

The following project was solely done with python pandas, matplotlib and seaborn libraries. It is important to note that this could easily have been done using Microsoft Excel considering it is a small dataset(But this project serves as my very first project with python).

In this notebook are the names & scores of real-life Junior Secondary Students(Third-term assessment) of a paricular secondary school here in Nigeria I taught and infact was the class teacher of the JSS1b class.I had a lot of fun carrying this out.(Might be editing from time-to-time)

Import libraries:

```
In [38]: import pandas as pd  
import numpy as np  
import matplotlib.pyplot as plt  
import seaborn as sns
```

```
In [39]: students_a={"Name": [  
    "abdulateef mariam",  
    "abdulsalam maleek",  
    "adelabu aishat",  
    "albert chukwuemeka",  
    "aregbesola fashola",  
    "aremu boluwatife",  
    "davids similoluwa",  
    "eleyinimi olasunkanmi",  
    "etim precious",  
    "iwegbue emmanuel",  
    "jewoola gabriel",  
    "john rachael",  
    "lawal yessirah",  
    "nwamma osinachi",  
    "nwankwo chioma",  
    "ogboo chukwuebube",  
    "ogunbayo ayomide",  
    "okafor frederick",  
    "okpoko favour",  
    "osodi jessica",  
    "quadri adam",  
    "sauban abdulahamid",  
    "shomorin enoch",
```

```
students_b = ({"Name":['adelabu teslim',  
'ajunwa joseph',  
'amokun abdullahi',  
'balogun firdaus',  
'daniel adaeze',  
'davies mariam',  
'emele chisom mary',  
'emeroum chimobi',  
'ewelim martha',  
'israel somto',  
'michael praise',  
'morufdeen yusuf',  
'nebeolisa chikamso',  
'nkanu delight',  
'oguike mmesoma',  
'oguine chinemerem',  
'onyebuchi chidera',  
'osagie miracle',  
'vivian obasi'])
```

```
In [40]: #create dataframe for jss1a students  
dfa = pd.DataFrame(students_a)  
  
#create dataframe for jss1b students  
dfb = pd.DataFrame(students_b)
```

```
In [41]: # Made some corrections on the scores of some students in certain subjects in jss1b DataFrame  
# Like in chinemerem's B/tech,chikamso's french and ezinne's civic scores  
  
dfb.loc[dfb["Name"] == "oguine chinemerem", "B/tech"] = 76  
dfb.loc[dfb["Name"] == "ubaka ezinne", "Civic"] = 80  
dfb.loc[dfb["Name"] == "nebeolisa chikamso", "French"] = 93
```

```
In [42]: # df.fillna(0,inplace=True)           I used this to fill all null values with 0 just incase for unexpected/funny resu  
# with null values
```

```
In [43]: #Find the total of all scores across all subjects for each student in both classes  
dfa["Total"] = dfa.iloc[:,2:23].sum(axis=1)  
dfb["Total"] = dfb.iloc[:,2:23].sum(axis=1)  
# df["Total"] = df["Maths"] + df["English"] + df["B/sci"] + df["S/stud"] + df["Agric"] + df["CRS"] + df["B/stud"] + df[
```

```
In [44]: #Find the averages of all students and round it off to 1 decimal place  
dfa["Average"] = round(dfa.iloc[:,2:21].mean(axis=1),1)  
dfb["Average"] = round(dfb.iloc[:,2:21].mean(axis=1),1)  
# df["Average"] = round(df["Total"]/17 , 1)
```

```
In [45]: #Join both classes into a single dataframe to represent the entire JSS1 population  
df = pd.concat([dfa,dfb]).reset_index(drop=True)
```

```
In [46]: # del df["index"]
```

```
In [47]: df.head()
```

```
Out[47]:
```

	Name	Sex	Maths	English	B/sci	S/stud	Agric	CRS	B/stud	Comp	...	IRS	Civic	Yor	Igbo	Lit	Hist	PHE	CCA	Total	A
0	abdulateef mariam	F	71	77	75	88	75	NaN	70	78	...	90.0	90	81.0	NaN	78	82	77	65	1333.0	
1	abdulsalam maleek	M	53	65	73	62	60	NaN	45	68	...	81.0	77	47.0	NaN	69	70	67	37	1039.0	
2	adelabu aishat	F	45	59	61	58	38	NaN	34	58	...	70.0	78	40.0	NaN	66	67	56	35	926.0	
3	albert chukwuemeka	M	78	89	87	93	89	96.0	88	78	...	NaN	99	NaN	88.0	89	89	89	76	1494.0	
4	aregbesola fashola	M	57	70	81	77	71	NaN	70	67	...	88.0	90	78.0	NaN	86	70	77	56	1255.0	

5 rows × 23 columns

```
In [48]: #Save all dataframes as sheets in an Excel workbook to save progress:  
print("JSS1A DataFrame:\n",dfa)  
print("JSS1B DataFrame:\n",dfb)  
print("JSS1 DataFrame:\n",df)  
with pd.ExcelWriter("c:/users/admin/desktop/jss1-results.xlsx") as workbook:
```

```
dfa.to_excel(workbook,sheet_name="jss1A",index=False)
dfb.to_excel(workbook,sheet_name="jss1B",index=False)
df.to_excel(workbook,sheet_name="jss1_results",index=False)
```

JSS1A DataFrame:

