Project 2: CPSC 535 - 01 - Advanced Algorithm

Project Report - It's a Small World

Summary:

In this project, a spin-off of the well-known game "Six Degrees of Kevin Bacon" must be implemented. In the game mentioned above, we connect Kevin Bacon with the movie cast he has worked with 6 degrees or less. Similarly, in this project, we need to find the shortest connection between the cast of two movies. The shortest connection can be either 1, 2, greater than 2, or no connection at all.
For calculating this connection, we need to take different dataset files containing variable sets of casts. The number of sets of cast denotes the variable 'n.' We order the cast as an array/list of strings from CAST[0], CAST[1], CAST[2] ……. CAST[n-1].

If cast[0] and cast[1] has one or more string in common, i.e., there is an actor who has worked in both movies, then the shortest connection is 1 for these two casts. If cast[0] and cast[1] don't have a common actor, but any one actor from cast[0] and cast[1] has worked together in the cast[2] to cast[n], then the shorted connection between them is 2. If both conditions fail, then either the shortest connection is greater than 2, or there is no connection at all.

Input Variables:

1. The number of casts (n).
2. The list of the casts.

Output Variables:

1. If shortest connect = 1, then shortest connection and common string.
2. If shortest connect = 2, then shortest connection and common list of cast connecting them.
3. Otherwise, display "Shortest connection > 2 or no connection."

Pseudocode:

This program calculates and displays the shortest connection between the actors cast in two different movies. Connect can be 1, 2, greater than 2, or no connection at all.

START
Read the .csv file for input n and cast.
FUNCTION SIMPLE_CASE_1()
{

```
for element_in_zero in CAST[0]:
    for element_in_one in CAST[1]:
        if element_in_zero == element_in_one:
            return "Shortest Connection = 1, Actor/Actress = " + "".join(element_in_zero)
```

}

FUNCTION SIMPLE_CASE_2()
{

```
for item0 in CAST[0]:
    for i in range(2, len(NEW_CAST)):
        for j in NEW_CAST[i]:
            if item0 in NEW_CAST[i]:
                for item1 in CAST[1]:
                    if item1 == j:
                        return ("Shortest Connection = 2, ", NEW_CAST[i])
```

