Project 1 Proposal: Plan for a day in Unversal Studios

Programmer: Haihui Cao, MIDS Student

Class W200: Python Fundamentals for Data Science

2/25/2018

**Overview of the Project:**

This project will simulate a day in the Unversal Studios theme park for a person. The purpose of the program is to help the person to plan one-day activities in the park. The park is open for 12 hours each day. The total budget of the day for a person is $350. The person will do some activities in the park within the budget in the 12 hours or less. The price of the park admission ticket is $120 and required with some of the activities included in the price. The express pass is $80 and optional. The express pass will reduce the time spent on each activity. The activities include rides, attractions, shows, dining, and shopping. Each activity will have a certain set of attributes such as the time needed and price. At the end of the program, you will get a certain list of activities, souvenirs, total time and total price. If the total price exceeds the budget or the total time is bigger than 12 hours, the program will remind you to change the selected activities to meet the requirements.

**General Design of the Program**:

There are seven different classes including rides, attractions, shows, dining, shopping, budget, and time. The classes will interact with each other. The program will assume that the trip from one activity to another won’t take time and price. The time and price of the trip from one activity to another have been included in the activities already.

**Overview of Classes:**

* rides: This class contains information about the rides that the person chooses from a database of rides in the park. It contains name, description, and needed time. Rides are included in the park admission ticket. It has two options of needed time with and without express pass purchase.
* attractions: This class contains information about the attractions that the person chooses from a database of attractions in the park. It contains name, description, and needed time. Attractions are included in the park admission ticket. It has two options of needed time with and without express pass purchase.
* shows: This class contains information about the shows that the person chooses from a database of shows in the park. It contains name, description, and needed time. shows are included in the park admission ticket. The needed time is same with or without express pass.
* dining: This class contains information about the dining that the person chooses from a database of restaurants in the park. It contains name, description, price, and needed time.
* shopping: This class contains information about the shopping that the person chooses from a database of souvenirs in the park. It contains name, description, total price, and needed time. It contains a function get\_total to calculate the total price spent on shopping. It also contains a function that count how many items that the person will buy.
* budget: contains the information about the user's spending depending on the selection of activities, dinning and shopping. It contains a function that calculate the remaining budget that the person can spend. It the remaining budget is less than 0, it will remind people to change the activities.
* time: contains the information about the user's total time used depending on the selection of activities, dinning and shopping. It contains a function that calculate the remaining time that the person can use before the park is closed. It the remaining time is less than 0, it will remind people to change the activities.