	Name	Sex	Maths	English	B/sci	S/stud	Agric	CRS	\			
0	abdulateef mariam	F	71	77	75	88	75	NaN				
1	abdulsalam maleek	M	53	65	73	62	60	NaN				
2	adelabu aishat	F	45	59	61	58	38	NaN				
3	albert chukwuemeka	M	78	89	87	93	89	96.0				
4	aregbesola fashola	M	57	70	81	77	71	NaN				
5	aremu boluwatife	F	45	45	75	54	39	NaN				
6	davids similoluwa	F	67	79	72	78	70	87.0				
7	eleyinimi olasunkanmi	M	62	80	85	80	71	80.0				
8	etim precious	F	75	90	84	86	77	90.0				
9	iwegbue emmanuel	M	82	88	91	87	79	78.0				
10	jewoola gabriel	M	56	79	63	78	67	77.0				
11	john rachael	F	92	94	96	97	90	99.0				
12	lawal yessirah	F	81	90	90	94	90	NaN				
13	nwamma osinachi	M	70	89	96	90	89	97.0				
14	nwankwo chioma	F	55	93	89	90	90	98.0				
15	ogboo chukwuebube	F	70	87	79	89	90	90.0				
16	ogunbayo ayomide	M	56	67	68	78	56	75.0				
17	okafor frederick	M	76	85	92	89	89	88.0				
18	okpoko favour	F	92	94	91	92	95	90.0				
19	osodi jessica	F	67	88	94	90	78	89.0				
20	quadri adam	M	74	90	94	89	79	NaN				
21	sauban abdulahamid	M	78	82	81	88	90	NaN				
22	shomorin enoch	M	85	87	79	91	97	96.0				
23	ugbodu cherish	F	85	94	91	95	78	98.0				
24	uyota isaiah	M	54	88	86	79	88	89.0				
25	chibuike tochukwu	M	51	56	75	46	60	65.0				
B/stud	Comp	...	IRS	Civic	Yor	Igbo	Lit	Hist	PHE	CCA	Total	\
0	70	78	...	90.0	90	81.0	NaN	78	82	77	65	1333.0
1	45	68	...	81.0	77	47.0	NaN	69	70	67	37	1039.0
2	34	58	...	70.0	78	40.0	NaN	66	67	56	35	926.0
3	88	78	...	NaN	99	NaN	88.0	89	89	89	76	1494.0
4	70	67	...	88.0	90	78.0	NaN	86	70	77	56	1255.0
5	57	57	...	78.0	87	60.0	NaN	45	71	56	43	958.0
6	71	67	...	NaN	90	66.0	NaN	78	79	78	56	1239.0
7	77	78	...	NaN	92	56.0	NaN	80	70	78	67	1273.0
8	84	88	...	NaN	98	NaN	90.0	91	90	70	58	1427.0
9	88	78	...	NaN	99	NaN	78.0	86	91	91	67	1435.0
10	67	67	...	NaN	90	66.0	NaN	70	78	79	45	1213.0
11	99	78	...	NaN	100	72.0	NaN	95	94	89	78	1550.0
12	96	77	...	99.0	100	77.0	NaN	95	90	86	71	1518.0
13	78	77	...	NaN	100	NaN	79.0	91	81	90	67	1468.0
14	87	87	...	NaN	100	NaN	99.0	96	88	81	76	1495.0

15	87	87	...	NaN	99	NaN	92.0	91	89	88	71	1458.0
16	56	57	...	NaN	80	67.0	NaN	67	71	79	55	1127.0
17	87	87	...	NaN	99	NaN	90.0	77	79	97	51	1440.0
18	90	87	...	NaN	100	NaN	99.0	98	94	90	93	1580.0
19	91	88	...	NaN	100	NaN	92.0	90	90	89	85	1488.0
20	90	88	...	90.0	100	70.0	NaN	87	91	93	76	1466.0
21	75	78	...	98.0	90	67.0	NaN	80	78	78	56	1340.0
22	98	88	...	NaN	100	67.0	NaN	80	89	88	67	1464.0
23	94	78	...	NaN	100	NaN	91.0	91	92	82	71	1486.0
24	87	67	...	NaN	90	NaN	78.0	85	55	76	53	1286.0
25	67	48	...	NaN	89	NaN	67.0	60	54	51	32	996.0

Average

0	78.4
1	61.1
2	54.5
3	87.9
4	73.8
5	56.4
6	72.9
7	74.9
8	83.9
9	84.4
10	71.4
11	91.2
12	89.3
13	86.4
14	87.9
15	85.8
16	66.3
17	84.7
18	92.9
19	87.5
20	86.2
21	78.8
22	86.1
23	87.4
24	75.6
25	58.6

[26 rows x 23 columns]

JSS1B DataFrame:

	Name	Sex	Maths	English	B/sci	S/stud	Agric	CRS	\
0	adelabu teslim	M	58	62	62	46	43	66.0	
1	ajunwa joseph	M	53	70	78	60	96	52.0	

2	amokun abdullahi	M	89	79	74	70	62	NaN
3	balogun firdaus	M	48	75	82	49	65	NaN
4	daniel adaeze	F	50	69	72	55	40	58.0
5	davies mariam	F	95	86	85	78	74	NaN
6	emele chisom mary	F	58	62	59	50	58	55.0
7	emeroum chimobi	M	54	79	82	69	51	63.0
8	ewelim martha	F	65	75	75	63	41	61.0
9	israel somto	F	93	95	95	93	99	82.0
10	michael praise	M	98	94	99	89	98	73.0
11	morufdeen yusuf	M	46	56	54	46	52	NaN
12	nebeolisa chikamso	F	83	81	93	88	96	62.0
13	nkanu delight	F	54	81	89	75	81	72.0
14	oguike mmesoma	F	61	82	83	64	43	67.0
15	oguine chinemerem	F	89	97	98	93	69	95.0
16	onyebuchi chidera	F	59	74	71	82	56	63.0
17	osagie miracle	M	24	41	53	50	23	49.0
18	osi joshua	M	57	61	56	42	54	44.0
19	ubaka ezinne	F	75	91	94	76	91	70.0
20	ukpabia marvellous	M	60	69	69	66	57	59.0
21	yahaya mutmainat	F	85	84	98	90	97	NaN

