CS 115 - Introduction to Programming in Python

Lab Guide 05

Lab Objectives: Tuples, Lists, Dictionaries

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1. Write a program that is used to store and retrieve year and title information about movies. Your program should have the following functions:

   `load_movies()`: takes a file name as a parameter. Each line of the file contains the movie year and the movie name, separated by commas. The function should return a dictionary where the keys are the *first character* of the movie names, and the values are a list of tuples, where each tuple in the list contains the integer year and full names of each movie whose name starts with the given character.

   `get_movies_by_year()`: takes a dictionary of movies and an integer year as parameters. Return a list of the names of movies produced in the give year. If no movies exist, return an empty list.

   `get_movies_by_name()`: takes a dictionary of movies and a string character. Return a `list` of movies (names and years) of the movie whose names start with the given character.

   `print_list()`: takes a list as a parameter and prints each element in the list on a separate line. Use this function to display all lists in question 2.

2. Write a script that uses the functions defined above to do the following:
   a. Using data from the file 'movie_data.csv' (a text file containing comma-separated values), creates a dictionary using the `load_movies()` function.
   b. Inputs a character from the user and displays the list of all movies whose title starts with the character given (year and name).
   c. Inputs a year from the user and displays the list of names of all movies from the given year.

Sample Runs:
```
Enter first character of movies to search: A
Movies with names starting with A:
(2000, 'Aqua Teen Hunger Force: Vol. 1')
(2003, "Ashtanga Yoga: Beginner's Practice with Nicki Doane")
(1941, 'A Yank in the R.A.F.')
(1974, 'At Home Among Strangers')

Enter year to search: 1998
GTO: Great Teacher Onizuka: Set 2
King Cobra
Record of Lodoss War: Chronicles of the Heroic Knight
Yellow
Zakhm

Enter first character of movies to search: q
Movies with names starting with q:
(1982, 'Querelle')
(1968, 'Quatermass and the Pit')
(1982, 'Quest for Fire')
(1975, 'Queen of the Stardust Ballroom')
(1982, 'Qurbani')

Enter year to search: 2019
No movies from the year "2019" found
```