Project 1: Person Running Errands in a City

**Overview of Program:**

It’s a simple game, where you are running errands in a city. The point of the game is to navigate through a city and collect items, and do simple tasks in order to get money and attributes. After getting a certain list of items and having a certain set of attributes, you need to return home. If you return home having all of these things done, the game will end.

**Complexity:**

There are four different classes that are pretty complicate and intricately intreract with each other. They are big classes: it’s going to be hard to have them all functioning correctly, and they have enough attributes and take advantage of many different areas of object-oriented programming. The project will demonstrate a thorough understanding of object-oriented programming and how to write a program that takes advantage of class structures.

**Overview of Classes:**

* City: Has a person attribute, this person is the one you control and create when initializing the class. The person starts with a certain amount of money. This person can navigate the streets, which has randomly generated buildings, which the person can enter. Depending on what the building is, a person can either earn money or spend it. The person has to collect enough money, buy a certain collection of items, and return home in order to reach the end. **Attributes: Streets (list of objects), Person (object)**
* Street: Each street will have start coordinates and end coordinates. The name will correspond to these coordinates. Each street then has a collection of buildings, again each of which will be randomized. A person has the ability to walk through these streets, and a random event can happen when crossing streets. Each street will also have some random people, with these people having something to offer. Maybe it’s a homeless person who needs cash – giving them some money will give you some morale, which is one of the requirements for ending the game. **Attributes: Start/end coordinates, name, list of buildings, list of people**
* Building: A building is either a shop or a task center. A shop is where you can buy items (that are required to end the game), and a task center is self-explanatory – it gives you a task to do with some sort of reward. The reward depends on how difficult the task is (say you have to navigate 20 streets in order to deliver something; this will pay a lot compared to having to go next door and delivering something). **Attributes: Type, list of tasks**
* People: Each person will have set dialogue, and you will be able to say something to these people. A person may also be a part of a task, this will be included in their attributes. **Attributes: Dialogue, task objects**