Project 1: Day Activities Simulator.

Overview:

This a simulator to help estimate the possibility of completing a set of activities in a fixed time frame. With my busy schedule working full-time and taking MIDS classes, my evenings can get very jam-packed. This simulator will help with time management for certain activities. The simulator will use my current stress levels and collect a bunch of activities I would like to complete within a time frame. Then simulate whether I can complete all the activities without getting too tired as well as without running out of time.

Classes:

Human: This class will handle the human's personal information, would be used to participate in activities and travel between places. The attributes for this class will include name, entry & exit stress levels. There will be methods to get and set the stress levels as activities are performed.

Time: This class will manage the real time of the simulation. This time will interact with the places and activities. The time will be initialized based on the user entry. It will contain start and end times attributes. It also will have a method to alter the time (fast forwarding time).

Car: This class will contain the Humans car information. This will be used to measure the time taken to travel between activities and will affect the stress level of the human. The car class will contain attributes like car name, age of car, type of transmission, average travel speed.

Places: This class will contain the location of various activities. The class will contain attributes for the (x,y) coordinated of the locations.

Activities: This class will contain the various activities the human can participate in. This class will contain attributes for the time an activity will take and how much stress it requires.

Interaction with Program:

The program will prompt the user for their personal information and stress levels. These will be used to create an instance of Human. Then the user will enter their car information that will be use to initialize the car that will be used to travel for the activities. Then the start and end time of possible activities will be entered by the user. The program will have a set of places and activities initially created to make the simulator run. But it will prompt the user if they will like to enter any new places and activity.

The program will ask the user repeatedly for what activity they want to perform and where the activity will be performed. In the background as each activity is performed the program will reduce the users stress level, reduce the time. As a new place is entered, the program will check the distance between places and calculate the stress to travel between the locations based on the type of car the user has and will reduce the time based on travel distance.

The program will terminate when the stress reaches the exit stress level the user specified or the user runs out of time.

This will require a mixture of small objects with only attributes like the car or places, as well as more complex objects with methods to manipulate the objects like the Human and Time objects. It will require some complexity for the objects to interact with one another and for the program to effectively run the simulation