}

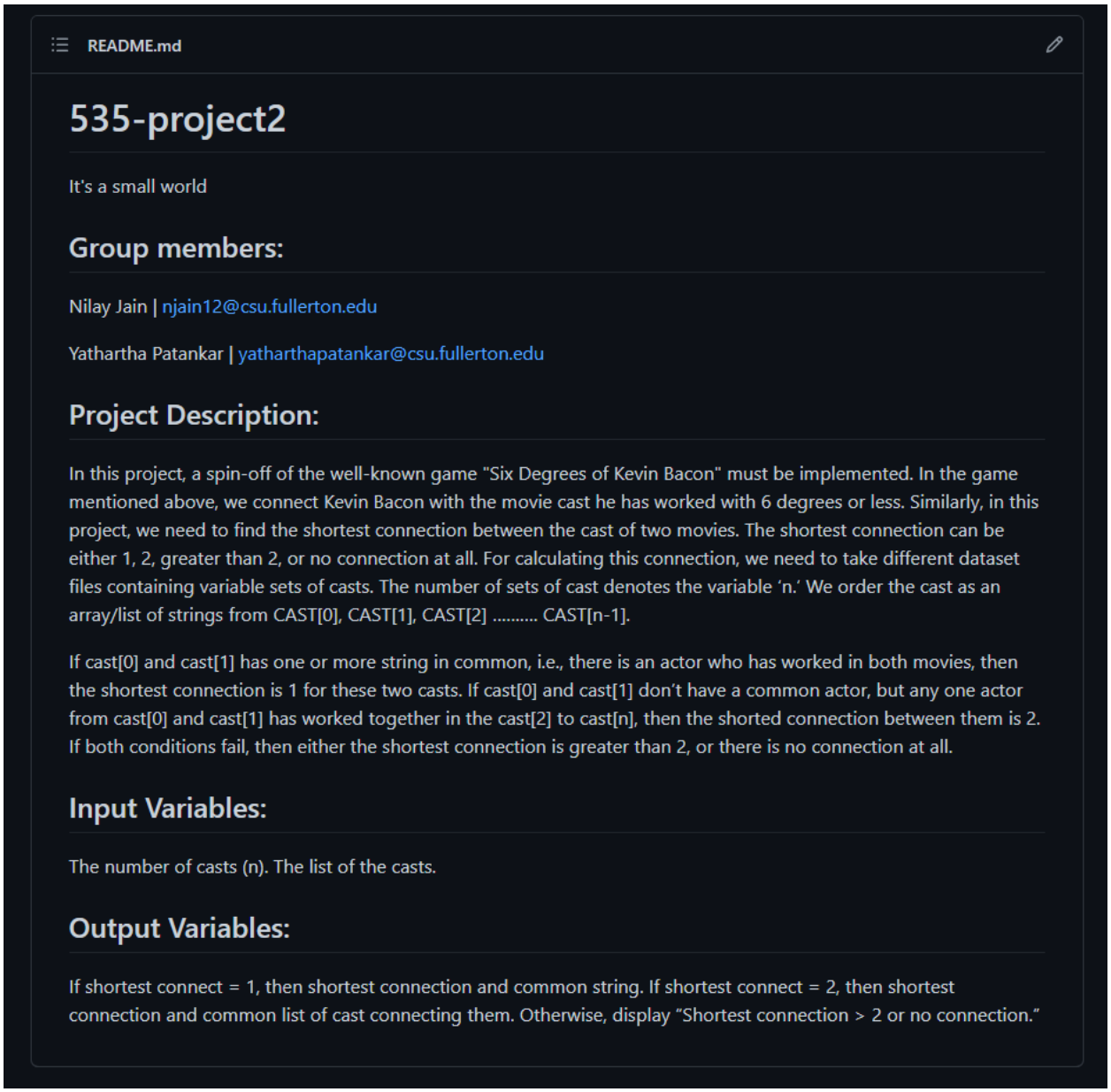
```
// Taking the output of the function in the result variables.
result_1 = simple_case_1()
result_2 = simple_case_2()


// Printing the results.
If result_1 not None:
  print(result_1)
Else If result_2 is not None:
  print(result_2)
```

```
Else:
   print("Shortest Connection > 2 or no connection")
```

END

Output Screenshots:

Readme.md:



README.md

535-project2

It's a small world

Group members:

