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17 May notebook commit 2

1b25d4e 7 days ago

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Problem Solving and Programming

Day No - 19

Date - 17 May 2019

Day Objectives

1. Objective 1
2. Objective 2
3. Objective 3

Problem 1 :

Problem Statement

Define a function to read from a CSV file using Pandas. Display the CSV file data as output.

Constraints

Test Cases

- Test Case 1
- Test Case 2
- Test Case 3

```
In [3]: import pandas as pd

def readCSV(filename):
    df = pd.read_csv(filename)
    return df

filename = 'DataFiles/Income.csv'
df = readCSV(filename)
#df.columns
#df.values[1]
#for row in df.values:
#    print('GeoID : ', row[0], 'State : ', row[1])

df.tail(5) # Retrieving the last 5 rows
df.head(2) # Retrieving the first 2 rows
df.iat[2, 0] # Accessing the 7th element in the 2nd row

#df = df.drop('Unnamed: 0.1', axis=1)
#df.to_csv('DataFiles/Income.csv', index=False)
df
```

```
Out[3]:
```

	GEOID	State	2005	2006	2007	2008	2009	2010	2011	2012	2013
0	04000US01	Alabama	37150	37952	42212	44476	39980	40933	42590	43464	41381
1	04000US02	Alaska	55891	56418	62993	63989	61604	57848	57431	63648	61137
2	04000US04	Arizona	45245	46657	47215	46914	45739	46896	48621	47044	50602
3	04000US05	Arkansas	36658	37057	40795	39586	36538	38587	41302	39018	39919
4	04000US06	California	51755	55319	55734	57014	56134	54283	53367	57020	57528

In []:

Problem 2 :

Problem Statement

Define a function to add new row data to a csv file

Constraints

Test Cases

- Test Case 1
- Test Case 2
- Test Case 3

```
In [14]: def addRowCSV(filename, rowdata):
         df = readCSV(filename) # Get dataframe from CSV
         df.loc[len(df)] = rowdata # Add a row to the dataframe
         df.to_csv(filename, index=False) # Send the dataframe back to CSV
         return df

rowdata = ['010101', 'statename', 123, 4325, 4565, 9084, 83123, 423, 987, 345, 765]
addRowCSV('DataFiles/Income.csv', rowdata)
```

Out[14]:

	GEOID	State	2005	2006	2007	2008	2009	2010	2011	2012	2013
0	04000US01	Alabama	37150	37952	42212	44476	39980	40933	42590	43464	41381
1	04000US02	Alaska	55891	56418	62993	63989	61604	57848	57431	63648	61137
2	04000US04	Arizona	45245	46657	47215	46914	45739	46896	48621	47044	50602
3	04000US05	Arkansas	36658	37057	40795	39586	36538	38587	41302	39018	39919
4	04000US06	California	51755	55319	55734	57014	56134	54283	53367	57020	57528
5	04000US07	Chicago	-999	-999	-999	-999	-999	-999	-999	-999	-999
6	04000US08	Florida	123	4325	4565	9084	83123	423	987	345	765
7	010101	statename	123	4325	4565	9084	83123	423	987	345	765

```
In [ ]:
```

Problem 3 :

Problem Statement

Define a function to update / modify a row in a CSV file

Constraints

Test Cases

- Test Case 1
- Test Case 2
- Test Case 3

```
In [17]: def updateRowCSV(filename, rowindex, rowdata):
         df = readCSV(filename)
         df.loc[rowindex] = rowdata
         df.to_csv(filename, index=False)
         return df

#df = df.drop('Unnamed: 0', axis=1)
#readCSV('DataFiles/Income.csv')
df
```

Out[17]:

	GEOID	State	2005	2006	2007	2008	2009	2010	2011	2012	2013
0	04000US01	Alabama	37150	37952	42212	44476	39980	40933	42590	43464	41381
1	04000US02	Alaska	55891	56418	62993	63989	61604	57848	57431	63648	61137
2	04000US04	Arizona	45245	46657	47215	46914	45739	46896	48621	47044	50602
3	04000US05	Arkansas	36658	37057	40795	39586	36538	38587	41302	39018	39919
4	04000US06	California	51755	55319	55734	57014	56134	54283	53367	57020	57528
5	04000US07	Chicago	-999	-999	-999	-999	-999	-999	-999	-999	-999
6	04000US08	Florida	123	4325	4565	9084	83123	423	987	345	765

```
In [19]: rowdata = ['04000US08', 'Florida', 123, 4325, 4565, 9084, 83123, 423, 987, 345, 765]
         updateRowCSV('DataFiles/Income.csv', 6, rowdata)
```

Out[19]:

	GEOID	State	2005	2006	2007	2008	2009	2010	2011	2012	2013
0	04000US01	Alabama	37150	37952	42212	44476	39980	40933	42590	43464	41381
1	04000US02	Alaska	55891	56418	62993	63989	61604	57848	57431	63648	61137
2	04000US04	Arizona	45245	46657	47215	46914	45739	46896	48621	47044	50602
3	04000US05	Arkansas	36658	37057	40795	39586	36538	38587	41302	39018	39919

3	04000US06	Arkansas	51755	55319	55734	57014	56134	54283	53367	57020	57528
4	04000US06	California	51755	55319	55734	57014	56134	54283	53367	57020	57528
5	04000US07	Chicago	-999	-999	-999	-999	-999	-999	-999	-999	-999
6	04000US08	Florida	123	4325	4565	9084	83123	423	987	345	765
7	010101	statename	123	4325	4565	9084	83123	423	987	345	765

In []:

Problem 4 :

Problem Statement

Define a function to delete a row from a CSV file

Constraints

Test Cases

- Test Case 1
- Test Case 2
- Test Case 3

In [1]:

```
def deleteRowCSV(filename, rowindex):  
    df = readCSV(filename)  
    df = df.drop(rowindex)  
    df.to_csv(filename, index=False)  
    return df  
#df = df.drop('Unnamed: 0', axis=1, inplace=True)  
#df.to_csv('DataFiles/Income.csv', index=False)
```

In [4]:

```
filename = 'DataFiles/Income.csv'  
rowindex = 5  
#deleteRowCSV(filename, rowindex)  
readCSV(filename)
```

Out[4]:

	GEOID	State	2005	2006	2007	2008	2009	2010	2011	2012	2013
0	04000US01	Alabama	37150	37952	42212	44476	39980	40933	42590	43464	41381
1	04000US02	Alaska	55891	56418	62993	63989	61604	57848	57431	63648	61137
2	04000US04	Arizona	45245	46657	47215	46914	45739	46896	48621	47044	50602
3	04000US05	Arkansas	36658	37057	40795	39586	36538	38587	41302	39018	39919
4	04000US06	California	51755	55319	55734	57014	56134	54283	53367	57020	57528

In []:

Problem 5 :

Problem Statement

Generate marks of 2000 students in a CSV file with columns ROIINO, MARKS

2210310001 ... 2210312000
221710400001 221710402000

Constraints

Test Cases

- Test Case 1
- Test Case 2
- Test Case 3