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 [319…

```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import warnings
warnings.filterwarnings("ignore")
```

In [320…

```
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",
    "ugbodu cherish",
    "uyota isaiah",
    "chibuike tochukwu"],
"Sex":["F","M","F","M","M","F","F","M","F","M","M","F","F","M","F","F","M","M","F","F","M","M","M","F","M","M"],
"Maths":[71,53,45,78,57,45,67,62,75,82,56,92,81,70,55,70,56,76,92,67,74,78,85,85,54,51],
"English":[77,65,59,89,70,45,79,80,90,88,79,94,90,89,93,87,67,85,94,88,90,82,87,94,88,56],
"B/sci":[75,73,61,87,81,75,72,85,84,91,63,96,90,96,89,79,68,92,91,94,94,81,79,91,86,75],
"S/stud":[88,62,58,93,77,54,78,80,86,87,78,97,94,90,90,89,78,89,92,90,89,88,91,95,79,46],
"Agric":[75,60,38,89,71,39,70,71,77,79,67,90,90,89,90,90,56,89,95,78,79,90,97,78,88,60],
"CRS":[np.nan,np.nan,np.nan,96,np.nan,np.nan,87,80,90,78,77,99,np.nan,97,98,90,75,88,90,89,np.nan,np.nan,96,98,89,65],
"B/stud":[70,45,34,88,70,57,71,77,84,88,67,99,96,78,87,87,56,87,90,91,90,75,98,94,87,67],
"Comp":[78,68,58,78,67,57,67,78,88,78,67,78,77,77,87,87,57,87,87,88,88,78,88,78,67,48],
"H/econ":[89,60,71,88,79,55,67,68,90,86,76,98,94,84,89,92,67,88,94,90,85,76,86,90,81,67],
"B/tech":[67,37,23,80,50,34,45,69,70,70,65,80,88,90,77,67,50,76,81,67,70,66,70,56,40,30],
"French":[80,68,67,98,88,57,89,80,96,96,90,99,100,100,100,90,78,90,100,100,100,79,96,100,90,78],
"IRS":[90,81,70,np.nan,88,78,np.nan,np.nan,np.nan,np.nan,np.nan,np.nan,np.nan,99,np.nan,np.nan,np.nan,np.nan,np.nan,np.nan,np.nan,np.
"Civic":[90,77,78,99,90,87,90,92,98,99,90,100,100,100,100,99,80,99,100,100,100,90,100,100,90,89],
"Yor":[81,47,40,np.nan,78,60,66,56,np.nan,np.nan,66,72,77,np.nan,np.nan,np.nan,67,np.nan,np.nan,np.nan,70,67,67,np.nan,
"Igbo":[np.nan,np.nan,np.nan,88,np.nan,np.nan,np.nan,np.nan,90,78,np.nan,np.nan,np.nan,79,99,92,np.nan,90,99,92,np.nan,
"Lit":[78,69,66,89,86,45,78,80,91,86,70,95,95,91,96,91,67,77,98,90,87,80,80,91,85,60],
"Hist":[82,70,67,89,70,71,79,70,90,91,78,94,90,81,88,89,71,79,94,90,91,78,89,92,55,54],
"PHE":[77,67,56,89,77,56,78,78,70,91,79,89,86,90,81,88,79,97,90,89,93,78,88,82,76,51],
"CCA":[65,37,35,76,56,43,56,67,58,67,45,78,71,67,76,71,55,51,93,85,76,56,67,71,53,32]
}


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',
    'osi joshua',
    'ubaka ezinne',
    'ukpabia marvellous',
    'yahaya mutmainat'],
"Sex":['M','M','M','M','F','F','F','M','F','F','M','M','F','F','F','F','F','M','M','F','M','F'],
"Maths":[58,53,89,48,50,95,58,54,65,93,98,46,83,54,61,89,59,24,57,75,60,85],
"English":[62,70,79,75,69,86,62,79,75,95,94,56,81,81,82,97,74,41,61,91,69,84],
"B/sci":[62,78,74,82,72,85,59,82,75,95,99,54,93,89,83,98,71,53,56,94,69,98],
"S/stud":[46,60,70,49,55,78,50,69,63,93,89,46,88,75,64,93,82,50,42,76,66,90],
"Agric":[43,96,62,65,40,74,58,51,41,99,98,52,96,81,43,69,56,23,54,91,57,97],
"CRS":[66,52,np.nan,np.nan,58,np.nan,55,63,61,82,73,np.nan,62,72,67,95,63,49,44,70,59,np.nan],
"B/stud":[51,83,75,72,76,97,53,59,74,97,95,64,98,80,56,94,84,41,58,99,64,87],
"Comp":[70,62,70,72,74,86,62,72,72,82,72,62,84,74,72,72,80,69,68,70,70,76],
"H/econ":[85,90,76,79,80,80,79,70,89,100,94,56,77,80,69,97,70,45,78,89,65,95],
"B/tech":[72,54,74,72,62,71,45,57,62,77,90,48,75,57,61,97,68,44,37,81,56,90],
"French":[77,89,89,86,69,93,91,89,75,93,93,66,87,85,87,98,81,45,75,93,73,89],
"IRS":[np.nan,np.nan,73,75,np.nan,82,np.nan,np.nan,np.nan,np.nan,np.nan,np.nan,74,np.nan,np.nan,np.nan,np.nan,np.nan,np.nan,np
"Civic":[68,78,90,71,86,100,86,80,89,92,94,67,93,75,70,92,88,58,58,92,75,88],
"Yor":[64,np.nan,64,54,np.nan,89,np.nan,np.nan,np.nan,np.nan,np.nan,51,77,np.nan,np.nan,np.nan,np.nan,np.nan,np.nan,np.nan,np.
"Igbo":[np.nan,56,np.nan,np.nan,55,np.nan,62,72,66,80,np.nan,np.nan,66,72,68,64,52,48,62,78,56,np.nan],
"Lit":[73,55,82,57,78,88,69,69,80,91,84,57,83,80,85,93,76,46,72,89,61,86],
"Hist":[49,68,54,60,53,88,40,63,64,76,91,55,84,71,70,88,50,39,46,88,68,85],
"PHE":[73,59,69,74,50,77,39,67,45,96,98,35,78,58,52,79,53,16,42,91,45,93],
"CCA":[41,37,56,37,51,83,34,54,58,71,86,26,72,61,69,95,67,16,33,74,31,76]
            }
                        )
```