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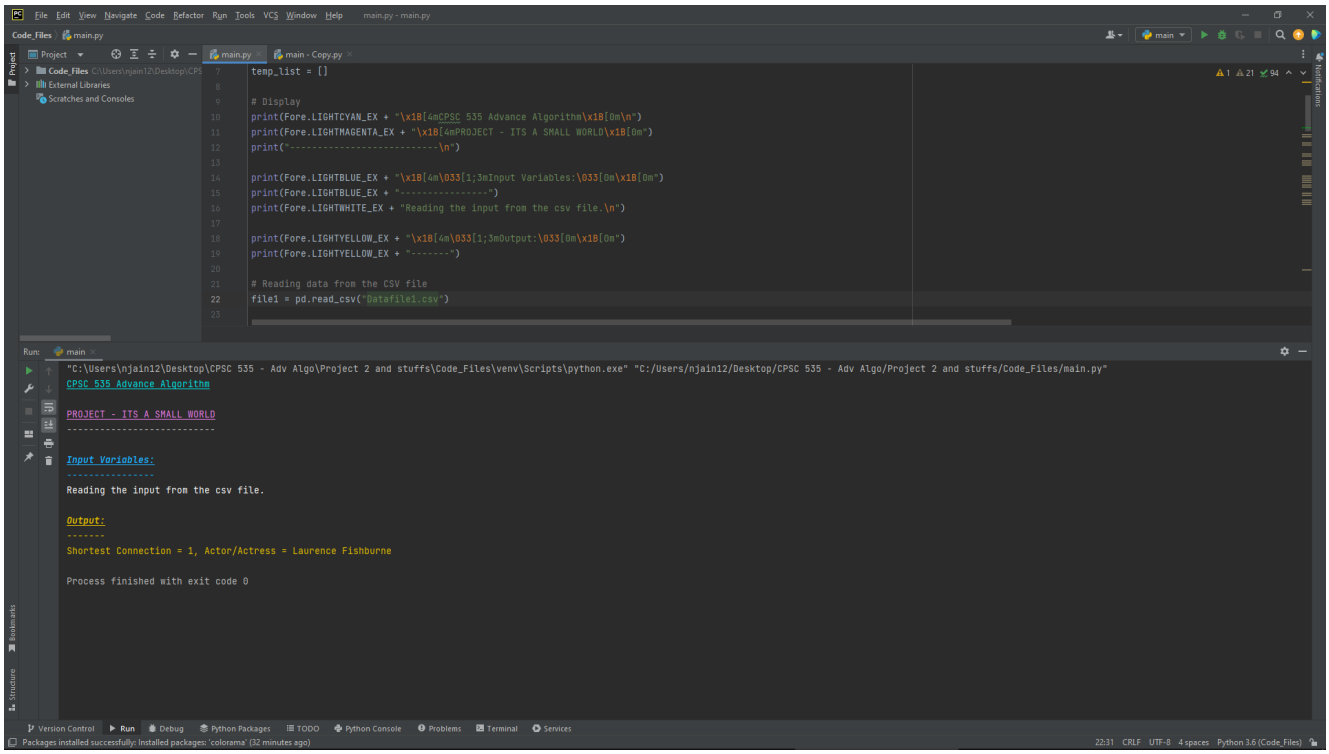
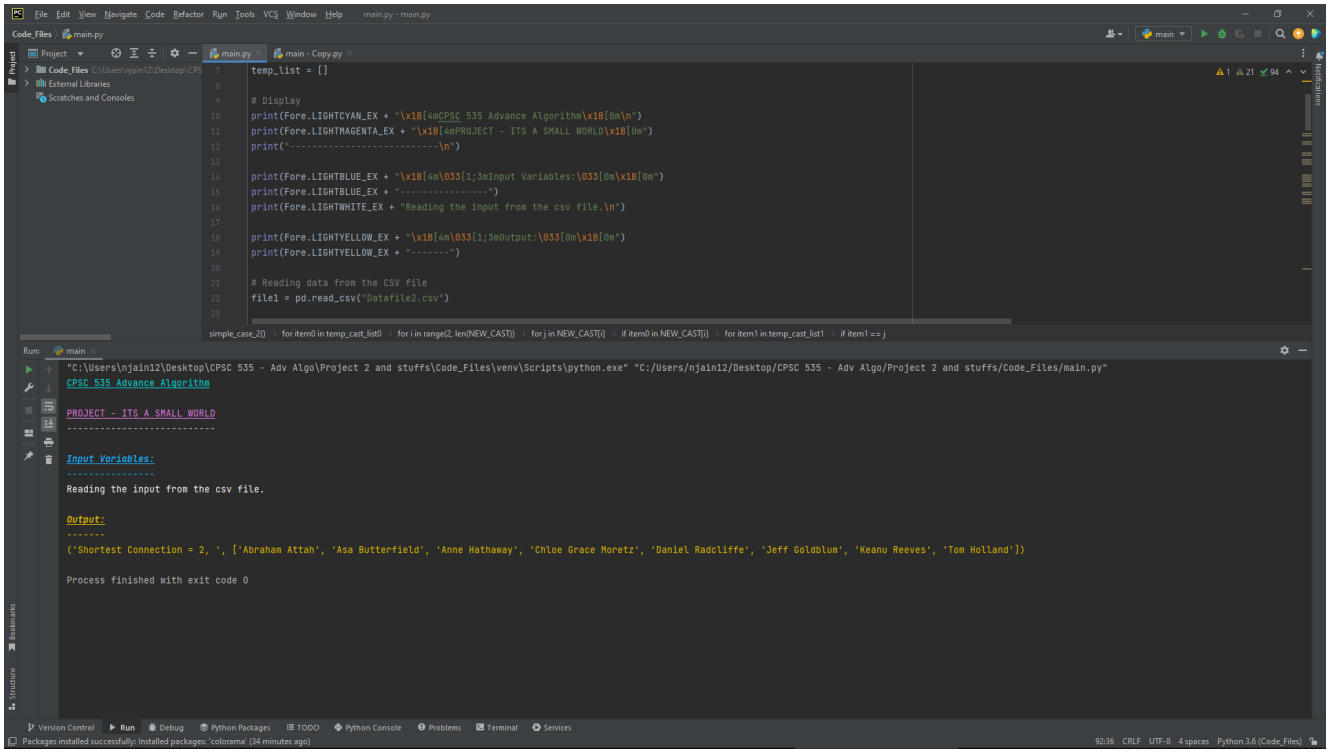
