




Pandas Activity

- Brian Abramian



Uploading Dataset to Colab

```
[ ] # Uploading dataset to Colab  
    from google.colab import files  
    uploaded = files.upload()
```

 Upload widget is only available when the cell has been executed in the current browser session. Please rerun this cell to enable.
Saving South_Carolina_State_Employee_Salary_Database (1).csv to South_Carolina_State_Employee_Salary_Database (1).csv



Storing the dataset as a Pandas Dataframe

```
[ ] import io
import pandas as pd
df = pd.read_csv(io.BytesIO(uploaded['South_Carolina_State_Employee_Salary_Database (1).csv']))
# Dataset is now stored in a Pandas Dataframe
```



Increasing size for Colab to display, then displaying first/last 50 rows

```
▶ # Increasing max columns to display more columns, and width to fit them on screen
pd.set_option('display.max_columns', 500)
pd.set_option('display.width', 1000)

# Printing first/Last 50 rows & elements in the database
print('First 50 rows are:\n', df.head(50))
print('Last 50 rows are:\n', df.tail(50))
```

First 50 rows

First 50 rows are:

	Agency	First	Middle	Last	Title	Base Salary	Other Compensation	Total Compensation
0	UNIVERSITY OF SOUTH CAROLINA	D.	NAN	TANNER	ATHLETICS DIRECTOR	525000.0	0.0	525000.0
1	MEDICAL UNIVERSITY OF SC	LISA	NAN	MONTGOMERY	VICE PRESIDENT	405313.0	0.0	405313.0
2	UNIVERSITY OF SOUTH CAROLINA	JAY	NAN	MOSKOWITZ	PROFESSOR	402999.0	0.0	402999.0
3	UNIVERSITY OF CHARLESTON	FREDERICK	NAN	WOJCIK	ATHLETICS COACH	400000.0	0.0	400000.0
4	UNIVERSITY OF SOUTH CAROLINA	MARTIN	NAN	MORAD	PROFESSOR	384911.0	0.0	384911.0
5	CLEMSON UNIVERSITY	JAMES	NAN	BOTTUM	VICE PROVOST	373035.0	0.0	373035.0
6	UNIVERSITY OF SOUTH CAROLINA	PRAKASH	NAN	NAGARKATTI	VICE PRESIDENT	357980.0	0.0	357980.0
7	UNIVERSITY OF SOUTH CAROLINA	STEPHEN	NAN	SPURRIER	ATHLETICS COACH	350000.0	0.0	350000.0
8	UNIVERSITY OF SOUTH CAROLINA	DAWN	NAN	STALEY	ATHLETICS COACH	350000.0	0.0	350000.0
9	CLEMSON UNIVERSITY	BRETT	NAN	DALTON	VICE PRESIDENT	327761.0	0.0	327761.0
10	UNIVERSITY OF SOUTH CAROLINA	GEORGE	NAN	CHANDLER	DEAN	323459.0	0.0	323459.0
11	UNIVERSITY OF SOUTH CAROLINA	MEERA	NAN	NARASIMHAN	DEPARTMENT CHAIR/HEAD	319991.0	0.0	319991.0
12	UNIVERSITY OF SOUTH CAROLINA	MITZI	NAN	NAGARKATTI	DEPARTMENT CHAIR/HEAD	318913.0	0.0	318913.0
13	UNIVERSITY OF SOUTH CAROLINA	JERRY	NAN	YOUKEY	DEAN	310275.0	0.0	310275.0
14	UNIVERSITY OF SOUTH CAROLINA	MICHAEL	NAN	AMIRIDIS	PROVOST	317000.0	0.0	317000.0
15	MEDICAL UNIVERSITY OF SC	GAIL	NAN	STUART	DEAN	310977.0	0.0	310977.0
16	MEDICAL UNIVERSITY OF SC	FRANK	NAN	TREIBER	PROFESSOR	310977.0	0.0	310977.0
17	UNIVERSITY OF SOUTH CAROLINA	MARY ANNE	NAN	FITZPATRICK	DEAN	310897.0	0.0	310897.0
18	UNIVERSITY OF SOUTH CAROLINA	KENDALL	NAN	ROTH	ASSOCIATE DEAN	302616.0	0.0	302616.0
19	UNIVERSITY OF SOUTH CAROLINA	DAN	NAN	CACUCI	PROFESSOR	300968.0	0.0	300968.0
20	CLEMSON UNIVERSITY	DANIEL	NAN	RADAKOVICH	ACADEMIC PROGRAM DIRECTOR	300000.0	0.0	300000.0
21	UNIVERSITY OF SOUTH CAROLINA	JANCY	NAN	HOUCK	VICE PRESIDENT	300000.0	0.0	300000.0
22	UNIVERSITY OF SOUTH CAROLINA	FRANCISCO	NAN	MARTIN	ATHLETICS COACH	300000.0	0.0	300000.0
23	UNIVERSITY OF SOUTH CAROLINA	LORENZO	NAN	WARD	ATHLETICS COACH	300000.0	0.0	300000.0
24	RETIREMENT SYS INVESTMENT COMM	HERSHEL	NAN	HARPER	STAFF - RSIC	300000.0	300000.0	600000.0
25	MEDICAL UNIVERSITY OF SC	STEPHEN	NAN	LANIER	ASSISTANT PROFESSOR	295113.0	0.0	295113.0
26	UNIVERSITY OF SOUTH CAROLINA	ROBERT	NAN	SMITH	DEPARTMENT CHAIR/HEAD	295000.0	0.0	295000.0
27	MEDICAL UNIVERSITY OF SC	JOHN	NAN	SANDERS	DEAN	292892.0	0.0	292892.0
28	UNIVERSITY OF SOUTH CAROLINA	HARRIS	NAN	PASTIDES	AGENCY HEAD	286200.0	0.0	286200.0
29	CLEMSON UNIVERSITY	NADIM	NAN	AZIZ	ASSOCIATE PROVOST	285516.0	0.0	285516.0
30	CLEMSON UNIVERSITY	ANAND	NAN	GRANOPADHYE	DEAN	285000.0	0.0	285000.0
31	MEDICAL UNIVERSITY OF SC	DAVID	NAN	GARR	ASSOCIATE DEAN	283101.0	0.0	283101.0
32	MEDICAL UNIVERSITY OF SC	BRAD	NAN	NEVILLE	PROFESSOR	282699.0	0.0	282699.0
33	UNIVERSITY OF SOUTH CAROLINA	SOUVIZ	NAN	SEN	DEPARTMENT CHAIR/HEAD	282232.0	0.0	282232.0
34	UNIVERSITY OF SOUTH CAROLINA	RICHARD	NAN	HOPPMANN	PROFESSOR	282000.0	0.0	282000.0
35	MEDICAL UNIVERSITY OF SC	RICK	NAN	SCHNELLMANN	DEPARTMENT CHAIR/HEAD	280654.0	0.0	280654.0
36	UNIVERSITY OF SOUTH CAROLINA	EDWARD	NAN	WALTON	ASSOCIATE VICE PRESIDENT	279542.0	0.0	279542.0
37	UNIVERSITY OF SOUTH CAROLINA	WILLIAM	NAN	HOGUE	VICE PRESIDENT	277500.0	0.0	277500.0
38	UNIVERSITY OF SOUTH CAROLINA	CHRISTINE	NAN	CURTIS	VICE PROVOST	276443.0	0.0	276443.0
39	UNIVERSITY OF SOUTH CAROLINA	DAVID	NAN	OWEN	PROFESSOR	275679.0	0.0	275679.0
40	UNIVERSITY OF SOUTH CAROLINA	EDWIN	NAN	HOLBROOK	ATHLETICS COACH	275000.0	0.0	275000.0
41	MEDICAL UNIVERSITY OF SC	VICENT	NAN	PELLEGRINI	DEPARTMENT CHAIR/HEAD	275000.0	0.0	275000.0
42	CLEMSON UNIVERSITY	LAURENCE	NAN	ALLEN	DEAN	273115.0	0.0	273115.0
43	MEDICAL UNIVERSITY OF SC	DARLENE	NAN	SHAW	ASSOCIATE PROVOST	271335.0	0.0	271335.0
44	MEDICAL UNIVERSITY OF SC	MARK	NAN	SOTHMANN	VICE PRESIDENT	270266.0	0.0	270266.0
45	MEDICAL UNIVERSITY OF SC	YUKO	NAN	PALESCH	PROFESSOR	269403.0	0.0	269403.0
46	UNIVERSITY OF SOUTH CAROLINA	DENNIS	NAN	PRUITT	VICE PRESIDENT	267896.0	0.0	267896.0
47	UNIVERSITY OF SOUTH CAROLINA	ANTHONY	NAN	AMBLER	DEAN	267800.0	0.0	267800.0
48	CLEMSON UNIVERSITY	JOHN	NAN	KELLY	PROFESSOR	266612.0	0.0	266612.0
49	CLEMSON UNIVERSITY	R LARRY	NAN	DOOLEY	ASSOCIATE DEAN	265571.0	0.0	265571.0