In [321…

```
#create dataframe for jss1a students
dfa = pd.DataFrame(students_a)

#create dataframe for jss1b students
dfb = pd.DataFrame(students_b)
```

In [322…

```
# 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 [323…
```
# 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 [324…
```
#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 [325…
```
#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 [326…
```
#Join both classes into a single dataframe to represent the entire JSS1 population
df = pd.concat([dfa,dfb]).reset_index(drop=True)
```

In [327…
```
# del df["index"]
```

In [328…
```
df.head()
```

Out[328]:

	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 [329…

```
#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 [330…

```
dfb.head()
```

Out[330]:

	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 [331…

```
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 [332…

```
#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 [333…

```
#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 JSS! 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 [334…

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

Out[334]:

```
43    osagie miracle
Name: Name, dtype: object
```

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

In [335…

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

Out[335]:

```
2    adelabu aishat
Name: Name, dtype: object
```

6. Find the *top 5 performing* students according to the averages in the entire JSS1 population:????

In [336…

```
df.sort_values("Average",ascending=False).head(5)["Name"]
```

Out[336]:
```
18     okpoko favour
11      john rachael
12    lawal yessirah
35      israel somto
36    michael praise
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 [337…
```
df.sort_values("Average",ascending=False).tail(5)["Name"]
```

Out[337]:
```
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 [338…
```
df_male[df_male["Average"] == df_male["Average"].max()]["Name"]
```

Out[338]:
```
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 [339…
```
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 [340…
```
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    sauban 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 [341…
```
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 [342…
```
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', 'em
ele 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 [343…
```
df[df["Name"].str.split().str.get(1).str.startswith("c")]["Name"]
```

Out[343]:
```
3     albert chukwuemeka
14        nwankwo chioma
15     ogboo chukwuebube
23        ugbodu 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 [344…
```
df[df["S/stud"] == df["S/stud"].max()]["Name"]
```

Out[344]:
```
11    john rachael
Name: Name, dtype: object
```

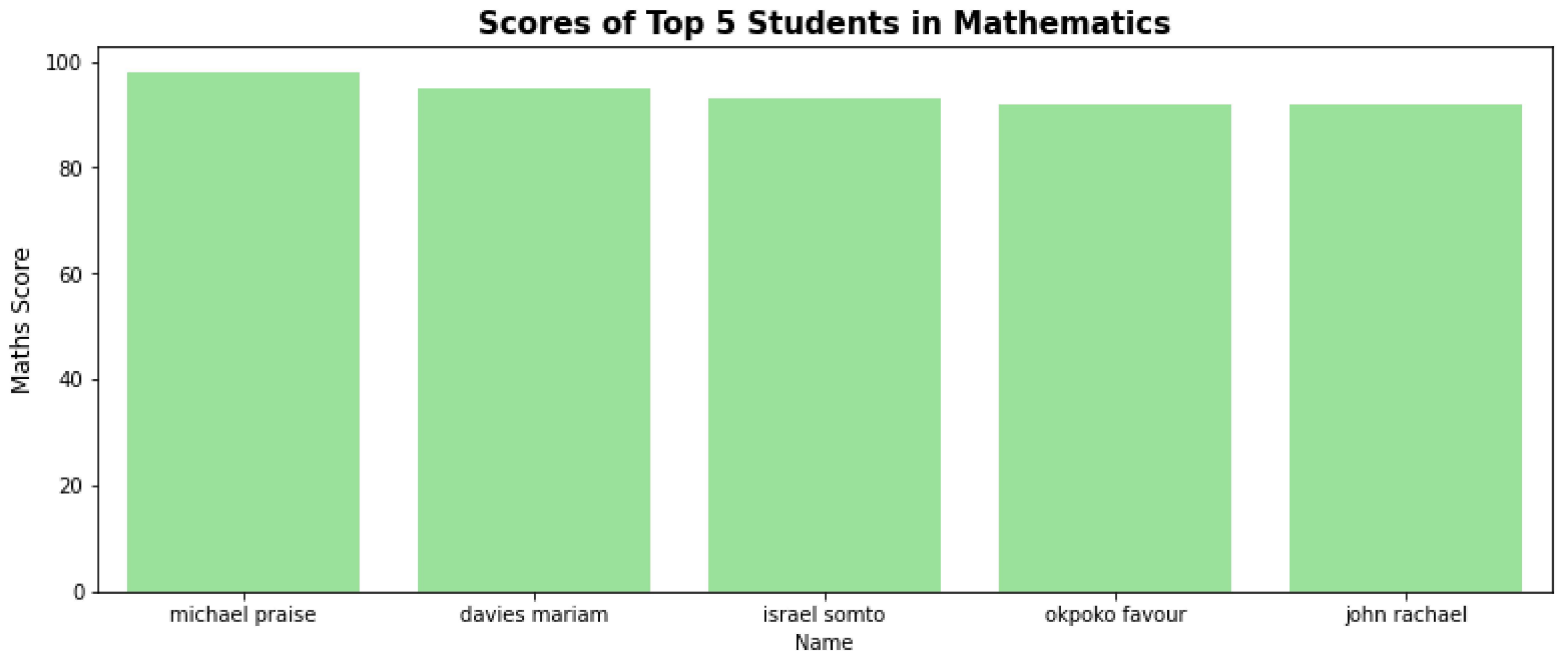
15. Given that mathematics, English and Basic science are the CORE subjects in JSS1. Who performed the best across the CORE subjects????

