Lab 9: SIDARTHE model and Pygame

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Part 1: SIDARTHE model

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Packages that need to be installed

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

There will be four packages that need to be installed to run the program successfully from Jupyter. Those four packages are Numpy, Scipy, Pandas, Matplotlib, SymPy, Pint. In addition, you need to upload file modsim.py to Jupyter.

How to install packages in Python

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

To install those packages, you will type “!pip install Pint” in Google Colab. You will need to do the same thing with other packages.

After that, you will be able to run the code.

How to execute the program:

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

After hitting the run button, you will receive the results as shown in below:

Graphical user interface

Description automatically generated

Part 2: Pygame – Dance Challenge

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

How to install pgzrun package

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

To install the package in Python, you will type “pip install pgzrun” in “Anaconda Powershell Prompt” program as shown below:



Moreover, you will do the same thing for pygame and pgzero to run the game successfully.

How to execute the program:

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

After hitting the run button for the code, a window below will show up for you to play the game.

Moreover, you will hear the background music when running the code.

Funnel chart

Description automatically generated with low confidence

Figure1: Odd sequences number is player1’s turn.

Graphical user interface

Description automatically generated

Figure 2: Even sequences number is for player2’s turn.

How to play the game

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

This game is for two player that play against each other. The odd sequences number is for player1, and the even sequences number is for player2. It will show up which player’s turn to play as shown above. The player that has more scores will win the game. If one of the players get one move wrong, the game will be over.

A picture containing diagram

Description automatically generated

Figure 3: Game over screen.

Author Hai Long

[hai.long@sjsu.edu](mailto:hai.long@sjsu.edu)