	B/stud	Comp	...	IRS	Civic	Yor	Igbo	Lit	Hist	PHE	CCA	Total	\
0	51	70	...	NaN	68	64.0	NaN	73	49	73	41	1060.0	
1	83	62	...	NaN	78	NaN	56.0	55	68	59	37	1140.0	
2	75	70	...	73.0	90	64.0	NaN	82	54	69	56	1246.0	
3	72	72	...	75.0	71	54.0	NaN	57	60	74	37	1128.0	
4	76	74	...	NaN	86	NaN	55.0	78	53	50	51	1078.0	
5	97	86	...	82.0	100	89.0	NaN	88	88	77	83	1452.0	
6	53	62	...	NaN	86	NaN	62.0	69	40	39	34	1002.0	
7	59	72	...	NaN	80	NaN	72.0	69	63	67	54	1150.0	
8	74	72	...	NaN	89	NaN	66.0	80	64	45	58	1154.0	
9	97	82	...	NaN	92	NaN	80.0	91	76	96	71	1512.0	
10	95	72	...	NaN	94	51.0	NaN	84	91	98	86	1499.0	
11	64	62	...	74.0	67	77.0	NaN	57	55	35	26	941.0	
12	98	84	...	NaN	93	NaN	66.0	83	84	78	72	1406.0	
13	80	74	...	NaN	75	NaN	72.0	80	71	58	61	1245.0	
14	56	72	...	NaN	70	NaN	68.0	85	70	52	69	1159.0	
15	94	72	...	NaN	92	NaN	64.0	93	88	79	95	1489.0	
16	84	80	...	NaN	88	NaN	52.0	76	50	53	67	1174.0	
17	41	69	...	NaN	58	NaN	48.0	46	39	16	16	707.0	
18	58	68	...	NaN	58	NaN	62.0	72	46	42	33	943.0	
19	99	70	...	NaN	80	NaN	78.0	89	88	91	74	1429.0	
20	64	70	...	NaN	75	NaN	56.0	61	68	45	31	1044.0	
21	87	76	...	86.0	88	79.0	NaN	86	85	93	76	1484.0	

Average

```
0    62.4
1    67.1
2    73.3
3    66.4
4    63.4
5    85.4
6    58.9
7    67.6
8    67.9
9    88.9
10   88.2
11   55.4
12   82.7
13   73.2
14   68.2
15   87.6
16   69.1
17   41.6
18   55.5
19   84.1
20   61.4
21   87.3
```

[22 rows x 23 columns]

JSS1 DataFrame:

	Name	Sex	Maths	English	B/sci	S/stud	Agric	CRS	\
0	abdulateef mariam	F	71	77	75	88	75	NaN	
1	abdulsalam maleek	M	53	65	73	62	60	NaN	
2	adelabu aishat	F	45	59	61	58	38	NaN	
3	albert chukwuemeka	M	78	89	87	93	89	96.0	
4	aregbesola fashola	M	57	70	81	77	71	NaN	
5	aremu boluwatife	F	45	45	75	54	39	NaN	
6	davids similoluwa	F	67	79	72	78	70	87.0	
7	eleyinimi olasunkanmi	M	62	80	85	80	71	80.0	
8	etim precious	F	75	90	84	86	77	90.0	
9	iwegbue emmanuel	M	82	88	91	87	79	78.0	
10	jewoola gabriel	M	56	79	63	78	67	77.0	
11	john rachael	F	92	94	96	97	90	99.0	
12	lawal yessirah	F	81	90	90	94	90	NaN	
13	nwamma osinachi	M	70	89	96	90	89	97.0	
14	nwankwo chioma	F	55	93	89	90	90	98.0	
15	ogboo chukwuebube	F	70	87	79	89	90	90.0	
16	ogunbayo ayomide	M	56	67	68	78	56	75.0	
17	okafor frederick	M	76	85	92	89	89	88.0	

18	okpoko favour	F	92	94	91	92	95	90.0
19	osodi jessica	F	67	88	94	90	78	89.0
20	quadri adam	M	74	90	94	89	79	NaN
21	sauban abdulahamid	M	78	82	81	88	90	NaN
22	shomorin enoch	M	85	87	79	91	97	96.0
23	ugbodu cherish	F	85	94	91	95	78	98.0
24	uyota isaiah	M	54	88	86	79	88	89.0
25	chibuike tochukwu	M	51	56	75	46	60	65.0
26	adelabu teslim	M	58	62	62	46	43	66.0
27	ajunwa joseph	M	53	70	78	60	96	52.0
28	amokun abdullahi	M	89	79	74	70	62	NaN
29	balogun firdaus	M	48	75	82	49	65	NaN
30	daniel adaeze	F	50	69	72	55	40	58.0
31	davies mariam	F	95	86	85	78	74	NaN
32	emele chisom mary	F	58	62	59	50	58	55.0
33	emeroum chimobi	M	54	79	82	69	51	63.0
34	ewelim martha	F	65	75	75	63	41	61.0
35	israel somto	F	93	95	95	93	99	82.0
36	michael praise	M	98	94	99	89	98	73.0
37	morufdeen yusuf	M	46	56	54	46	52	NaN
38	nebeolisa chikamso	F	83	81	93	88	96	62.0
39	nkanu delight	F	54	81	89	75	81	72.0
40	oguike mmesoma	F	61	82	83	64	43	67.0
41	oguine chinemerem	F	89	97	98	93	69	95.0
42	onyebuchi chidera	F	59	74	71	82	56	63.0
43	osagie miracle	M	24	41	53	50	23	49.0
44	osi joshua	M	57	61	56	42	54	44.0
45	ubaka ezinne	F	75	91	94	76	91	70.0
46	ukpabia marvellous	M	60	69	69	66	57	59.0
47	yahaya mutmainat	F	85	84	98	90	97	NaN