Last 50 rows

Last 50 rows are:									
	Agency	First	Middle	Last	Title	Base Salary	Other Compensation	Total Compensation	
17377	CENTRAL CAROLINA TECH COLLEGE	SHIJUAN	NAN	MCINNEY	INSTRUCTOR	50000.0	0.0	50000.0	
17378	TRI-COUNTY TECHNICAL COLLEGE	PAMELA	NAN	MCWHORTER	APPLICATIONS ANALYST II	50000.0	0.0	50000.0	
17379	WILLIAMSBURG TECHNICAL COLLEGE	JAMES	NAN	MYERS	CURRICULUM COORDINATOR II	50000.0	0.0	50000.0	
17380	DEPT OF HEALTH AND ENV CONTROL	SHANIQUEA	NAN	ALSTON	REGISTERED NURSE II	50000.0	0.0	50000.0	
17381	DEPT OF HEALTH AND ENV CONTROL	MILISSA	NAN	BARTON	REGISTERED NURSE II	50000.0	0.0	50000.0	
17382	BUDGET AND CONTROL BOARD	GEORGE	NAN	BLACK	INFO RESOURCE CONSULTANT II	50000.0	0.0	50000.0	
17383	DEPARTMENT OF MENTAL HEALTH	ALAN	NAN	BLAKE	HUMAN SERVICES COORDINATOR II	50000.0	0.0	50000.0	
17384	DEPT OF HEALTH AND ENV CONTROL	MELINDA	NAN	BOATWRIGHT	ACCOUNTANT/FISCAL ANALYST III	50000.0	0.0	50000.0	
17385	COMMISSION FOR THE BLIND	DONALD	NAN	BRADLEY	HUMAN SERVICES COORDINATOR I	50000.0	0.0	50000.0	
17386	ATTORNEY GENERAL'S OFFICE	HARRISON	NAN	BRANT	ATTORNEY I	50000.0	0.0	50000.0	
17387	BUDGET AND CONTROL BOARD	CHARLES	NAN	CARSON	ENG/ASSOC ENG II	50000.0	0.0	50000.0	
17388	DEPARTMENT OF SOCIAL SERVICES	KENNETH	NAN	CARTER	PROGRAM MANAGER I	50000.0	0.0	50000.0	
17389	DEPT OF HEALTH AND ENV CONTROL	KERRY	NAN	CHANDLER	REGISTERED NURSE II	50000.0	0.0	50000.0	
17390	DEPARTMENT OF EDUCATION	TONYA	NAN	CREAHER	EDUCATION ASSOCIATE	50000.0	0.0	50000.0	
17391	PUBLIC EMPLOYEE BENEFITS AUTH	MATTHEW	NAN	DAVIS	ACCOUNTING/FISCAL MANAGER I	50000.0	0.0	50000.0	
17392	COMMISSION ON MINORITY AFFAIRS	GEORGE	NAN	DENNIS	PROGRAM COORDINATOR II	50000.0	0.0	50000.0	
17393	DEPT OF HEALTH AND ENV CONTROL	DEBORAH	NAN	DERRICK	PROGRAM COORDINATOR I	50000.0	0.0	50000.0	
17394	TEC & COMPREHENSIVE EDUC BOARD	SAMANTHA	NAN	EASTMAN	CURRICULUM COORDINATOR II	50000.0	0.0	50000.0	
17395	ATTORNEY GENERAL'S OFFICE	ANITA	NAN	FAIR	ATTORNEY II	50000.0	0.0	50000.0	
17396	DEPT OF HEALTH AND ENV CONTROL	SHAMINA	NAN	FOX	REGISTERED NURSE II	50000.0	0.0	50000.0	
17397	DEPT OF HEALTH AND HUMAN SVCS	HOLLY	NAN	FURNE	REGISTERED NURSE II	50000.0	0.0	50000.0	
17398	DEPT OF HEALTH AND ENV CONTROL	DEBORAH	NAN	GILCREASE	REGISTERED NURSE I	50000.0	0.0	50000.0	
17399	DEPT OF DISABILITIES&SPEC NEED	ANGELIA	NAN	HALL	REGISTERED NURSE II	50000.0	0.0	50000.0	
17400	DEPT OF HEALTH AND ENV CONTROL	SHANNON	NAN	HORTON	REGISTERED NURSE II	50000.0	0.0	50000.0	
17401	OFFICE OF THE COMPTROLLER	ALLISON	NAN	HOUP	ACCOUNTING/FISCAL MANAGER I	50000.0	0.0	50000.0	
17402	TEC & COMPREHENSIVE EDUC BOARD	DEBRA	NAN	HUDSON	PROGRAM COORDINATOR II	50000.0	0.0	50000.0	
17403	DEPT OF HEALTH AND ENV CONTROL	DEANNA	NAN	JENNINGS	REGISTERED NURSE II	50000.0	0.0	50000.0	
17404	DEPT OF HEALTH AND ENV CONTROL	DARA	NAN	JOHNSON	REGISTERED NURSE II	50000.0	0.0	50000.0	
17405	DEPARTMENT OF SOCIAL SERVICES	DOROTHY	NAN	KIRKLAND	ATTORNEY II	50000.0	0.0	50000.0	
17406	TEC & COMPREHENSIVE EDUC BOARD	TERESA	NAN	LIVINGSTON	PROCUREMENT MANAGER I	50000.0	0.0	50000.0	
17407	SC DEPT JUVENILE JUSTICE	JENNIFER	NAN	LOSCHIAVO	PROGRAM MANAGER I	50000.0	0.0	50000.0	
17408	DEPARTMENT OF EDUCATION	DAVID	NAN	MATTHEWS	INFO RESOURCE CONSULTANT I	50000.0	0.0	50000.0	
17409	ATTORNEY GENERAL'S OFFICE	BRENDAN	NAN	MCDONALD	ATTORNEY II	50000.0	0.0	50000.0	
17410	ATTORNEY GENERAL'S OFFICE	ASHLEY	NAN	MCMAHAN	ATTORNEY II	50000.0	1000.0	51000.0	
17411	DEPT OF HEALTH AND HUMAN SVCS	TRISTON	NAN	MKUTATITIS	SENIOR INFORMATION RESO CONLT	50000.0	0.0	50000.0	
17412	DEPARTMENT OF MENTAL HEALTH	LAKRMI	NAN	ODOM	REGISTERED NURSE II	50000.0	0.0	50000.0	
17413	DEPARTMENT OF PUBLIC SAFETY	MATTHEW	NAN	POTTER	INFORMATION TECHNOLOGY MGR I	50000.0	0.0	50000.0	
17414	DEPARTMENT OF MENTAL HEALTH	CHERYL	NAN	RANDALL	REGISTERED NURSE II	50000.0	0.0	50000.0	
17415	DEPARTMENT OF SOCIAL SERVICES	DONELLA	NAN	ROBINSON	PROGRAM MANAGER I	50000.0	0.0	50000.0	
17416	DEPT OF HEALTH AND ENV CONTROL	LENECIA	NAN	ROSS	REGISTERED NURSE II	50000.0	0.0	50000.0	
17417	DEPT OF HEALTH AND ENV CONTROL	BETSY	NAN	SALCEDO	REGISTERED NURSE II	50000.0	0.0	50000.0	
17418	DEPT OF HEALTH AND ENV CONTROL	LAURIE	NAN	SCOTT	REGISTERED NURSE II	50000.0	0.0	50000.0	
17419	DEPARTMENT OF EDUCATION	WILLIAM	NAN	SCOTT	CERTIFIED TEACHER	50000.0	0.0	50000.0	
17420	BUDGET AND CONTROL BOARD	ROBERT	NAN	SMIKINS	ENG/ASSOC ENG II	50000.0	0.0	50000.0	
17421	DEPT OF HEALTH AND ENV CONTROL	CHARNECIA	NAN	TYLER	PROGRAM COORDINATOR II	50000.0	0.0	50000.0	
17422	DEPARTMENT OF EDUCATION	CHRISTINA	NAN	WALKER	PROGRAM COORDINATOR I	50000.0	0.0	50000.0	
17423	DEPARTMENT OF EDUCATION	STEPHANIE	NAN	WALTERS	CERTIFIED TEACHER	50000.0	0.0	50000.0	
17424	DEPT OF HEALTH AND ENV CONTROL	KRISTY	NAN	WAY	REGISTERED NURSE II	50000.0	0.0	50000.0	
17425	DEPT OF HEALTH AND ENV CONTROL	REGAN	NAN	WILKIE	REGISTERED NURSE II	50000.0	0.0	50000.0	
17426	ADJUTANT GENERALS OFFICE	CHRISTOPHER	NAN	ZIMMERMAN	SENIOR INFORMATION RESO CONLT	50000.0	0.0	50000.0	



Printing all df methods on each numerical column


```
# Describe prints all df methods in proper format  
print(df.describe())
```

	Middle	Base Salary	Other Compensation	Total Compensation
count	0.0	17427.000000	17427.000000	17427.000000
mean	NaN	77227.392265	85.376026	77312.768291
std	NaN	33328.689386	3489.380302	33749.469068
min	NaN	50000.000000	0.000000	50000.000000
25%	NaN	56253.500000	0.000000	56258.000000
50%	NaN	66064.000000	0.000000	66079.000000
75%	NaN	85208.000000	0.000000	85238.500000
max	NaN	525000.000000	300000.000000	600000.000000

```
# Creating a subset of rows, then displaying the first ten rows
subsetR_df = df[145:518:3]
print('First ten rows of the subset:\n', subsetR_df.head(10))
```

First ten rows of the subset:

	Agency	First	Middle	Last	Title	Base Salary	Other Compensation	Total Compensation
145	UNIVERSITY OF SOUTH CAROLINA	DEMETRIUS	NaN	ADAMS	ATHLETICS COACH	225000.0	0.0	225000.0
148	UNIVERSITY OF SOUTH CAROLINA	JEAN	NaN	HELWEGE	PROFESSOR	222480.0	0.0	222480.0
151	UNIVERSITY OF SOUTH CAROLINA	BRIAN	NaN	MIHALIK	DEAN	221450.0	0.0	221450.0
154	UNIVERSITY OF CHARLESTON	STEPHEN	NaN	OSBORNE	SENIOR VICE PRESIDENT	220317.0	0.0	220317.0
157	UNIVERSITY OF SOUTH CAROLINA	ANNA	NaN	SCHEYETT	DEAN	220000.0	0.0	220000.0
160	UNIVERSITY OF SOUTH CAROLINA	HELMUT	NaN	ALBRECHT	CLINICAL PROFESSOR	217734.0	0.0	217734.0
163	MEDICAL UNIVERSITY OF SC	MARC	NaN	CHIMOWITZ	PROFESSOR	216300.0	0.0	216300.0
166	UNIVERSITY OF SOUTH CAROLINA	LESLIE	NaN	STERNBERG	PROFESSOR	215284.0	0.0	215284.0
169	MEDICAL UNIVERSITY OF SC	ROBERT	NaN	ADAMS	PROFESSOR	215012.0	0.0	215012.0
172	UNIVERSITY OF SOUTH CAROLINA	THOMAS	NaN	VOGT	PROFESSOR	214357.0	0.0	214357.0



```
# Creating a subset of columns, then displaying the first ten rows of that subset
subsetC_temp = df.loc[:, 'First':'Base Salary':2]
print('First ten rows of the column Subset:\n', subsetC_temp.head(10))
```

First ten rows of the column Subset:

	First	Last	Base Salary
0	D.	TANNER	525000.0
1	LISA	MONTGOMERY	405313.0
2	JAY	MOSKOWITZ	402999.0
3	FREDERICK	WOJCIK	400000.0
4	MARTIN	MORAD	384911.0
5	JAMES	BOTTUM	373035.0
6	PRAKASH	NAGARKATTI	357980.0
7	STEPHEN	SPURRIER	350000.0
8	DAWN	STALEY	350000.0
9	BRETT	DALTON	327761.0

```
# Filtering out all rows with title "Professor", then displaying first 10 rows
df = df[df['Title'] != 'PROFESSOR']
print('No professors: \n', df.head(50))
```

No professors:

	Agency	First	Middle	Last	Title	Base Salary	Other Compensation	Total Compensation
0	UNIVERSITY OF SOUTH CAROLINA	D.	NAN	TANNER	ATHLETICS DIRECTOR	525000.0	0.0	525000.0
1	MEDICAL UNIVERSITY OF SC	LISA	NAN	MONTGOMERY	VICE PRESIDENT	405313.0	0.0	405313.0
3	UNIVERSITY OF CHARLESTON	FREDERICK	NAN	WOJCIK	ATHLETICS COACH	400000.0	0.0	400000.0
5	CLEMSON UNIVERSITY	JAMES	NAN	BOTTOM	VICE PROVOST	373035.0	0.0	373035.0
6	UNIVERSITY OF SOUTH CAROLINA	PRAKASH	NAN	NAGARKATTI	VICE PRESIDENT	357980.0	0.0	357980.0
7	UNIVERSITY OF SOUTH CAROLINA	STEPHEN	NAN	SPURRIER	ATHLETICS COACH	350000.0	0.0	350000.0
8	UNIVERSITY OF SOUTH CAROLINA	DAWN	NAN	STALEY	ATHLETICS COACH	350000.0	0.0	350000.0
9	CLEMSON UNIVERSITY	BRETT	NAN	DALTON	VICE PRESIDENT	327761.0	0.0	327761.0
10	UNIVERSITY OF SOUTH CAROLINA	GEORGE	NAN	CHANDLER	DEAN	323459.0	0.0	323459.0
11	UNIVERSITY OF SOUTH CAROLINA	MEERA	NAN	NARASIMHAN	DEPARTMENT CHAIR/HEAD	319991.0	0.0	319991.0
12	UNIVERSITY OF SOUTH CAROLINA	MITZI	NAN	NAGARKATTI	DEPARTMENT CHAIR/HEAD	318913.0	0.0	318913.0
13	UNIVERSITY OF SOUTH CAROLINA	JERRY	NAN	YOUKEY	DEAN	318275.0	0.0	318275.0
14	UNIVERSITY OF SOUTH CAROLINA	MICHAEL	NAN	AMIRIDIS	PROVOST	317800.0	0.0	317800.0
15	MEDICAL UNIVERSITY OF SC	GAIL	NAN	STUART	DEAN	310977.0	0.0	310977.0
17	UNIVERSITY OF SOUTH CAROLINA	MARY ANNE	NAN	FITZPATRICK	DEAN	310897.0	0.0	310897.0
18	UNIVERSITY OF SOUTH CAROLINA	KENDALL	NAN	ROTH	ASSOCIATE DEAN	302616.0	0.0	302616.0
20	CLEMSON UNIVERSITY	DANIEL	NAN	RADAKOVICH	ACADEMIC PROGRAM DIRECTOR	300000.0	0.0	300000.0
21	UNIVERSITY OF SOUTH CAROLINA	JANCY	NAN	HOUCK	VICE PRESIDENT	300000.0	0.0	300000.0
22	UNIVERSITY OF SOUTH CAROLINA	FRANCISCO	NAN	MARTIN	ATHLETICS COACH	300000.0	0.0	300000.0
23	UNIVERSITY OF SOUTH CAROLINA	LORENZO	NAN	WARD	ATHLETICS COACH	300000.0	0.0	300000.0
24	RETIREMENT SYS INVESTMENT COMM	HERSHEL	NAN	HARPER	STAFF - RSIC	300000.0	300000.0	600000.0
25	MEDICAL UNIVERSITY OF SC	STEPHEN	NAN	LANIER	ASSISTANT PROFESSOR	295113.0	0.0	295113.0
26	UNIVERSITY OF SOUTH CAROLINA	ROBERT	NAN	SMITH	DEPARTMENT CHAIR/HEAD	295000.0	0.0	295000.0
27	MEDICAL UNIVERSITY OF SC	JOHN	NAN	SAUNDERS	DEAN	292892.0	0.0	292892.0
28	UNIVERSITY OF SOUTH CAROLINA	HARRIS	NAN	PASTIDES	AGENCY HEAD	286200.0	0.0	286200.0
29	CLEMSON UNIVERSITY	NADIM	NAN	AZIZ	ASSOCIATE PROVOST	285516.0	0.0	285516.0
30	CLEMSON UNIVERSITY	ANAND	NAN	GRAMOPADHYE	DEAN	285000.0	0.0	285000.0
31	MEDICAL UNIVERSITY OF SC	DAVID	NAN	GARR	ASSOCIATE DEAN	283101.0	0.0	283101.0
33	UNIVERSITY OF SOUTH CAROLINA	SOUVIK	NAN	SEN	DEPARTMENT CHAIR/HEAD	282232.0	0.0	282232.0
35	MEDICAL UNIVERSITY OF SC	RICK	NAN	SCHNELLMANN	DEPARTMENT CHAIR/HEAD	280654.0	0.0	280654.0
36	UNIVERSITY OF SOUTH CAROLINA	EDWARD	NAN	WALTON	ASSOCIATE VICE PRESIDENT	279542.0	0.0	279542.0
37	UNIVERSITY OF SOUTH CAROLINA	WILLIAM	NAN	HOGUE	VICE PRESIDENT	277500.0	0.0	277500.0
38	UNIVERSITY OF SOUTH CAROLINA	CHRISTINE	NAN	CURTIS	VICE PROVOST	276443.0	0.0	276443.0
40	UNIVERSITY OF SOUTH CAROLINA	EDWIN	NAN	HOLBROOK	ATHLETICS COACH	275000.0	0.0	275000.0
41	MEDICAL UNIVERSITY OF SC	VICENT	NAN	PELLEGRINI	DEPARTMENT CHAIR/HEAD	275000.0	0.0	275000.0
42	CLEMSON UNIVERSITY	LAWRENCE	NAN	ALLEN	DEAN	273115.0	0.0	273115.0
43	MEDICAL UNIVERSITY OF SC	DARLENE	NAN	SHAW	ASSOCIATE PROVOST	271335.0	0.0	271335.0
44	MEDICAL UNIVERSITY OF SC	MARK	NAN	SOTHMANN	VICE PRESIDENT	270266.0	0.0	270266.0
46	UNIVERSITY OF SOUTH CAROLINA	DENNIS	NAN	PRUITT	VICE PRESIDENT	267896.0	0.0	267896.0
47	UNIVERSITY OF SOUTH CAROLINA	ANTHONY	NAN	AMBLER	DEAN	267800.0	0.0	267800.0
49	CLEMSON UNIVERSITY	R LARRY	NAN	DOOLEY	ASSOCIATE DEAN	265571.0	0.0	265571.0
50	CLEMSON UNIVERSITY	THOMAS	NAN	SCOTT	DEAN	262650.0	0.0	262650.0
54	MEDICAL UNIVERSITY OF SC	ELIZABETH	NAN	PILCHER	ASSOCIATE DEAN	258757.0	0.0	258757.0
55	UNIVERSITY OF SOUTH CAROLINA	WALTER	NAN	PARHAM	UNCLASSIFIED	258137.0	0.0	258137.0
58	CLEMSON UNIVERSITY	RICHARD	NAN	GOODSTEIN	DEAN	255126.0	0.0	255126.0
59	UNIVERSITY OF CHARLESTON	GEORGE	NAN	HYND	SENIOR VICE PRESIDENT	255000.0	0.0	255000.0
61	UNIVERSITY OF SOUTH CAROLINA	BRIAN	NAN	TOBIN	DEPARTMENT CHAIR/HEAD	254500.0	0.0	254500.0
62	UNIVERSITY OF SOUTH CAROLINA	HELEN	NAN	ZEIGLER	DIRECTOR/ADJUNCT FACULTY	254018.0	0.0	254018.0
64	CLEMSON UNIVERSITY	ROBERT	NAN	CALDWELL	ATHLETICS COACH	252350.0	0.0	252350.0
65	CLEMSON UNIVERSITY	BRADLEY	NAN	BROWNELL	ATHLETICS COACH	252350.0	0.0	252350.0



```
# Filtering out all rows with null value in a column, All rows have a null so they're all filtered out
df_temp = df[df.Middle.notnull()]
print('First ten not null:\n', df_temp.head(10))
```

First ten not null:

Empty DataFrame

Columns: [Agency, First, Middle, Last, Title, Base Salary, Other Compensation, Total Compensation]

Index: []

Prints first ten rows before and after adding 10% to base salary & Total compensation

```
# Printing first 10 rows
print('Before raises:\n', df.head(10),'\n\n')

# Adding 10% to each salary and compensation for everyone, then printing first 10 rows
df['Base Salary'] += (df['Base Salary'] * .1)
df['Total Compensation'] += (df['Total Compensation'] * .1)

print('Raised salaries:\n', df.head(10))
```

Before raises:

	Agency	First	Middle	Last	Title	Base Salary	Other Compensation	Total Compensation
0	UNIVERSITY OF SOUTH CAROLINA	D.	NaN	TANNER	ATHLETICS DIRECTOR	525000.0	0.0	525000.0
1	MEDICAL UNIVERSITY OF SC	LISA	NaN	MONTGOMERY	VICE PRESIDENT	405313.0	0.0	405313.0
3	UNIVERSITY OF CHARLESTON	FREDERICK	NaN	WOJCIK	ATHLETICS COACH	400000.0	0.0	400000.0
5	CLEMSON UNIVERSITY	JAMES	NaN	BOTTUM	VICE PROVOST	373035.0	0.0	373035.0
6	UNIVERSITY OF SOUTH CAROLINA	PRAKASH	NaN	NAGARKATTI	VICE PRESIDENT	357980.0	0.0	357980.0
7	UNIVERSITY OF SOUTH CAROLINA	STEPHEN	NaN	SPURRIER	ATHLETICS COACH	350000.0	0.0	350000.0
8	UNIVERSITY OF SOUTH CAROLINA	DAWN	NaN	STALEY	ATHLETICS COACH	350000.0	0.0	350000.0
9	CLEMSON UNIVERSITY	BRETT	NaN	DALTON	VICE PRESIDENT	327761.0	0.0	327761.0
10	UNIVERSITY OF SOUTH CAROLINA	GEORGE	NaN	CHANDLER	DEAN	323459.0	0.0	323459.0
11	UNIVERSITY OF SOUTH CAROLINA	MEERA	NaN	NARASIMHAN	DEPARTMENT CHAIR/HEAD	319991.0	0.0	319991.0

Raised salaries:

	Agency	First	Middle	Last	Title	Base Salary	Other Compensation	Total Compensation
0	UNIVERSITY OF SOUTH CAROLINA	D.	NaN	TANNER	ATHLETICS DIRECTOR	577500.0	0.0	577500.0
1	MEDICAL UNIVERSITY OF SC	LISA	NaN	MONTGOMERY	VICE PRESIDENT	445844.3	0.0	445844.3
3	UNIVERSITY OF CHARLESTON	FREDERICK	NaN	WOJCIK	ATHLETICS COACH	440000.0	0.0	440000.0
5	CLEMSON UNIVERSITY	JAMES	NaN	BOTTUM	VICE PROVOST	410338.5	0.0	410338.5
6	UNIVERSITY OF SOUTH CAROLINA	PRAKASH	NaN	NAGARKATTI	VICE PRESIDENT	393778.0	0.0	393778.0
7	UNIVERSITY OF SOUTH CAROLINA	STEPHEN	NaN	SPURRIER	ATHLETICS COACH	385000.0	0.0	385000.0
8	UNIVERSITY OF SOUTH CAROLINA	DAWN	NaN	STALEY	ATHLETICS COACH	385000.0	0.0	385000.0
9	CLEMSON UNIVERSITY	BRETT	NaN	DALTON	VICE PRESIDENT	360537.1	0.0	360537.1
10	UNIVERSITY OF SOUTH CAROLINA	GEORGE	NaN	CHANDLER	DEAN	355804.9	0.0	355804.9
11	UNIVERSITY OF SOUTH CAROLINA	MEERA	NaN	NARASIMHAN	DEPARTMENT CHAIR/HEAD	351990.1	0.0	351990.1



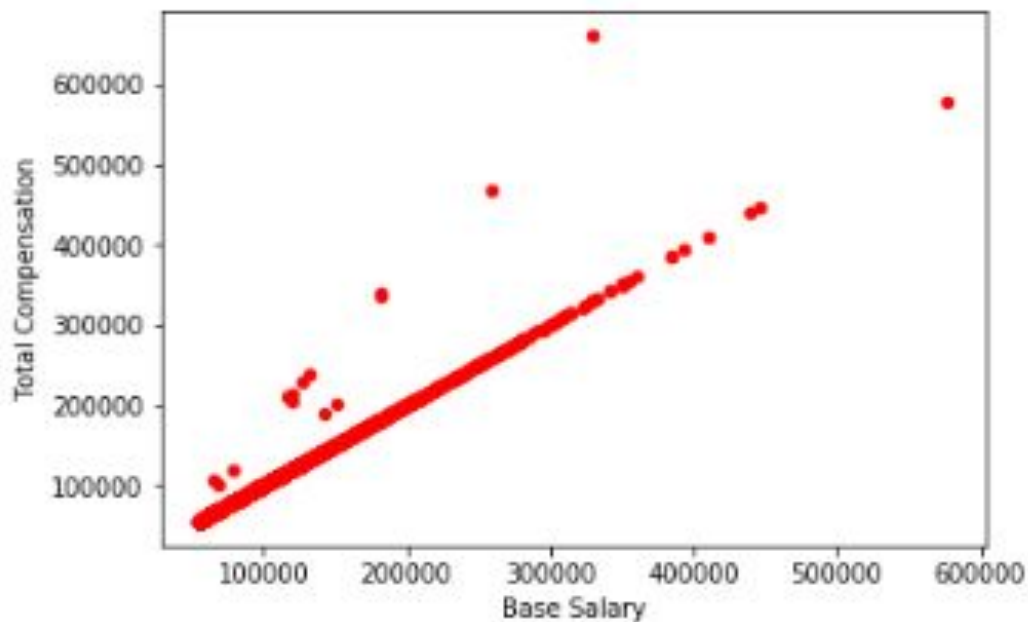
Sorted ascending	Agency	First	Middle	Last	Title	Base Salary	Other Compensation	Total Compensation
17426	ADJUTANT GENERALS OFFICE	CHRISTOPHER	NAN	ZIMMERMAN	SENIOR INFORMATION RESO CNLT	55000.0	0.0	55000.0
17321	UNIVERSITY OF SOUTH CAROLINA	BRYAN	NAN	LEWALYN	ATHLETICS COACH	55000.0	0.0	55000.0
17320	UNIVERSITY OF SOUTH CAROLINA	JOYCE	NAN	GOSSARD	INSTRUCTOR	55000.0	0.0	55000.0
17319	UNIVERSITY OF SOUTH CAROLINA	TROY	NAN	WILSON	ASSISTANT PROFESSOR	55000.0	0.0	55000.0
17318	UNIVERSITY OF SOUTH CAROLINA	CHRISTOPHER	NAN	LEACH	SYSTEMS PROGRAMMER I	55000.0	0.0	55000.0
17317	UNIVERSITY OF SOUTH CAROLINA	WRIGHT	NAN	CULPEPPER	PROGRAM MANAGER I	55000.0	0.0	55000.0
17316	UNIVERSITY OF SOUTH CAROLINA	NICHOLAS	NAN	ELZY	TRAINING & DEVELOPMENT DIR I	55000.0	0.0	55000.0
17315	UNIVERSITY OF SOUTH CAROLINA	DAVID	NAN	JACKSON	ACCOUNTANT/FISCAL ANALYST II	55000.0	0.0	55000.0
17322	UNIVERSITY OF SOUTH CAROLINA	KELLY	NAN	WILSON	INSTRUCTOR	55000.0	0.0	55000.0
17314	UNIVERSITY OF SOUTH CAROLINA	TRACY	NAN	JORDAHL	ADMINISTRATIVE COORDINATOR II	55000.0	0.0	55000.0
17312	UNIVERSITY OF SOUTH CAROLINA	EMILY	NAN	FEENEY-MOLINARY	PUBLIC INFORMATION DIRECTOR I	55000.0	0.0	55000.0
17311	UNIVERSITY OF SOUTH CAROLINA	RHONDA	NAN	DINOVO	STUDENT SVCS PROG COORD II	55000.0	0.0	55000.0
17310	UNIVERSITY OF SOUTH CAROLINA	FRANCES	NAN	BRIDGER	STUDENT SERVICES MANAGER I	55000.0	0.0	55000.0
17309	UNIVERSITY OF SOUTH CAROLINA	DEBORAH	NAN	KING	ADMINISTRATIVE COORDINATOR II	55000.0	0.0	55000.0
17308	UNIVERSITY OF SOUTH CAROLINA	LAURIE	NAN	BARNHILL	INFO RESOURCE CONSULTANT II	55000.0	0.0	55000.0
17307	UNIVERSITY OF SOUTH CAROLINA	HANNAH	NAN	TERPACK	STUDENT SVCS PROG COORD II	55000.0	0.0	55000.0
17306	SOUTH CAROLINA STATE UNIV	KEVIN	NAN	SPENCER	ATHLETICS COACH	55000.0	0.0	55000.0
17313	UNIVERSITY OF SOUTH CAROLINA	SAVILLA	NAN	JENNY	ALUMN/DEVELOPMENT COORD II	55000.0	0.0	55000.0
17305	SOUTH CAROLINA STATE UNIV	MERNARD	NAN	CLARKSON	LAW ENFORCEMENT OFFICER I	55000.0	0.0	55000.0
17323	UNIVERSITY OF SOUTH CAROLINA	KELA	NAN	GOODMAN	ASSISTANT PROFESSOR	55000.0	0.0	55000.0
17325	UNIVERSITY OF SOUTH CAROLINA	JESSE	NAN	JONES	ASSISTANT PROFESSOR	55000.0	0.0	55000.0
17341	UNIVERSITY OF SOUTH CAROLINA	LAURA	NAN	SWATH	ASSISTANT PROFESSOR	55000.0	0.0	55000.0
17340	UNIVERSITY OF SOUTH CAROLINA	ELIZABETH	NAN	GEORGIAN	ASSISTANT PROFESSOR	55000.0	0.0	55000.0
17339	UNIVERSITY OF SOUTH CAROLINA	VIROGINIA	NAN	WEBB	ASSISTANT PROFESSOR	55000.0	0.0	55000.0
17338	UNIVERSITY OF SOUTH CAROLINA	LINDSAY	NAN	YEARTA	ASSISTANT PROFESSOR	55000.0	0.0	55000.0
17337	UNIVERSITY OF SOUTH CAROLINA	KURT	NAN	GLEICHAUF	LECTURER	55000.0	0.0	55000.0
17336	UNIVERSITY OF SOUTH CAROLINA	KELLY	NAN	GIBSON	POST DOCTORAL FELLOW	55000.0	0.0	55000.0
17335	UNIVERSITY OF SOUTH CAROLINA	DOUGLAS	NAN	EDWARDS	ATHLETICS ADMINISTRATOR	55000.0	0.0	55000.0
17324	UNIVERSITY OF SOUTH CAROLINA	WILLIAM	NAN	DEMOE	VISITING ASSISTANT PROFESSOR	55000.0	0.0	55000.0
17334	UNIVERSITY OF SOUTH CAROLINA	MEAGHAN	NAN	DWYER-RYAN	ASSISTANT PROFESSOR	55000.0	0.0	55000.0
...
30	CLEMSON UNIVERSITY	ANAND	NAN	GRAMOPADHYE	DEAN	313500.0	0.0	313500.0
29	CLEMSON UNIVERSITY	NADIM	NAN	AZIZ	ASSOCIATE PROVOST	314067.6	0.0	314067.6
28	UNIVERSITY OF SOUTH CAROLINA	HARRIS	NAN	PASTIDES	AGENCY HEAD	314820.0	0.0	314820.0
27	MEDICAL UNIVERSITY OF SC	JOHN	NAN	SANDERS	DEAN	322181.2	0.0	322181.2
26	UNIVERSITY OF SOUTH CAROLINA	ROBERT	NAN	ROBERT	DEPARTMENT CHAIR/HEAD	324500.0	0.0	324500.0
25	MEDICAL UNIVERSITY OF SC	STEPHEN	NAN	LANIER	ASSISTANT PROFESSOR	324624.3	0.0	324624.3
20	CLEMSON UNIVERSITY	DANIEL	NAN	RADAKOVICH	ACADEMIC PROGRAM DIRECTOR	330000.0	0.0	330000.0
23	UNIVERSITY OF SOUTH CAROLINA	LORENZO	NAN	WARD	ATHLETICS COACH	330000.0	0.0	330000.0
21	UNIVERSITY OF SOUTH CAROLINA	JANCY	NAN	HOUCK	VICE PRESIDENT	330000.0	0.0	330000.0
22	UNIVERSITY OF SOUTH CAROLINA	FRANCISCO	NAN	MARTIN	ATHLETICS COACH	330000.0	0.0	330000.0
18	UNIVERSITY OF SOUTH CAROLINA	KENDALL	NAN	ROTH	ASSOCIATE DEAN	332877.6	0.0	332877.6
532	RETIREMENT SYS INVESTMENT COMM	GEOFFREY	NAN	BERG	STAFF - RSIC	181500.0	140000.0	335500.0
533	RETIREMENT SYS INVESTMENT COMM	DAVID	NAN	KLAUKA	STAFF - RSIC	181500.0	144200.0	340120.0
17	UNIVERSITY OF SOUTH CAROLINA	MARY ANNE	NAN	FITZPATRICK	DEAN	341986.7	0.0	341986.7
15	MEDICAL UNIVERSITY OF SC	GAIL	NAN	STUART	DEAN	342074.7	0.0	342074.7
14	UNIVERSITY OF SOUTH CAROLINA	MICHAEL	NAN	AMIRIDIS	PROVOST	349500.0	0.0	349500.0
13	UNIVERSITY OF SOUTH CAROLINA	JERRY	NAN	YOUKEY	DEAN	350102.5	0.0	350102.5
12	UNIVERSITY OF SOUTH CAROLINA	MITZI	NAN	NAGARKATTI	DEPARTMENT CHAIR/HEAD	350004.3	0.0	350004.3
11	UNIVERSITY OF SOUTH CAROLINA	NARASIMHAN	NAN	NARASIMHAN	DEPARTMENT CHAIR/HEAD	351990.1	0.0	351990.1
10	UNIVERSITY OF SOUTH CAROLINA	GEORGE	NAN	CHANDLER	DEAN	355004.9	0.0	355004.9
9	CLEMSON UNIVERSITY	BRETT	NAN	DALTON	VICE PRESIDENT	360537.1	0.0	360537.1
8	UNIVERSITY OF SOUTH CAROLINA	DAWN	NAN	STALEY	ATHLETICS COACH	385000.0	0.0	385000.0
7	UNIVERSITY OF SOUTH CAROLINA	STEPHEN	NAN	SPURRIER	ATHLETICS COACH	385000.0	0.0	385000.0
6	UNIVERSITY OF SOUTH CAROLINA	PRAKASH	NAN	NAGARKATTI	VICE PRESIDENT	393778.0	0.0	393778.0
5	CLEMSON UNIVERSITY	JAMES	NAN	BOTTOM	VICE PROVOST	410338.5	0.0	410338.5


```
# Printing rows grouped by the mean of the Title column
group = df.groupby(['Title']).mean()
print('Mean of titles:\n', group)
```

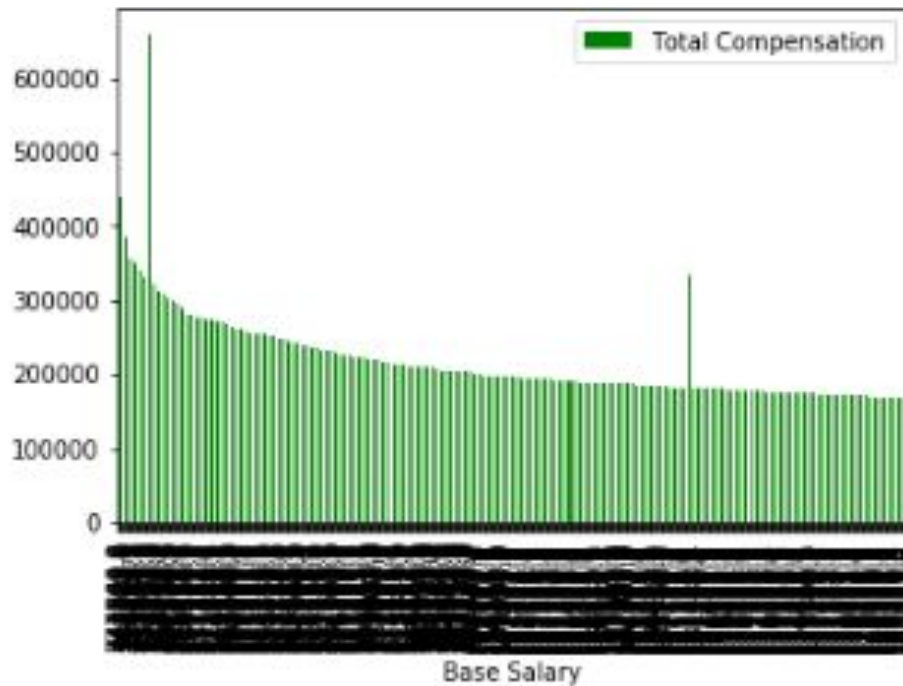
Mean of titles:

Title	Middle	Base Salary	Other Compensation	Total Compensation
ACADEMIC PROGRAM DIRECTOR	NaN	90496.649776	0.000000	90496.649776
ACADEMIC PROGRAM MANAGER	NaN	96104.439344	0.000000	96104.439344
ACCOUNTANT/FISCAL ANALYST II	NaN	58986.013514	10.810811	58997.905405
ACCOUNTANT/FISCAL ANALYST III	NaN	62576.039303	31.840796	62611.064179
ACCOUNTING/FISCAL MANAGER I	NaN	76571.224648	6.690141	76578.583803
ACCOUNTING/FISCAL MANAGER II	NaN	94886.820339	47.457627	94939.023729
ACCOUNTING/FISCAL MANAGER III	NaN	111603.066667	0.000000	111603.066667
ADMIN-LT GOVERNOR'S OFFICE	NaN	97982.500000	0.000000	97982.500000
ADMINISTRATION-GOV OFFICE	NaN	82100.577778	0.000000	82100.577778
ADMINISTRATIVE ASSISTANT	NaN	59770.700000	0.000000	59770.700000
ADMINISTRATIVE COORDINATOR I	NaN	59736.887919	0.000000	59736.887919
ADMINISTRATIVE COORDINATOR II	NaN	64923.605687	29.516588	64956.073934
ADMINISTRATIVE MANAGER I	NaN	80105.964356	7.425743	80114.132673
ADMINISTRATIVE MANAGER II	NaN	96350.851667	70.000000	96427.851667
AGENCY CHIEF INFO OFFICER	NaN	115087.087500	0.000000	115087.087500
AGENCY HEAD	NaN	137457.674627	0.000000	137457.674627
AGRICULTURAL/ANIMAL ASSOC II	NaN	60493.400000	0.000000	60493.400000
ALUMNI PROFESSOR	NaN	128671.788235	0.000000	128671.788235
ALUMNI/DEVELOPMENT COORD II	NaN	59232.250000	0.000000	59232.250000
ALUMNI/DEVELOPMENT MANAGER I	NaN	62606.117391	0.000000	62606.117391
ALUMNI/DEVELOPMENT MANAGER II	NaN	79269.889286	0.000000	79269.889286
APPLICATIONS ANALYST I	NaN	60309.333333	0.000000	60309.333333
APPLICATIONS ANALYST II	NaN	64124.268137	0.000000	64124.268137
ARCH/DESIGN ENGINEER	NaN	57585.366667	0.000000	57585.366667
ARCHIVAL SUPERVISOR	NaN	63930.350000	0.000000	63930.350000
ARTS COORDINATOR II	NaN	59575.266667	0.000000	59575.266667
ASSISTANT DEAN	NaN	96193.350000	0.000000	96193.350000
ASSISTANT PROFESSOR	NaN	80654.923821	0.000000	80654.923821
ASSISTANT VICE PRESIDENT	NaN	98221.880952	0.000000	98221.880952
ASSOC ACADEMIC PROG DIRECTOR	NaN	119081.945349	0.000000	119081.945349

```
# Scatter plot of data based on salary and total compensation
import matplotlib.pyplot as plt
df.plot(kind='scatter',x='Base Salary',y='Total Compensation',color='red')
plt.show()
```



```
# Bar Graph of data based on salary and total compensation
df.head(500).plot(kind='bar',x='Base Salary',y='Total Compensation',color='green')
plt.show()
```




```
# Line graph of data based on salary and total compensation  
ax = plt.gca()
```

```
df.plot(kind='line',x='Base Salary',y='Total Compensation',ax=ax)  
plt.show()
```