In [345…
```
# 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 [346…
```
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()
```

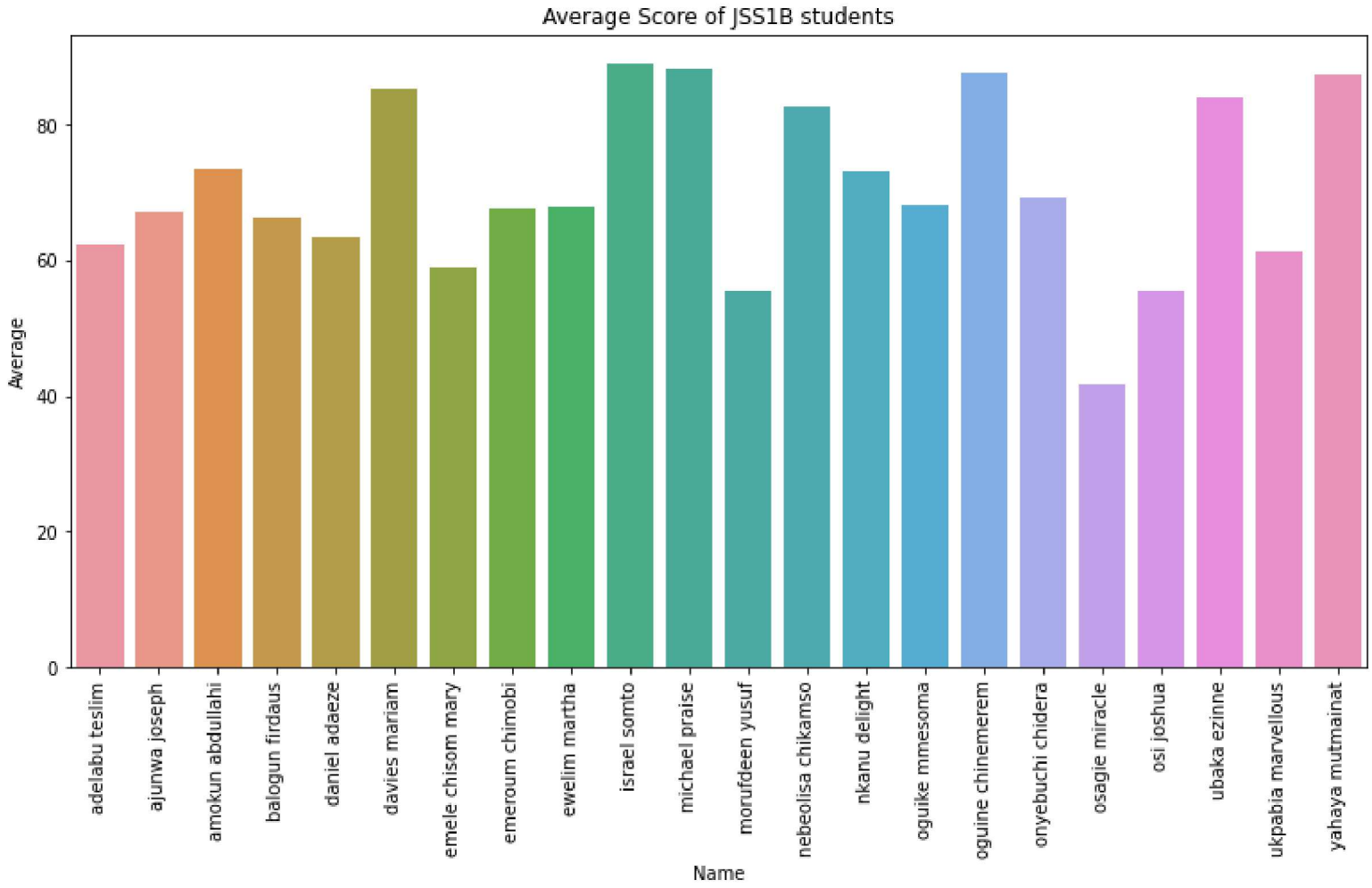


While Michael praise clearly has the highest score in Mathematics followed by Davies mariam, one can observe that their scores are very close to one other

17. Compare the Averages of students in Jss1b

In [347…