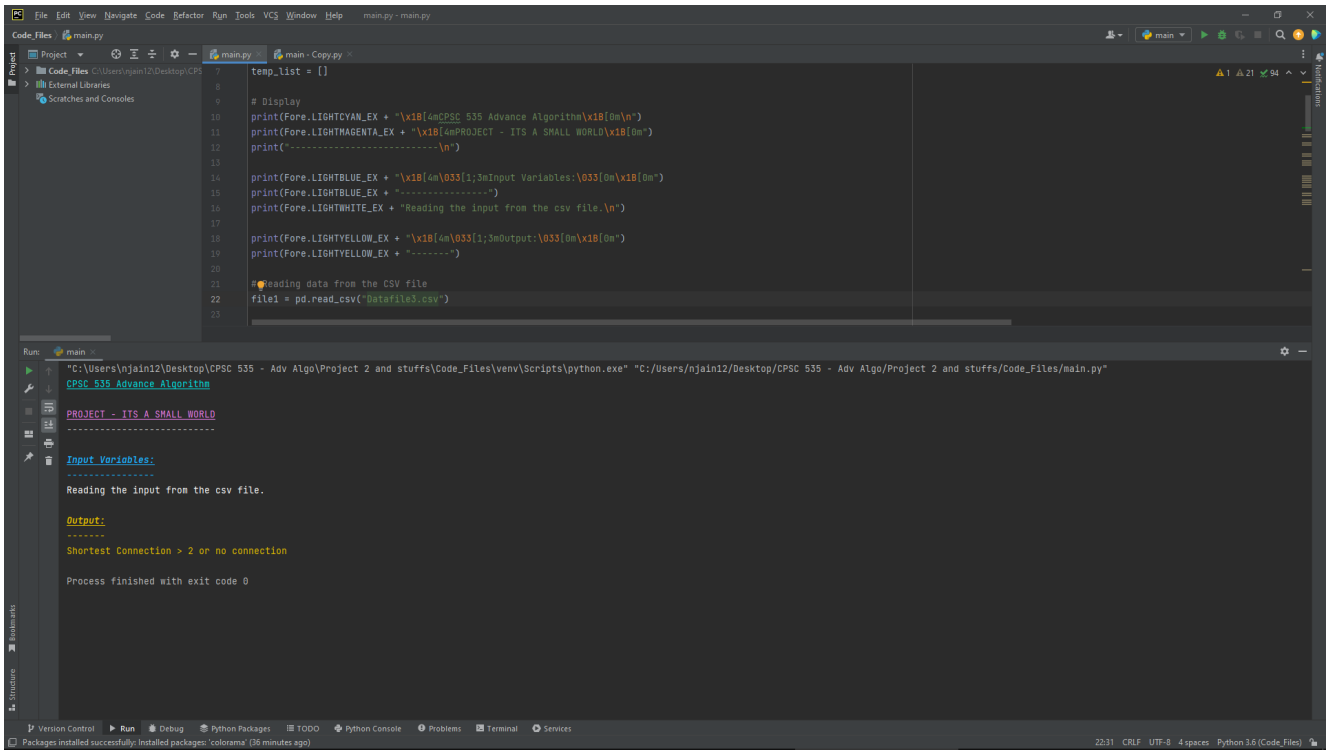
Sample Input 1: (DataFile1)



Sample Input 2: (DataFile2)



Sample Input 3: (DataFile3)



Sample Input 4: (DataFile4)