B/stud	Comp	...	IRS	Civic	Yor	Igbo	Lit	Hist	PHE	CCA	Total	\
0	70	78	...	90.0	90	81.0	NaN	78	82	77	65	1333.0
1	45	68	...	81.0	77	47.0	NaN	69	70	67	37	1039.0
2	34	58	...	70.0	78	40.0	NaN	66	67	56	35	926.0
3	88	78	...	NaN	99	NaN	88.0	89	89	89	76	1494.0
4	70	67	...	88.0	90	78.0	NaN	86	70	77	56	1255.0
5	57	57	...	78.0	87	60.0	NaN	45	71	56	43	958.0
6	71	67	...	NaN	90	66.0	NaN	78	79	78	56	1239.0
7	77	78	...	NaN	92	56.0	NaN	80	70	78	67	1273.0
8	84	88	...	NaN	98	NaN	90.0	91	90	70	58	1427.0
9	88	78	...	NaN	99	NaN	78.0	86	91	91	67	1435.0
10	67	67	...	NaN	90	66.0	NaN	70	78	79	45	1213.0
11	99	78	...	NaN	100	72.0	NaN	95	94	89	78	1550.0
12	96	77	...	99.0	100	77.0	NaN	95	90	86	71	1518.0

13	78	77	...	NaN	100	NaN	79.0	91	81	90	67	1468.0
14	87	87	...	NaN	100	NaN	99.0	96	88	81	76	1495.0
15	87	87	...	NaN	99	NaN	92.0	91	89	88	71	1458.0
16	56	57	...	NaN	80	67.0	NaN	67	71	79	55	1127.0
17	87	87	...	NaN	99	NaN	90.0	77	79	97	51	1440.0
18	90	87	...	NaN	100	NaN	99.0	98	94	90	93	1580.0
19	91	88	...	NaN	100	NaN	92.0	90	90	89	85	1488.0
20	90	88	...	90.0	100	70.0	NaN	87	91	93	76	1466.0
21	75	78	...	98.0	90	67.0	NaN	80	78	78	56	1340.0
22	98	88	...	NaN	100	67.0	NaN	80	89	88	67	1464.0
23	94	78	...	NaN	100	NaN	91.0	91	92	82	71	1486.0
24	87	67	...	NaN	90	NaN	78.0	85	55	76	53	1286.0
25	67	48	...	NaN	89	NaN	67.0	60	54	51	32	996.0
26	51	70	...	NaN	68	64.0	NaN	73	49	73	41	1060.0
27	83	62	...	NaN	78	NaN	56.0	55	68	59	37	1140.0
28	75	70	...	73.0	90	64.0	NaN	82	54	69	56	1246.0
29	72	72	...	75.0	71	54.0	NaN	57	60	74	37	1128.0
30	76	74	...	NaN	86	NaN	55.0	78	53	50	51	1078.0
31	97	86	...	82.0	100	89.0	NaN	88	88	77	83	1452.0
32	53	62	...	NaN	86	NaN	62.0	69	40	39	34	1002.0
33	59	72	...	NaN	80	NaN	72.0	69	63	67	54	1150.0
34	74	72	...	NaN	89	NaN	66.0	80	64	45	58	1154.0
35	97	82	...	NaN	92	NaN	80.0	91	76	96	71	1512.0
36	95	72	...	NaN	94	51.0	NaN	84	91	98	86	1499.0
37	64	62	...	74.0	67	77.0	NaN	57	55	35	26	941.0
38	98	84	...	NaN	93	NaN	66.0	83	84	78	72	1406.0
39	80	74	...	NaN	75	NaN	72.0	80	71	58	61	1245.0
40	56	72	...	NaN	70	NaN	68.0	85	70	52	69	1159.0
41	94	72	...	NaN	92	NaN	64.0	93	88	79	95	1489.0
42	84	80	...	NaN	88	NaN	52.0	76	50	53	67	1174.0
43	41	69	...	NaN	58	NaN	48.0	46	39	16	16	707.0
44	58	68	...	NaN	58	NaN	62.0	72	46	42	33	943.0
45	99	70	...	NaN	80	NaN	78.0	89	88	91	74	1429.0
46	64	70	...	NaN	75	NaN	56.0	61	68	45	31	1044.0
47	87	76	...	86.0	88	79.0	NaN	86	85	93	76	1484.0

Average

0	78.4
1	61.1
2	54.5
3	87.9
4	73.8
5	56.4
6	72.9
7	74.9

```
8      83.9
9      84.4
10     71.4
11     91.2
12     89.3
13     86.4
14     87.9
15     85.8
16     66.3
17     84.7
18     92.9
19     87.5
20     86.2
21     78.8
22     86.1
23     87.4
24     75.6
25     58.6
26     62.4
27     67.1
28     73.3
29     66.4
30     63.4
31     85.4
32     58.9
33     67.6
34     67.9
35     88.9
36     88.2
37     55.4
38     82.7
39     73.2
40     68.2
41     87.6
42     69.1
43     41.6
44     55.5
45     84.1
46     61.4
47     87.3
```

[48 rows x 23 columns]

In [49]: `dfb.head()`

Out[49]:

	Name	Sex	Maths	English	B/sci	S/stud	Agric	CRS	B/stud	Comp	...	IRS	Civic	Yor	Igbo	Lit	Hist	PHE	CCA	Total	Avera
0	adelabu teslim	M	58	62	62	46	43	66.0	51	70	...	NaN	68	64.0	NaN	73	49	73	41	1060.0	6.
1	ajunwa joseph	M	53	70	78	60	96	52.0	83	62	...	NaN	78	NaN	56.0	55	68	59	37	1140.0	6.
2	amokun abdullahi	M	89	79	74	70	62	NaN	75	70	...	73.0	90	64.0	NaN	82	54	69	56	1246.0	7.
3	balogun firdaus	M	48	75	82	49	65	NaN	72	72	...	75.0	71	54.0	NaN	57	60	74	37	1128.0	6.
4	daniel adaeze	F	50	69	72	55	40	58.0	76	74	...	NaN	86	NaN	55.0	78	53	50	51	1078.0	6.

