Handson_6_Template

April 7, 2025

1 Dictionaries

To submit this assignment in D2l, post the link to your notebook file on your GitHub account.

1.1 12.1 Champion Counter

Create a program that reads a text file that contains a list of FIFA World Cup champions and determines the country that has won the most championships.

1.1.1 Console:

```
Country         Wins    Years
=======         ====    =====
Argentina       2       1978, 1986
Brazil          5       1958, 1962, 1970, 1994, 2002
England         1       1966
France          1       1998
Germany         4       1954, 1974, 1990, 2014
Italy           4       1934, 1938, 1982, 2006
Spain           1       2010
Uruguay         2       1930, 1950
```

1.1.2 Specifications:

- Use the attached text file named `world_cup_champions.txt` that contains data like this:

```
Year,Country,Coach,Captain
1930,Uruguay,Alberto Suppici,José Nasazzi
1934,Italy,Vittorio Pozzo,Gianpiero Combi
1938,Italy,Vittorio Pozzo,Giuseppe Meazza
...
```

- When the program starts, it should read the text file and use a dictionary to store the required data using the name of each country that has won the World Cup as the key.
- The program should compile the data shown above and display the countries alphabetically.

[81]:
```python
### CODE HERE ###
import pandas as pd
def Print(List):
    for idx in range(len(List)):
```

```
        print(List[idx], end='')
        if idx != len(List) - 1:
            print(", ",end='')
info = pd.read_csv("world_cup_champions.txt",delimiter=",")
res = dict()
for idx,country in enumerate(info['Country']):
    if country in res:
        res[country].append(info['Year'].iloc[idx])
    else:
        res[country] = [info['Year'].iloc[idx]]
countries = list(sorted(res.keys()))
print("Country\t\tWins\tYears")
print("=======\t\t====\t=====")
for country in countries:
    print("%-16s%-8d"%(country, len(res[country])), end='')
    Print(res[country])
    print()
```

```
Country         Wins    Years
=======         ====    =====
Argentina       2       1978, 1986
Brazil          5       1958, 1962, 1970, 1994, 2002
England         1       1966
France          1       1998
Germany         4       1954, 1974, 1990, 2014
Italy           4       1934, 1938, 1982, 2006
Spain           1       2010
Uruguay         2       1930, 1950
```

1.2 12.2 Monthly Sales

Create a program that allows you to view and edit the sales amounts for each month of the current year.

1.2.1 Console:

```
Monthly Sales program

COMMAND MENU
view    - View sales for specified month
edit    - Edit sales for specified month
totals - View sales summary for year
exit    - Exit program

Command: view
Three-letter Month: jan
Sales amount for Jan is 14,317.00.
```

```
Command: edit
Three-letter Month: jan
Sales Amount: 15293
Sales amount for Jan is 15,293.00.

Command: totals
Yearly total: 67,855.00
Monthly average: 5,654.58

Command: view
Three-letter Month: july
Invalid three-letter month.

Command: exit Bye!
```

1.2.2 Specifications:

- Use the attached text file named `monthly_sales.txt` that consists of rows that contain three-letter abbreviations for the month and the monthly sales.
- The program should read the file and store the sales data for each month in a dictionary with the month abbreviation as the key for each item.
- Whenever the sales data is edited, the program should write the changed data to the text file.

[75]:
```
### CODE HERE ###
import pandas as pd
data = {
    'Month': ['Jul', 'Dec', 'May', 'Apr', 'Nov', 'Oct', 'Mar', 'Jan', 'Feb',␣
 ↪'Sep', 'Aug', 'Jun'],
    'Sales': [9762, 2497, 2429, 3463, 88, 6735, 1073, 14317, 4176, 2437, 15578,␣
 ↪4324]
}
df = pd.DataFrame(data)
df.to_csv('monthly_sales.txt', sep='\t', index=False, header = False)

print("Monthly Sales program")
print()
print("COMMAND MENU")
print("""view        - View sales for specified month
edit        - Edit sales for specified month
totals - View sales summary for year
exit        - Exit program""")
def edit(info):
    inp_month = input("Three-letter Month: ")
    inp_sales = float(input("Sales Amount: "))
    for idx in range(info.shape[0]):
        if info.iloc[idx,0] == inp_month.title():
            info.iloc[idx,1] = inp_sales
```

```
            print("Sales amount for %s is %.2f"%(info.iloc[idx,0],info.
 ↪iloc[idx,1]))
def view(info):
    inp_month = input("Three-letter Month: ")
    if inp_month.title() in info.iloc[:,0].values:
        for idx in range(info.shape[0]):
            if info.iloc[idx,0] == inp_month.title():
                print("Sales amount for %s is %.2f."%(info.iloc[idx,0],info.
 ↪iloc[idx,1]))
    else:
        print("Invalid three-letter month.")
def totals(info):
    Sum = 0
    for idx in range(info.shape[0]):
        Sum += float(info.iloc[idx,1])
    print("Yearly total: %.2f"%Sum)
    print("Monthly average: %.2f"%(Sum/12.0))

info = pd.read_csv("monthly_sales.txt",delimiter='\t',header=None)
while True:
    inp = input("\nCommand: ")
    if (inp == 'view'):
        view(info)
    if (inp == 'edit'):
        edit(info)
    if (inp == 'totals'):
        totals(info)
    if (inp == 'exit'):
        break

info.to_csv('monthly_sales.txt', sep='\t', index = False, header = False)
```

```
Monthly Sales program

COMMAND MENU
view    - View sales for specified month
edit    - Edit sales for specified month
totals - View sales summary for year
exit    - Exit program


Command:  view
Three-letter Month:  jan

Sales amount for Jan is 14317.00.


Command:  edit
Three-letter Month:  jan
```

```
Sales Amount:  15293

Sales amount for Jan is 15293.00


Command:  totals

Yearly total: 67855.00
Monthly average: 5654.58


Command:  view
Three-letter Month:  july

Invalid three-letter month.


Command:  exit
```

[ ]: