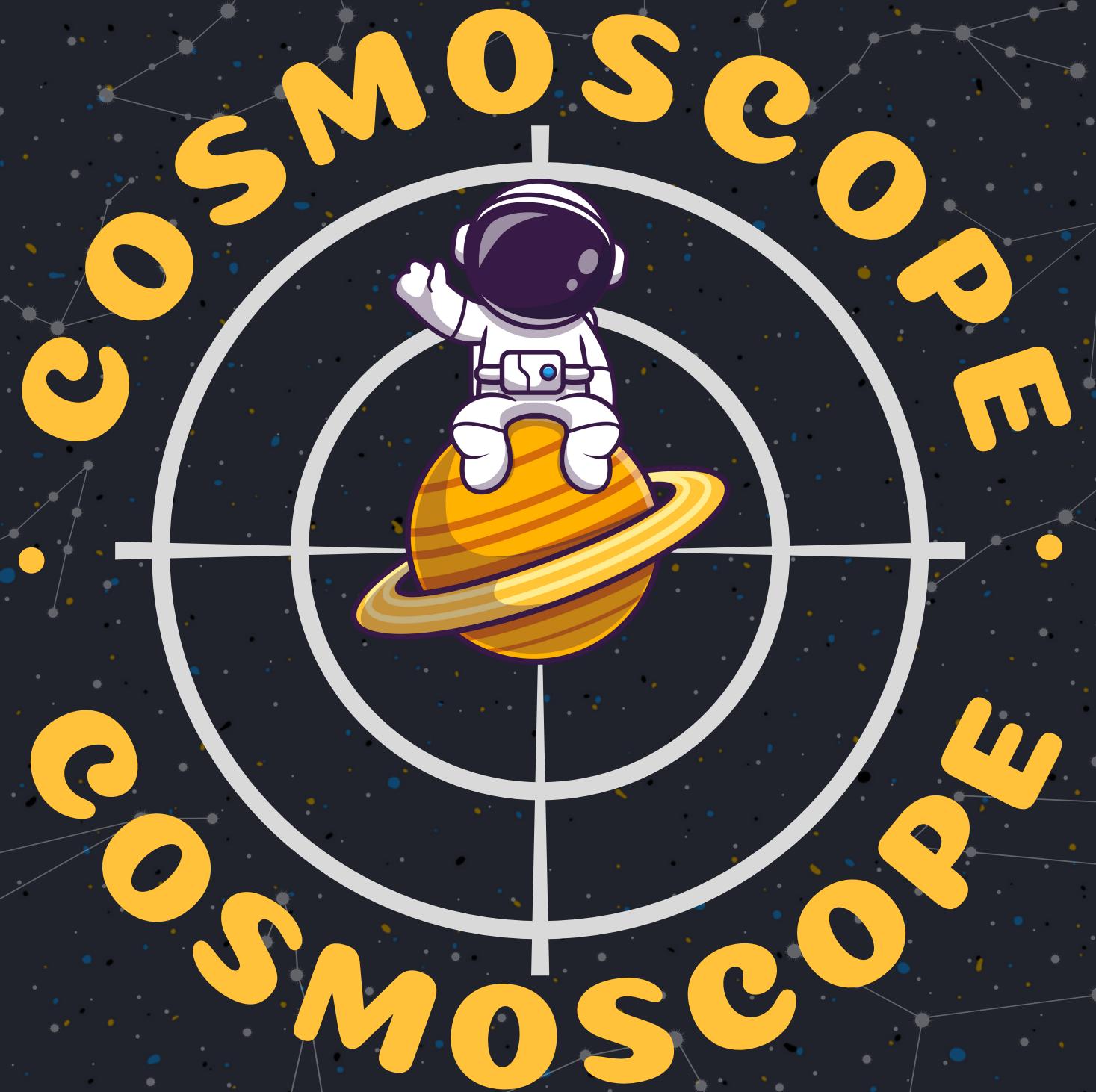


01-21-2013  
PROJECT  
PRESENTATION



LOGO





"CosmoScope" is a name that evokes the idea of exploring the cosmos through a visual medium, as if looking through a telescope or microscope.

# DOCUMENTATION



# PROJECT PRESENTATION



Q & A



# REFERENCES



# REFERENCES

[https://naif.jpl.nasa.gov/pub/naif/generic\\_kernels/s\\_pk/planets/](https://naif.jpl.nasa.gov/pub/naif/generic_kernels/s_pk/planets/)



# THANK YOU

SEE YOU NEXT TIME