```
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()
```



18.What was the position of each student from the best performing student to the least performing student in the entire jss1 population??????????????

In [348…

```
position = df.sort_values("Average",ascending=False)
position.index = range(1,49)
position
```

Out[348]:

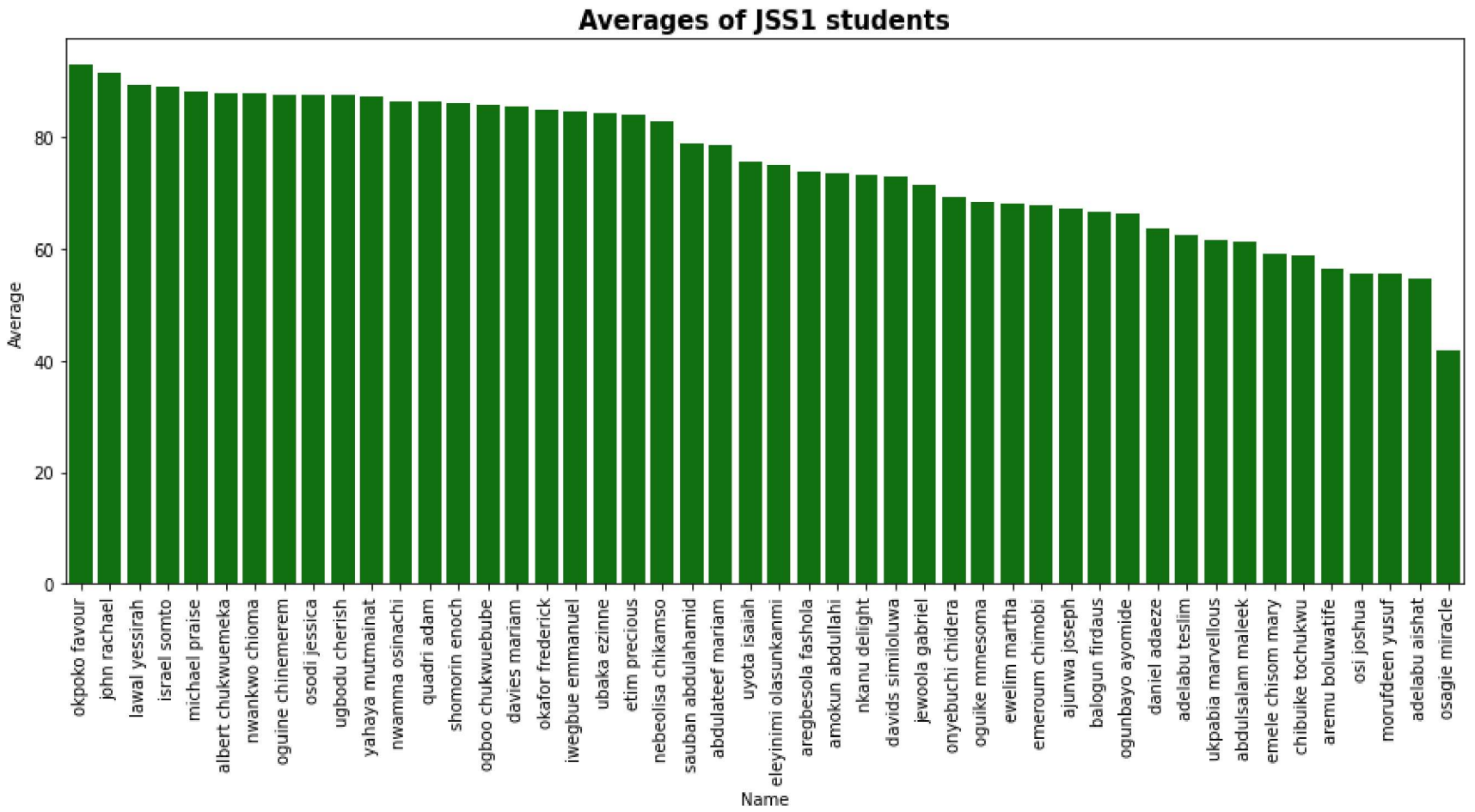
	Name	Sex	Maths	English	B/sci	S/stud	Agric	CRS	B/stud	Comp	...	IRS	Civic	Yor	Igbo	Lit	Hist	PHE	CCA	Total
1	okpoko favour	F	92	94	91	92	95	90.0	90	87	...	NaN	100	NaN	99.0	98	94	90	93	1580.0
2	john rachael	F	92	94	96	97	90	99.0	99	78	...	NaN	100	72.0	NaN	95	94	89	78	1550.0
3	lawal yessirah	F	81	90	90	94	90	NaN	96	77	...	99.0	100	77.0	NaN	95	90	86	71	1518.0
4	israel somto	F	93	95	95	93	99	82.0	97	82	...	NaN	92	NaN	80.0	91	76	96	71	1512.0
5	michael praise	M	98	94	99	89	98	73.0	95	72	...	NaN	94	51.0	NaN	84	91	98	86	1499.0
6	albert chukwuemeka	M	78	89	87	93	89	96.0	88	78	...	NaN	99	NaN	88.0	89	89	89	76	1494.0
7	nwankwo chioma	F	55	93	89	90	90	98.0	87	87	...	NaN	100	NaN	99.0	96	88	81	76	1495.0
8	oguine chinemerem	F	89	97	98	93	69	95.0	94	72	...	NaN	92	NaN	64.0	93	88	79	95	1489.0
9	osodi jessica	F	67	88	94	90	78	89.0	91	88	...	NaN	100	NaN	92.0	90	90	89	85	1488.0
10	ugbodu cherish	F	85	94	91	95	78	98.0	94	78	...	NaN	100	NaN	91.0	91	92	82	71	1486.0
11	yahaya mutmainat	F	85	84	98	90	97	NaN	87	76	...	86.0	88	79.0	NaN	86	85	93	76	1484.0
12	nwamma osinachi	M	70	89	96	90	89	97.0	78	77	...	NaN	100	NaN	79.0	91	81	90	67	1468.0
13	quadri adam	M	74	90	94	89	79	NaN	90	88	...	90.0	100	70.0	NaN	87	91	93	76	1466.0
14	shomorin enoch	M	85	87	79	91	97	96.0	98	88	...	NaN	100	67.0	NaN	80	89	88	67	1464.0
15	ogboo chukwuebube	F	70	87	79	89	90	90.0	87	87	...	NaN	99	NaN	92.0	91	89	88	71	1458.0
16	davies mariam	F	95	86	85	78	74	NaN	97	86	...	82.0	100	89.0	NaN	88	88	77	83	1452.0
17	okafor frederick	M	76	85	92	89	89	88.0	87	87	...	NaN	99	NaN	90.0	77	79	97	51	1440.0
18	iwegbue	M	82	88	91	87	79	78.0	88	78	...	NaN	99	NaN	78.0	86	91	91	67	1435.0

	Name	Sex	Maths	English	B/sci	S/stud	Agric	CRS	B/stud	Comp	...	IRS	Civic	Yor	Igbo	Lit	Hist	PHE	CCA	Total
	emmanuel																			
19	ubaka ezinne	F	75	91	94	76	91	70.0	99	70	...	NaN	80	NaN	78.0	89	88	91	74	1429.0
20	etim precious	F	75	90	84	86	77	90.0	84	88	...	NaN	98	NaN	90.0	91	90	70	58	1427.0
21	nebeolisa chikamso	F	83	81	93	88	96	62.0	98	84	...	NaN	93	NaN	66.0	83	84	78	72	1406.0
22	sauban abdulahamid	M	78	82	81	88	90	NaN	75	78	...	98.0	90	67.0	NaN	80	78	78	56	1340.0
23	abdulateef mariam	F	71	77	75	88	75	NaN	70	78	...	90.0	90	81.0	NaN	78	82	77	65	1333.0
24	uyota isaiah	M	54	88	86	79	88	89.0	87	67	...	NaN	90	NaN	78.0	85	55	76	53	1286.0
25	eleyinimi olasunkanmi	M	62	80	85	80	71	80.0	77	78	...	NaN	92	56.0	NaN	80	70	78	67	1273.0
26	aregbesola fashola	M	57	70	81	77	71	NaN	70	67	...	88.0	90	78.0	NaN	86	70	77	56	1255.0
27	amokun abdullahi	M	89	79	74	70	62	NaN	75	70	...	73.0	90	64.0	NaN	82	54	69	56	1246.0
28	nkanu delight	F	54	81	89	75	81	72.0	80	74	...	NaN	75	NaN	72.0	80	71	58	61	1245.0
29	davids similoluwa	F	67	79	72	78	70	87.0	71	67	...	NaN	90	66.0	NaN	78	79	78	56	1239.0
30	jewoola gabriel	M	56	79	63	78	67	77.0	67	67	...	NaN	90	66.0	NaN	70	78	79	45	1213.0
31	onyebuchi chidera	F	59	74	71	82	56	63.0	84	80	...	NaN	88	NaN	52.0	76	50	53	67	1174.0
32	oguike mmesoma	F	61	82	83	64	43	67.0	56	72	...	NaN	70	NaN	68.0	85	70	52	69	1159.0
33	ewelim martha	F	65	75	75	63	41	61.0	74	72	...	NaN	89	NaN	66.0	80	64	45	58	1154.0
34	emeroum chimobi	M	54	79	82	69	51	63.0	59	72	...	NaN	80	NaN	72.0	69	63	67	54	1150.0
35	ajunwa joseph	M	53	70	78	60	96	52.0	83	62	...	NaN	78	NaN	56.0	55	68	59	37	1140.0

	Name	Sex	Maths	English	B/sci	S/stud	Agric	CRS	B/stud	Comp	...	IRS	Civic	Yor	Igbo	Lit	Hist	PHE	CCA	Total
36	balogun firdaus	M	48	75	82	49	65	NaN	72	72	...	75.0	71	54.0	NaN	57	60	74	37	1128.0
37	ogunbayo ayomide	M	56	67	68	78	56	75.0	56	57	...	NaN	80	67.0	NaN	67	71	79	55	1127.0
38	daniel adaeze	F	50	69	72	55	40	58.0	76	74	...	NaN	86	NaN	55.0	78	53	50	51	1078.0
39	adelabu teslim	M	58	62	62	46	43	66.0	51	70	...	NaN	68	64.0	NaN	73	49	73	41	1060.0
40	ukpabia marvellous	M	60	69	69	66	57	59.0	64	70	...	NaN	75	NaN	56.0	61	68	45	31	1044.0
41	abdulsalam maleek	M	53	65	73	62	60	NaN	45	68	...	81.0	77	47.0	NaN	69	70	67	37	1039.0
42	emele chisom mary	F	58	62	59	50	58	55.0	53	62	...	NaN	86	NaN	62.0	69	40	39	34	1002.0
43	chibuike tochukwu	M	51	56	75	46	60	65.0	67	48	...	NaN	89	NaN	67.0	60	54	51	32	996.0
44	aremu boluwatife	F	45	45	75	54	39	NaN	57	57	...	78.0	87	60.0	NaN	45	71	56	43	958.0
45	osi joshua	M	57	61	56	42	54	44.0	58	68	...	NaN	58	NaN	62.0	72	46	42	33	943.0
46	morufdeen yusuf	M	46	56	54	46	52	NaN	64	62	...	74.0	67	77.0	NaN	57	55	35	26	941.0
47	adelabu aishat	F	45	59	61	58	38	NaN	34	58	...	70.0	78	40.0	NaN	66	67	56	35	926.0
48	osagie miracle	M	24	41	53	50	23	49.0	41	69	...	NaN	58	NaN	48.0	46	39	16	16	707.0

In [349...

```
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()
```



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

In [350…

```
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 [351…
```
df_scores.max()
```

Out[351]:
```
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 [352…
```
#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[352]:

	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 [353…
```
#The student who has the most highest marks has a "student ID": 11
df.loc[11]["Name"]
```

Out[353]:
```
'john rachael'
```

1. Who are the students that had below the mean average score in the entire Jss1 population????????????? What are their Avereages??????????????????????????????

In [354…
```
#Get the mean average score:
print("The mean Average score in the entire JSS1 is:", (df["Average"].mean()))
```

```
print("\nThe students who performed below the mean Average score are:\n", df[df["Average"] < df["Average"].mean()]["Nam
print("\nThere are 24 of them")
```

```
The mean Average score in the entire JSS1 is: 74.99791666666665

The students who performed below the mean Average score are:
 ['abdulsalam maleek', 'adelabu aishat', 'aregbesola fashola', 'aremu boluwatife', 'davids similoluwa', 'eleyinimi olas
unkanmi', 'jewoola gabriel', 'ogunbayo ayomide', 'chibuike tochukwu', 'adelabu teslim', 'ajunwa joseph', 'amokun abdull
ahi', 'balogun firdaus', 'daniel adaeze', 'emele chisom mary', 'emeroum chimobi', 'ewelim martha', 'morufdeen yusuf',
'nkanu delight', 'oguike mmesoma', 'onyebuchi chidera', 'osagie miracle', 'osi joshua', 'ukpabia marvellous']

There are 24 of them
```

In [355…

```
df.loc[df["Average"] < df["Average"].mean(), ["Name","Average"]]
```

Out[355]:

	Name	Average
1	abdulsalam maleek	61.1
2	adelabu aishat	54.5
4	aregbesola fashola	73.8
5	aremu boluwatife	56.4
6	davids similoluwa	72.9
7	eleyinimi olasunkanmi	74.9
10	jewoola gabriel	71.4
16	ogunbayo ayomide	66.3
25	chibuike tochukwu	58.6
26	adelabu teslim	62.4
27	ajunwa joseph	67.1
28	amokun abdullahi	73.3
29	balogun firdaus	66.4
30	daniel adaeze	63.4
32	emele chisom mary	58.9
33	emeroum chimobi	67.6
34	ewelim martha	67.9
37	morufdeen yusuf	55.4
39	nkanu delight	73.2
40	oguike mmesoma	68.2
42	onyebuchi chidera	69.1
43	osagie miracle	41.6
44	osi joshua	55.5
46	ukpabia marvellous	61.4

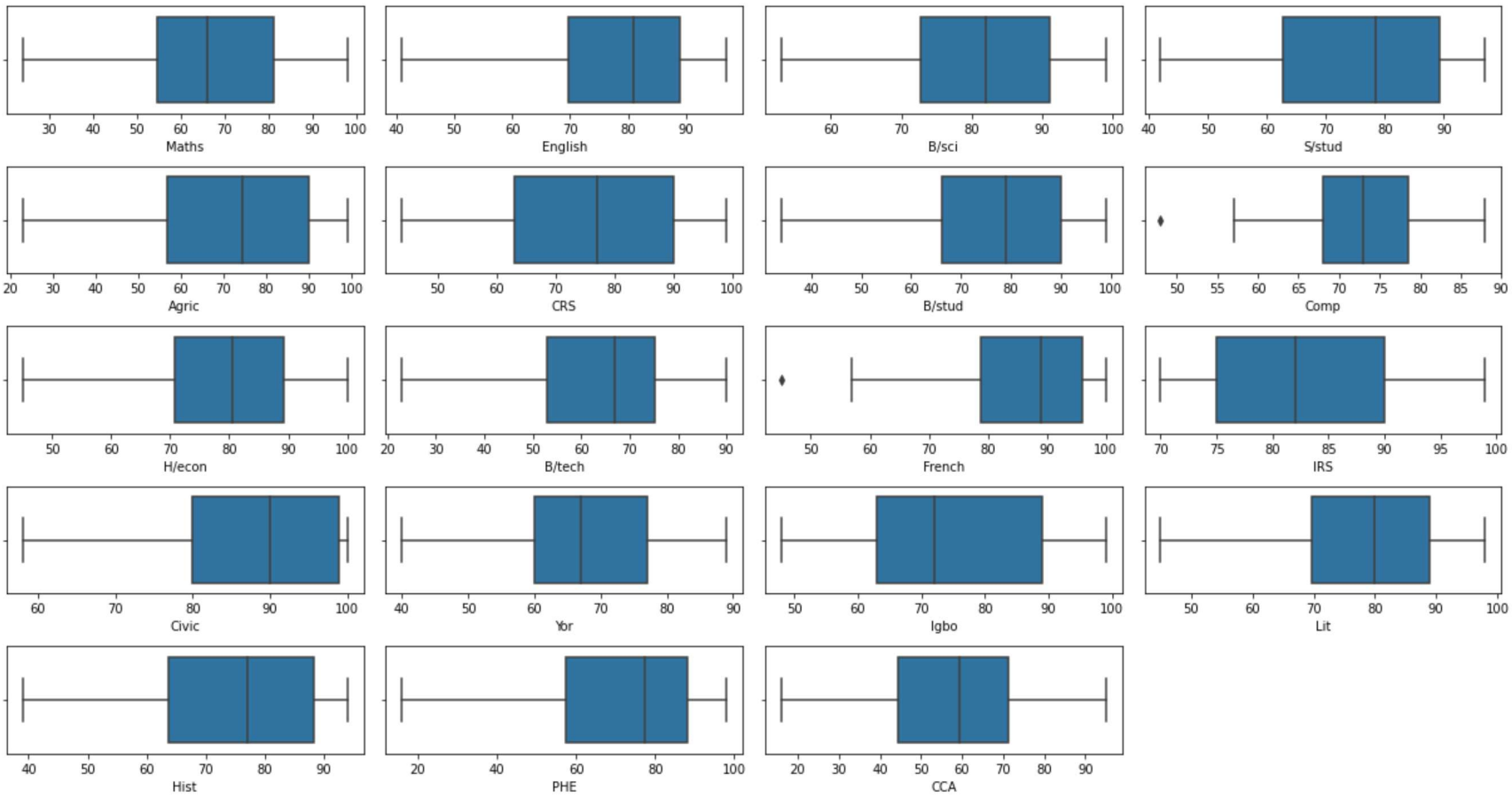
1. Between JSS1a & JSS1b, which class performed better based on the mean average class performance?????????????????

In [356…
```
#Get mean Average score for JSS1a
print("The mean average score for JSS1a is:", round(dfa["Average"].mean(), 2))

#Get mean Average score for JSS1b
print("The mean average score for JSS1b is:", round(dfb["Average"].mean(), 2))
print("\n Since the mean average score of JSS1a is larger than that of JSS1b, Jss1a performed better than JSS1b")
```

```
The mean average score for JSS1a is: 78.63
The mean average score for JSS1b is: 70.71

 Since the mean average score of JSS1a is larger than that of JSS1b, Jss1a performed better than JSS1b
```

1. Examine the performances of students generally across all subjects?????????????????

In [357…
```
data = df.columns[2:21].to_list()
plt.figure(figsize=(17,9))
for i in range(0,len(data)):
    plt.subplot(5,4,i+1)
    A = sns.boxplot(df[data[i]])
    plt.tight_layout()
```



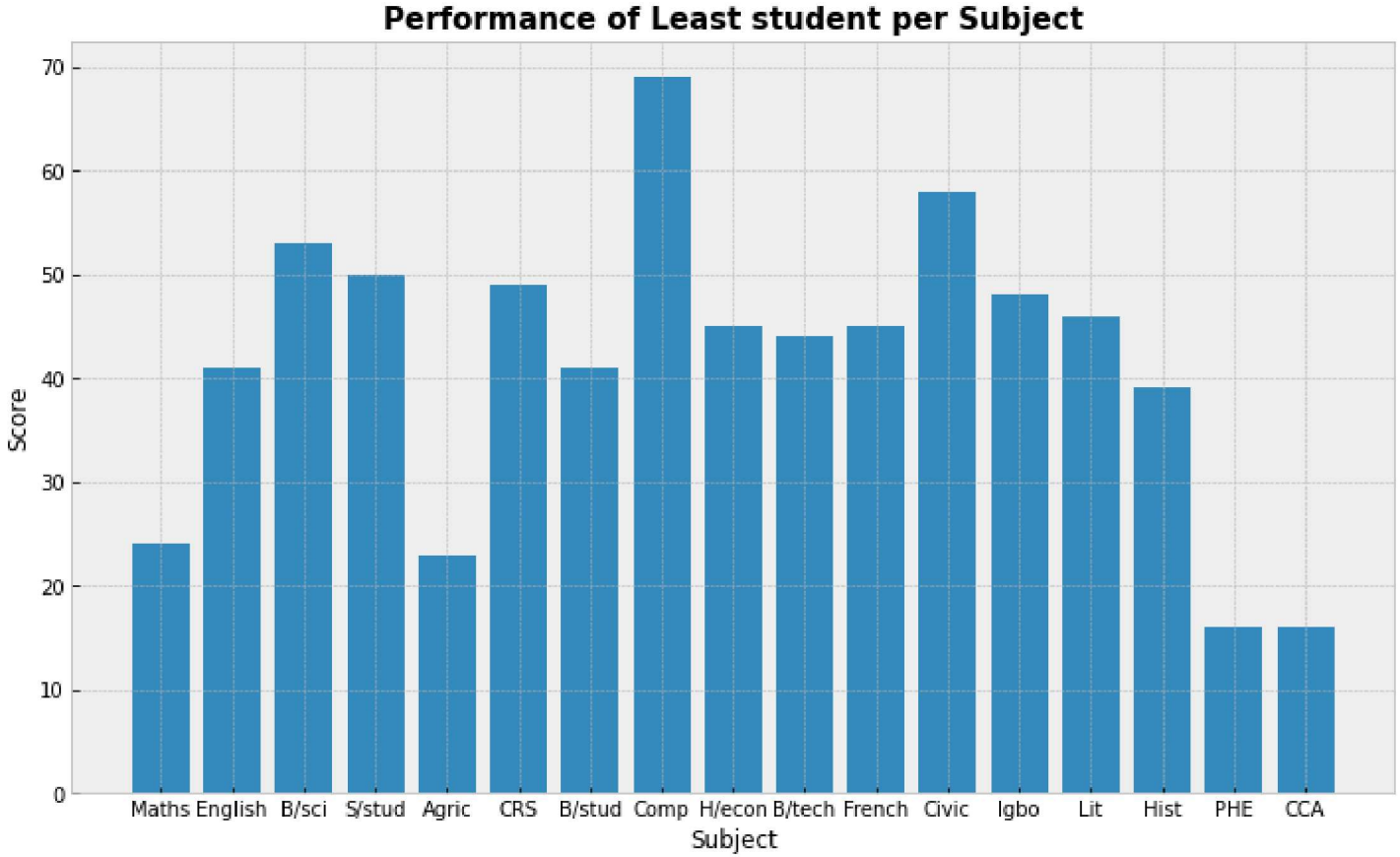
1. What subject can be regarded as the least performing's student **"Strength"**??????????????

In [364...

```
#Get the least performing student
print (df[df["Average"] == df["Average"].min()]["Name"])
# data.pop(11)
# data.pop(12)

plt.style.use("bmh")
print(data)
least_student_scores = df.loc[43][data].reset_index().rename(columns={"index":"subject", 43:"score"})
plt.figure(figsize=(12,7))
plt.bar(height = least_student_scores["score"], x=least_student_scores["subject"])
plt.ylabel("Score",size=12)
plt.xlabel("Subject",size=12)
plt.title("Performance of Least student per Subject", size=15,weight="bold")
```

```
plt.show()
```

```
43    osagie miracle
Name: Name, dtype: object
['Maths', 'English', 'B/sci', 'S/stud', 'Agric', 'CRS', 'B/stud', 'Comp', 'H/econ', 'B/tech', 'French', 'Civic', 'Igb
o', 'Lit', 'Hist', 'PHE', 'CCA']
```



From the Grraph above, it can be concluded that the **strength of the least performing student is in Computer**

1. How many people are offering the following optional subjects???????????????

. Yoruba

. Igbo

. IRS

. CRS

In [379…

```
#Yoruba
print("The number of students offering Yoruba are: " , len(df[df["Yor"].notna()]), "students")

#Igbo
print("The number of students offering Igbi are: " , len(df[df["Igbo"].notna()]), "students")

#IRK
print("The number of students offering IRS are: " , len(df[df["IRS"].notna()]), "students")

#CRS
print("The number of students offering CRS are: " , len(df[df["CRS"].notna()]), "students")
```

```
The number of students offering Yoruba are:  21 students
The number of students offering Igbi are:  27 students
The number of students offering IRS are:  13 students
The number of students offering CRS are:  35 students
```

In [ ]:

In [ ]:

In [ ]:

In [ ]: