Lab 9: SIDARTHE model and Pygame

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Part 1: SIDARTHE model

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The code below is to make the system for the model.

Text

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The code below is to create parameters for the model.

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The code below is the update function that uses to calculate and update the value for S, I, D, A, R, T, H, E.

A picture containing text

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The code below is to run the simulation for the model.

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The code below is to plot the results

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Part 2: Pygame – Dance Challenge

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The code below is for game window dimension

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The code below is for the game parameters and list values for move\_list and display\_list

A screenshot of a computer

Description automatically generated with medium confidence

The code below is for getting character images and setting the positions.

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The code below is the draw function to draw the game and display text messages based on their condition statements.

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The code below is the reset dancer function. When the dancer completes his moves, he will be back to the “dancer-start” position.

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Description automatically generated

The code below is the update dancer function. When “move = 0, 1, 2, 3”, it means the dancer moves “UP, RIGHT, DOWN, and LEFT”, respectively.

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The code below is for displaying dancer move on the screen with the mechanics as I mentioned above. In addition, the player2 is for the even dance sequences. The player1 will be the opposite.

A screenshot of a computer

Description automatically generated with medium confidence

The code below is the generate move function. The move list will be generated randomly from 0 to 3 for one dance sequence.

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Description automatically generated

The code below is the countdown function. It will count when the dance completes his moves.

Text

Description automatically generated

The code below is the next move function. It will generate the next move when the previous ones complete.

Text

Description automatically generated

The code below is the game rounds function. After every three dance sequences, it will add one more dance move to make the game more challenging.

Text, chat or text message

Description automatically generated

The code below is the key function for player1 and player2 to play the game. Player1 will use UP, RIGHT, DOWN, and LEFT arrow keys to get the score.

Text

Description automatically generated

Player2 will use the W, D, S, and A keys to get the score.

Text

Description automatically generated

The code below is the update function for the game to keep running. If one of the players get one move wrong, the game will be over, and the music will stop.

A screenshot of a computer

Description automatically generated with medium confidence

The code below is to call the generate\_move function and music to play.

If you would like to change the music, you can change it in line 250.

In addition, you must include pgzrun.go() to make the game run successfully.

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