5 rows × 23 columns

Exploratory Data Analysis:

1. How many students are in Jss1a and Jss 1b???:

```
In [50]: print("The total number of students in Jss1a is:", dfa.shape[0], "students")
print("The total number of students in Jss1b is:", dfb.shape[0], "students")
print("The total number of students in the whole of JSS1 is:", df.shape[0], "students")
```

The total number of students in Jss1a is: 26 students
 The total number of students in Jss1b is: 22 students
 The total number of students in the whole of JSS1 is: 48 students

2. How many male students are in JSS1a and JSS1b???:

```
In [51]: #create a dataframe for Jss1a male students:
dfa_male = dfa[dfa["Sex"] == "M"]

#create a dataframe for Jss1b male students:
dfb_male = dfb[dfb["Sex"] == "M"]

#create a dataframe for the entire JSS1 male students:
df_male = df[df["Sex"] == "M"]
```

```
print("The total number of male students in JSS1a is:",dfa_male.shape[0], "boys")
print("The total number of male students in JSS1b is:",dfb_male.shape[0], "boys")
print("The total number of male students in the entire JSS1 is:", df_male.shape[0], "boys")
```

The total number of male students in JSS1a is: 14 boys
The total number of male students in JSS1b is: 10 boys
The total number of male students in the entire JSS1 is: 24 boys

3. How many female students are in JSS1a and JSS1b???:

```
In [52]: #create a dataframe for Jss1a female students:
dfa_female = dfa[dfa["Sex"] == "F"]

#create a dataframe for Jss1a female students:
dfb_female = dfb[dfb["Sex"] == "F"]

#create a dataframe for JSS1 female students:
df_female = df[df["Sex"] == "F"]

print("The total number of female students in JSS1a is:",dfa_female.shape[0], "girls")
print("The total number of female students in JSS1b is:",dfb_female.shape[0], "girls")
print("The total number of female students in the entire JSS1 is:", df_female.shape[0], "girls")
```

The total number of female students in JSS1a is: 12 girls
The total number of female students in JSS1b is: 12 girls
The total number of female students in the entire JSS1 is: 24 girls

4. Who had the least Average in the entire JSS1 class???:

```
In [53]: df[df["Average"] == df['Average'].min()][ "Name" ]
```

```
Out[53]: 43    osagie miracle
Name: Name, dtype: object
```

5. Who had the least average in JSS1a?????

```
In [54]: dfa[dfa["Average"] == dfa["Average"].min()][ "Name" ]
```

```
Out[54]: 2    adelabu aishat
Name: Name, dtype: object
```

6. Find the top 3 students according to the averages in the entire JSS1 population????

```
In [55]: df.sort_values("Average", ascending=False).head(3)[ "Name" ]
```

```
Out[55]: 18    okpoko favour
          11    john rachael
          12    lawal yessirah
Name: Name, dtype: object
```

7. Who are five(5) students that performed the least in the entire JSS1 population(the least performing student should be at the very bottom of the list)?????

```
In [56]: df.sort_values("Average", ascending=False).tail(5)[ "Name" ]
```

```
Out[56]: 5    aremu boluwatife
          44   osi joshua
          37   morufdeen yusuf
          2    adelabu aishat
          43   osagie miracle
Name: Name, dtype: object
```

8. Who was the best male performing student in the entire JSS1 population?????

```
In [57]: df_male[df_male["Average"] == df_male["Average"].max()][ "Name" ]
```

```
Out[57]: 36   michael praise
Name: Name, dtype: object
```

9. How many female students scored higher than 75% in their "Mathematics" result in the entire JSS1?????

```
In [58]: print(df_female[df_female["Maths"] > 75].shape[0], " female students ")
```

```
9 female students
```

10. How many male students scored atleast 75% in their Mathematics, English and basic-science????? And who are these students?????

```
In [59]: print(df_male[(df_male["Maths"] >= 75) & (df_male["English"] >= 75) & (df_male["B/sci"] >= 75)][ "Name" ])
print("")
print(len(df_male[(df_male["Maths"] >= 75) & (df_male["English"] >= 75) & (df_male["B/sci"] >= 75)][ "Name" ]),
      "male students were able to achieve this feat!!!")
```

```
3    albert chukwuemeka
9        iwegbue emmanuel
17    okafor frederick
21    saaban abdulahamid
22        shomorin enoch
36    michael praise
Name: Name, dtype: object
```

6 male students were able to achieve this feat!!!

11. Who are the students that scored below 50% in Mr Adeolu's subjects("Maths" & "Basic science") in the entire JSS1???????

```
In [60]: print(len(df[(df["Maths"] < 50) & (df["B/sci"] < 50)]), "student did this!!1")
0 student did this!!1
```

12. What are the names of the students that had an average below 65???????

```
In [61]: print(df[df["Average"] < 65]["Name"].to_list(), "all had an average below 65%")
print("There are", len(df[df["Average"] < 65]["Name"]), "of them")
['abdulsalam maleek', 'adelabu aishat', 'aremu boluwatife', 'chibuike tochukwu', 'adelabu teslim', 'daniel adaeze', 'emele chisom mary', 'morufdeen yusuf', 'osagie miracle', 'osi joshua', 'ukpabia marvellous'] all had an average below 65%
There are 11 of them
```

13. What are the names of the students whose first names start with the letter "c"(NOTE:The name written first is the surname while the latter is the first name!!!)???????

```
In [62]: df[df["Name"].str.split().str.get(1).str.startswith("c")]["Name"]
Out[62]: 3    albert chukwuemeka
14        nwankwo chioma
15    ogboo chukwuebube
23        ubodu cherish
32    emele chisom mary
33        emeroum chimobi
38    nebeolisa chikamso
41        oguine chinemerem
42        onyebuchi chidera
Name: Name, dtype: object
```

14. Who had the highest score in Social studies in the entire JSS1????????

```
In [63]: df[df["S/stud"] == df["S/stud"].max()][ "Name"]
```

```
Out[63]: 11    john rachael  
Name: Name, dtype: object
```

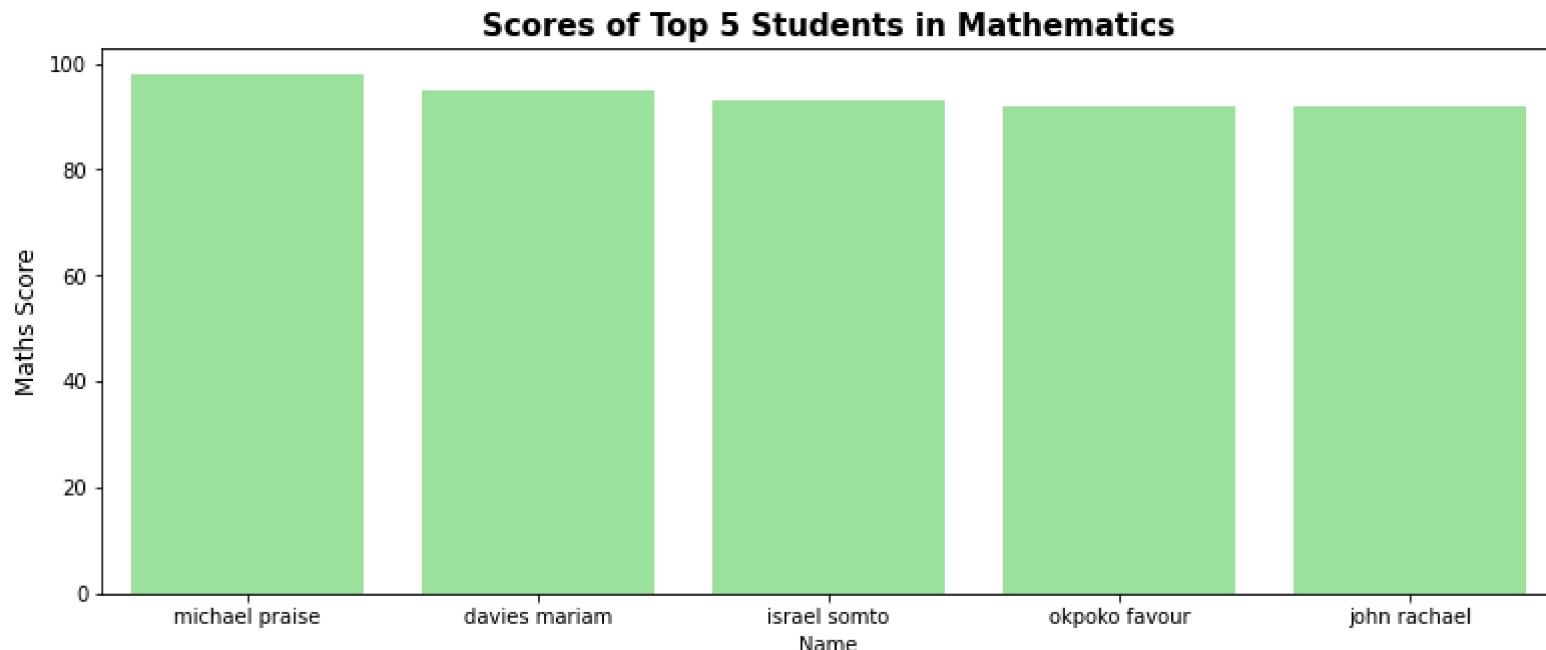
15. Given that mathematics, English and Basic science are the CORE subjects in JSS1. Who performed the best across the CORE subjects????

```
In [64]: # who has the best mean score across the CORE subjects??  
core = ["Maths", "English", "B/sci"]  
print("The student's ID is", round(df[core].mean(axis=1), 2).idxmax())      #Gets the id of the highest mean score across t  
print(df.loc[36][ "Name"].title(), "had an mean score of:", df[core].mean(axis=1).max(), "across the CORE subjects")
```

The student's ID is 36
Michael Praise had an mean score of: 97.0 across the CORE subjects

16. Compare the scores of the five(5) students that had the highest in Mathematics in the entire JSS1?????????

```
In [65]: plt.figure(figsize=(13,5))  
A = df.sort_values("Maths", ascending=False).head(5)  
sns.barplot(data=A, x="Name", y = "Maths", color="lightgreen")  
plt.title("Scores of Top 5 Students in Mathematics", fontweight="bold", size=15)  
plt.ylabel("Maths Score", size=12)  
plt.show()
```



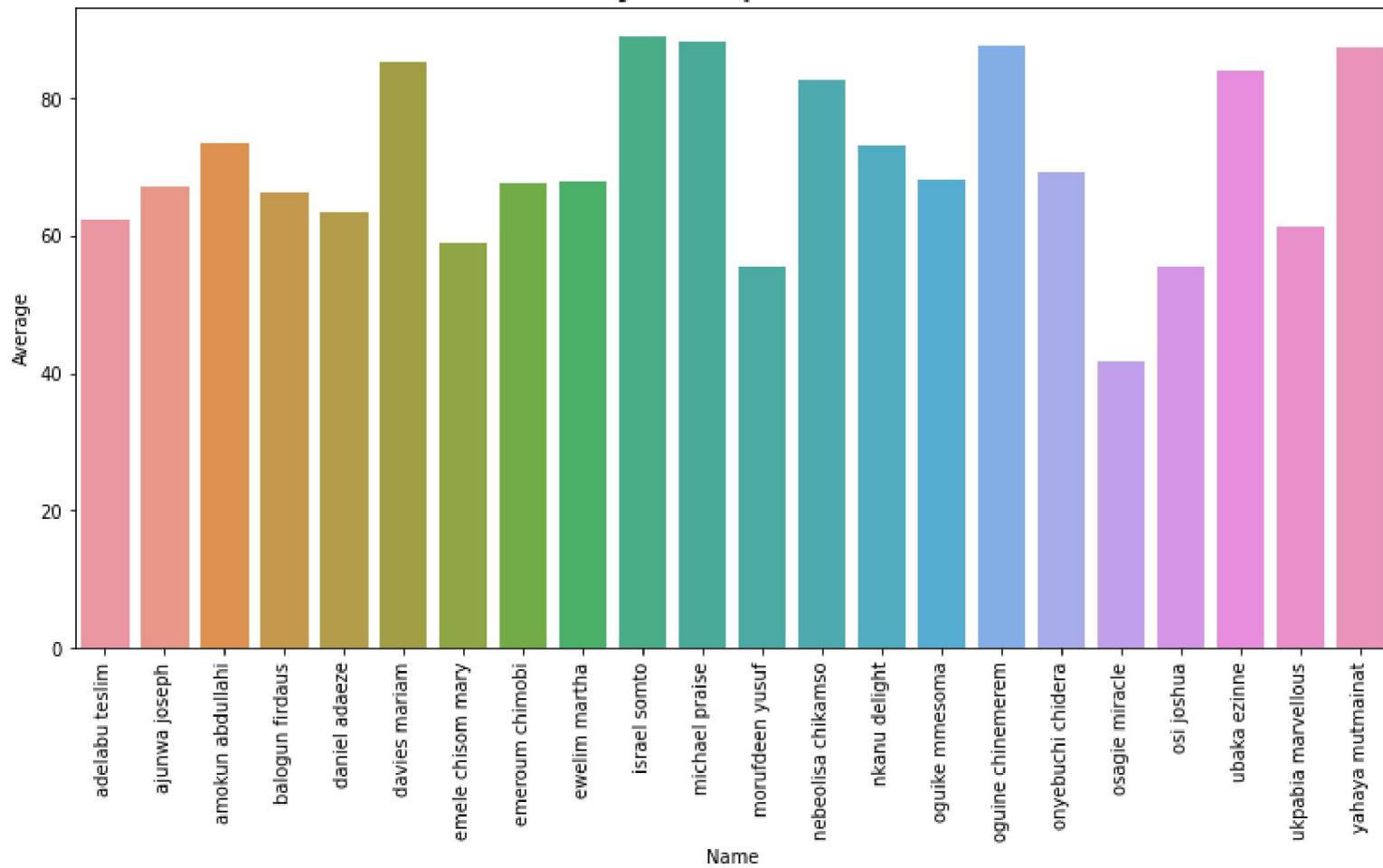
While Michael praise clearly has the highest score in Mathematics followed by Davies mariam, one can observe that their scores are very close to one other

17. Compare the Averages of students in Jss1b

```
In [66]: plt.figure(figsize=(13,6.5))
B = sns.barplot(data=dfb, x= "Name", y ="Average")
plt.title("Average Score of JSS1B students",size=12)
plt.xticks(rotation=90)

plt.show()
```

Average Score of JSS1B students



18. From Top to bottom, show the averages of all students in the entire JSS1 population

```
In [67]: position = df.sort_values("Average", ascending=False)
position.head(12)
```

Out[67]:

		Name	Sex	Maths	English	B/sci	S/stud	Agric	CRS	B/stud	Comp	...	IRS	Civic	Yor	Igbo	Lit	Hist	PHE	CCA	Total
18		okpoko favour	F	92	94	91	92	95	90.0	90	87	...	NaN	100	NaN	99.0	98	94	90	93	1580.0
11		john rachael	F	92	94	96	97	90	99.0	99	78	...	NaN	100	72.0	NaN	95	94	89	78	1550.0
12		lawal yessirah	F	81	90	90	94	90	NaN	96	77	...	99.0	100	77.0	NaN	95	90	86	71	1518.0
35		israel somto	F	93	95	95	93	99	82.0	97	82	...	NaN	92	NaN	80.0	91	76	96	71	1512.0
36		michael praise	M	98	94	99	89	98	73.0	95	72	...	NaN	94	51.0	NaN	84	91	98	86	1499.0
3		albert chukwuemeka	M	78	89	87	93	89	96.0	88	78	...	NaN	99	NaN	88.0	89	89	89	76	1494.0
14		nwankwo chioma	F	55	93	89	90	90	98.0	87	87	...	NaN	100	NaN	99.0	96	88	81	76	1495.0
41		oguine chinemerem	F	89	97	98	93	69	95.0	94	72	...	NaN	92	NaN	64.0	93	88	79	95	1489.0
19		osodi jessica	F	67	88	94	90	78	89.0	91	88	...	NaN	100	NaN	92.0	90	90	89	85	1488.0
23		ugbodu cherish	F	85	94	91	95	78	98.0	94	78	...	NaN	100	NaN	91.0	91	92	82	71	1486.0
47		yahaya mutmainat	F	85	84	98	90	97	NaN	87	76	...	86.0	88	79.0	NaN	86	85	93	76	1484.0
13		nwamma osinachi	M	70	89	96	90	89	97.0	78	77	...	NaN	100	NaN	79.0	91	81	90	67	1468.0

12 rows × 23 columns

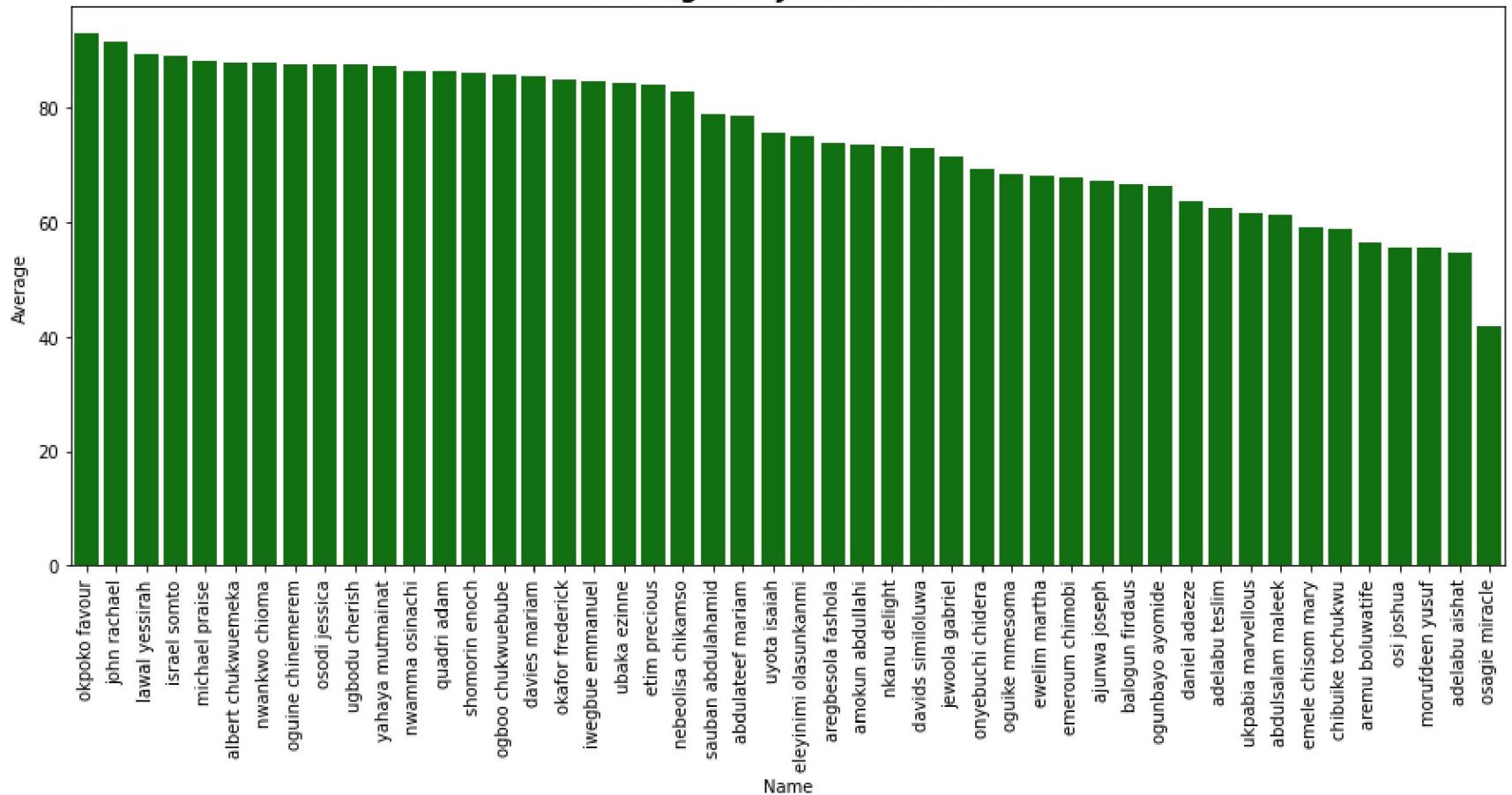
In [68]:

```
plt.figure(figsize=(15,6))
C = sns.barplot(data=position, x="Name",y="Average",color="green")

plt.title("Averages of JSS1 students",fontweight="bold",size=15)
plt.xticks(rotation=90)

plt.show()
```

Averages of JSS1 students



19. What are the highest scores across all the subjects?????

```
In [69]: df_scores = df.iloc[:,2:21]
for col in df_scores.columns:
    print(col,":",df_scores[col].max())
```

```
Maths : 98
English : 97
B/sci : 99
S/stud : 97
Agric : 99
CRS : 99.0
B/stud : 99
Comp : 88
H/econ : 100
B/tech : 90
French : 100
IRS : 99.0
Civic : 100
Yor : 89.0
Igbo : 99.0
Lit : 98
Hist : 94
PHE : 98
CCA : 95
```

Alternatively to the Above, we can use:

```
In [123...]: df_scores.max()
```

```
Out[123]: Maths      98.0
           English    97.0
           B/sci      99.0
           S/stud     97.0
           Agric      99.0
           CRS        99.0
           B/stud     99.0
           Comp       88.0
           H/econ     100.0
           B/tech      90.0
           French     100.0
           IRS        99.0
           Civic      100.0
           Yor        89.0
           Igbo       99.0
           Lit         98.0
           Hist       94.0
           PHE        98.0
           CCA        95.0
           dtype: float64
```

20. Who had the most highest scores across all subjects?????

In [104]:

```
#Below is a very rough code that helps us examine the number of times a student with a certain ID came FIRST  
df_scores.idxmax().reset_index(name="student ID").sort_values("student ID").groupby(["student ID"]).count().reset_index  
  
# df_scores.idxmax().reset_index(name="student ID").sort_values("student ID")
```

Out[104]:

	student ID	Number of Times
0	8	1
1	11	5
2	12	2
3	13	1
4	14	1
5	18	1
6	31	1
7	35	2
8	36	3
9	41	2

From above, you can easily see the student ID and the number of times the student came first in a subject

In [118]:

```
#The student who has the most highest marks has a "student ID": 11  
df.loc[11]["Name"]
```

Out[118]:

```
'john rachael'
```

In []: