# Problem Solving Through Programming COM 411 Software Artifact with Documentation

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Objectives

The purpose of this project is to develop software that may be used to handle and process data associated with the review from a publicly available dataset. The project's goal is to develop software that can be used to handle and process data connected to the reviews that were recorded for Disneyland. The reviews were made from people around the world based on the 3 different Branches (HongKong, California and Paris).

This report outlines the module used in analysing and processing the data sample provided from the Disneyland\_reiews.csv

MAIN

This was the module used to develop the programme. Below I have stated the various details and scripts utilised and specific functions generated for user input and output for management of data.

Displaying the title

The Title display function is enabling the program title to be displayed “Disneyland Review Analyser” which is then displayed in between dashes which correlate to the number of characters within the title.

Dashes = ‘-‘ \* len(title) shows the number of dashes should equal the number of characters. This was completed for above and below the title as requested. (26 Dashes)

Print (“”) should display the contents written within the brackets and the quotation marks.

Def is used to define. Also indicates the beginning of a function definition. Function name is ***display\_title*** which is abbreviation of what the function does.

***Parameters*** are the input value which is accepted by the function in this case the title.

***Hashtags (#)*** are used for comments which annotates the code which is ignored and not executed.

Reading CSV File

this ***read\_csv\_file*** function establishes a relation between the specified CSV file in this case ***Disneyland.reviews*** which is a CSV file in Microsoft Excel. This function then returns the dataset. ***Csv\_file\_path*** specifies the path of the file that I had imported. This also returns the number of rows within the dataset (***disneylad\_reviews***) (42652)

I was also able to modify the ***read\_csv\_file*** function to return ***data\_list*** which allowed me to extract data from the file.

***def*** is defining the function ***read\_csv\_file*** FreeCodeCamp, 2022, Basic Syntax for Defining a Function in Python, [viewed 03/01/2024], Available from: <https://www.freecodecamp.org/news/python-functions-define-and-call-a-function/>

***with open*** allows the CSV file to be opened in read mode. The ***newline=””*** argument Is used for consistency in behaviour across various platforms when reading the lines

***csv.reader*** is used to read all the rows within the specified CSV file***. Header = next*** excludes the header rows within the csv file. This is so that the row of content is accurate and will disregard adding the headers to the number of rows. ***data\_list*** will contain all the rows from the CSV file.

The print function displays a message regarding whether the dataset has successfully been read and the number of rows in the dataset ***{len(data\_list)}.*** Len calculates the number of rows in the dataset.

The return function returns the ***data\_list*** which is containing the sum of rows from the CSV file.

***Csv\_file\_path*** will show the path used to locate the CSV file. This will show the various folders, till eventually showing the filename with .csv

Dataset contains the loaded data from the CSV file to be used for further analysis.

Displaying Menu

This is where the main menu is constructed. The ***display\_menu*** function displays the options of the main menu, prompting the user to enter their designated choice (A B or X)

Sub-menus were also added to the main menus providing the user with more options to choose from to retrieve more information. The option for the sub-menus were as follows:

**For Option A (View Data)**

A – View Reviews by Park

B – Number of Reviews by Park and Reviewer Location

C – Average Score per year by Park

D – Average Score per Park by Reviewer Location

**For Option B (Visualise Data)**

A – Most Reviewed Parks

B – Average Scores

C – Park Ranking by Nationality

D – Most Popular Month by Park

The main menu function will ask the user to enter a valid option from the list of options. When a valid option is entered, this function will return the message but on the other hand, when an invalid option has been picked it will prompt the user to pick another option, unless the user chooses to exit.

The print function is used to display the message in the menus.

Def again is used to define the function e.g. displaying menu and sub menu

Within the sub-menu view reviews by park, the number of reviews by park and reviewer location, average score per year by park, and average score per park by reviewer location are among the options available to choice within Option A of the main menu (View Data).

Within the Sub-menu for option B of the main menu (Visualize Data) the selections available for the user to choose from includes the most reviewed parks, average scores, park ranking by Nationality, and the most popular month by park.

User Interaction

Users have the option to ***view data (A) or visualize data (B)*** using the options from the main menu, and obviously ***(X) to Exit*** the main menu.

***While true:*** initiates and infinite loop until the ***break*** statement is implemented.

***input*** prompts and enables the user to select their option example (A, B, or X)

***if statement*** is a conditional statement which will check the users input and display accordingly. for instance is ‘A’ is true display the message for option ‘A’

***Sub\_menu\_selection*** displays message to prompt user of the selections for the submenu.

***If Sub\_menu\_selection.upper() == ‘A’:*** means converting to uppercase. This statement is another condition statement embedded within the main menu which checks the sub-menu selection. Depending on the choice of the sub-menu it will execute and display message corresponding to the chosen option.

Examples of possible functions to be called based on the selected choice of the user are as follows:

* park\_name
* Reviewer\_location
* Dataset
* “Disneyland Park”
* Average\_score\_per\_year\_by\_park

***Elif user\_selection.upper() == B*** – elif is another conditional statement this is if the user selects ‘B’ it selects the sub-menu for Option B and prompt user for their sub-menu choice.

Else: is another conditional statement but this will display an error message showing the value entered was invalid. The loop will also continue till the user chooses option X.

Due to the fact that a continuous loop command was added it ensures that the menu displays repeatedly until the user wants to exit using the X option.

The Data Analysis

As the user confirms their choice it should be repeated to show the user that this was the specific choice selected. An example is this:

Specific analyses based on user input are intended to be provided via functions such as: ***display\_reviews\_for\_park,***

***count\_reviews\_by\_park\_and\_location,***

***average\_score\_per\_year\_by\_park***. Make sure these functions are defined first, though, before calling them.

Def ***display\_reviews\_for\_park*** is used to define this function. When the function is called the values would need to be passed for the parameters ***(data, park\_name):***

The comment indicates information regarding the ‘dataset’ which is expected to contain data from the CSV file.

This list comprehension constructs a list through all the rows excluding headings in the dataset ***dataset[1:]*** it also filters rows where the value is corresponding to the specified ***park\_name***

Another condition statement checks to see if the list in ***park\_reviews*** is empty, and a message to be displayed if it empty, if not empty it should proceed.

If there are reviews for a specific park it will print a header according to the name of the park.

To conclude, the function extracts a dataset, with the park name as an input, to find reviews regarding particular park and displays them. On the other hand, if no reviews were found, it will display a message showing reviews not found.

Functions of Visualisation

If the user choices Option A from the main menu it should then display the options in the Sub-menu for Option A. the Plot\_reviews\_per\_park function permits for the sub-menu to display for the Option chosen in the main menu. This function intends to envision data in a graphical format.

Implementing the Programme

For integrity of the programme the script will continuously prompt users to select a choice from the menu till the user chooses to Exit (Option X)

Conclusion

This module is used as an interactive structure for users and the Disneyland Reviews Analyser program. I have been able to portray functions displaying, titles, reading CSV files, building interactive menu ensuring it is user friendly adding continuous loop and analysing/ visualizing data.