

A PROJECT
On
STUDENT DATABASE ANALYSIS USING PYTHON

BACHELOR OF TECHNOLOGY

By
DEPARTMENT OF DATA SCIENCE

YALABOLU RAMYA **21KP1A44C8**

Under the esteemed Guidance of

Er. S AKSHAY KUMAR

CS CODENZ



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GUDIVADA – 521 323, ANDHRA PRADESH., INDIA

2022-2023

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CERTIFICATE

This is to certify that dissertation entitled “**STUDENT DATABASE ANALYSIS USING PYTHON**” submitted by **YALABOLU RAMYA(21KP1A44C8)** in the **BACHELOR OF TECHNOLOGY** from **CS CODENZ** is a record of Bonafide work carried out by them under my guidance and supervision during the year 2022-20

Signature of the Supervisor

Er. S AKSHAY KUMAR
CS CODENZ

Signature of the HOD

D. KOTESWARA RAO, MTech
Associate professor & HOD
Data Science, NRIIT

DECLARATION

I **YALABOLU RAMYA(21KP1A44C8)** declared that the dissertation report entitled “**STUDENT DATABASE ANALYSIS USING PYTHON**” is no more than 1,00,000 words in length including quotes and exclusive of tables, figures, bibliography, and references.

Roll No

Name

Signature

21K1A44C8

YALABOLU
RAMYA

Date:

Place:

ACKNOWLEDGEMENT

This report dissertation could not have been written without the support of our guide **Er. S AKSHAY KUMAR** who not only served as our superior but also encouraged and challenged us throughout our academic program our foremost thanks goes to his. Without his this dissertation would not have been possible. We appreciate him vast knowledge in many areas, and his insights, suggestions and guidance that helped to shape our research skills

It is needed with a great sense of pleasure and immense sense of gratitude that we acknowledge the help of these individuals. We owe many thanks to many people who helped and supported us during the writing of this report

We are thankful to our project coordinator **Er. S AKSHAY KUMAR , CS CODENZ** for his continuous support

We express our sincere thanks to our respected for bet valuable suggestion and constant motivation that greatly helped us in successful completion of project We also take the privilege to express our heartfelt gratitude to **Er. S AKSHAY KUMAR ,CS CODENZ**

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ABSTRACT

This internship offers an immersive experience in the realm of data analytics, focusing on “**STUDENTS DATABASE ANALYSIS**”. As an intern, you will delve into data cleaning, exploratory data analysis, and feature engineering to extract meaningful insights.

The program also includes hands-on experience with predictive modelling, employing machine learning algorithms to anticipate academic outcomes. Through data visualization techniques, you will communicate findings effectively, creating informative dashboards. The internship emphasizes documentation and reporting skills, ensuring comprehensive records of the analysis process. This opportunity not only enhances proficiency in Python for data analytics but also provides a practical understanding of leveraging data to make informed decisions in an educational con

REQUIREMENTS

HARDWARE REQUIREMENTS

- RAM (Memory) , Storage (Hard Drive/SSD)
- Graphics Processing Unit (GPU)
- Operating System, Monitor
- Internet Connection

SOFTWARE REQUIREMENTS

- Python installation
- Integrated Development Environment (IDE)
- Package Management
- Data Manipulation and Analysis ,Statistical Analysis
- Data Visualization, Machine Learning

FUNCTIONAL REQUIREMENTS

- Help in manipulating data and easy process.
- Graphical representation of Datasets

DESCRIPTION

In the realm of educational institutions, understanding student performance and behaviour is essential for effective decision-making and improvement strategies. This project focuses on analysing a student database using Python, a versatile programming language well-suited for data manipulation, analysis, and visualization.

STEPS OF DATA ANALYSIS

1. Collecting the data
2. Cleaning the data
3. Analysing the data
4. Sharing your results
5. Summary

CODE

1) COLLECTING THE DATA

Pandas - Helps to create a dataset and it is also a library in python.

Pandas Package – It's a group of Panadas Data's which are used to analyse the labelled data and relational data.

NumPy- Numerical computing library for mathematical operations and array manipulation.

Matplotlib- Matplotlib is a powerful Python library used for creating static, interactive, and publication-quality visualizations

IMPORTING THE PYTHON LIBRARIES

```
import pandas as pd import numpy as np import
matplotlib.pyplot as plt
df=pd.read_excel('dsdbx.xlsx')
df.drop(['EMAIL','Timestamp'],inplace=True,axis=1)
print(df)
```

OUTPUT:

	Email address	STUDENT NAME
0	vennachandana1@gmail.com	Venna Chandana
1	adilakshmi4765@gmail.com	N.Venkatesh
2	sravankumar7156@gmail.com	Sravan Kumar
3	sandeepyeruva1124@gmail.com	Yeruva sandeep reddy
4	sivajibejjanki@gmail.com	B.sivaji
5	ramyayalabolu123r@gmail.com	Y.Ramya
6	charithareddy3914@gmail.com	P.charitha reddy
7	gayathriplepalli70@gmail.com	POLEPALLI. GAYATHRI
8	syedtasleem07@gmail.com	Syed Tasleem Afroze
9	sowjanyaatha11@gmail.com	T.SOWJANYA
10	tammasahithi1@gmail.com	Tamma Sahithi
11	podilisarayu6@gmail.com	PODILI LAKSHMISARAYU
12	shaikkarishma811@gmail.com	shaik karishma
13	kumarvalaparla890@gmail.com	Venkata Aravind Kumar.V
14	patchachinnu3@gmail.com	Patcha Jaswanth
15	manu952041@gmail.com	Pachipulusu Manohar
16	vanukuri.raghava@gmail.com	

Raghava

17	shaiksakina05@gmail.com	Shaik sameer
18	us465249@gmail.com	S sk usman
19	vallu.srinu756939@gmail.com	Vallu Srinu Siva Subrahmanyam
20	undelachandraobulareddy@gmail.com	Undela Chandra Obula Reddy
21	farukh.786syed@gmail.com	SYED.FARUKH
22	anushayalabolu12@gmail.com	Anusha yalabolu
23	madhulathasure9@gmail.com	SURE. MADHULATHA
24	thammisettsrikanthraj9@gmail.com	T.Srikanth
25	shiakmobin2002@gmail.com	Shaikmobin
26	abdulkhadar6842@gmail.com	Shaik.Abdul Khadar
27	ravuakshaya@gmail.com	Ravu.akshaya
28	hemasanjushasanikommu828@gmail.com	hema sanjusha
29	ynagasasikumar@gmail.com	Y Naga Sasi Kumar
30	rahamtunnisashaik09@gmail.com	Shaik Rahamtunnisa
31	harikabangaram313@gmail.com	Harika
32	indupriya72216@gmail.com	Indu Priya Patcha
33	bhavyasrisajja2003@gmail.com	Bhavya sri
34	sudhamshavejendla@gmail.com	Vejendla Devi Sri Sudhamsha
35	bhanuthanirru@gmail.com	Thanirru Bhanu venkata prasad
36	nikitharayapati9@gmail.com	Nikhitha Rayapati
37	indhupotla123@gmail.com	indhu priya
38	abdulabdu122070@gmail.com	Syed.Abdul Rehman
39	jaffershaik718@gmail.com	Jaffer shaik
40	rabbanishaik7356@gmail.com	SHAIK RABBANI
41	reshmayalamanchi@gmail.com	Reshma yalamanchi
42	thiriveedhinagajyothis@gmail.com	T. Nagajyothis
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50	arundathi0508@gmail.com	PANDA UMA ARUNDATHI
51	chinnivignesh144@gmail.com	chinni vignesh teja yadav

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1	21KP1A4468	N.Manikya Rao	N.Sri Lakshmi
2	21KP1A4488	Rama Chandra Rao	Venkateswaramma
3	21KP1A44D1	Yeruva Ajay Kumar reddy	Yeruva Anjali Devi
4	22kp5a4402	B.lakshmaiah	B.veramma
5	21KP1A44C8	Y.Anjaiah	Y Lakshmi Rajyam
6	21KP1A4475	P.Madhava Reddy	P.Kavitha
7	21KP1A4481	POLEPALLI. GURUBRAHMA CHARI	POLEPALLI.SRIDEVI
8	21KP1A44A9	Syed Rahiman	Syed Naseema
9	21KP1A44B6	T.SAMBA SIVA RAO	T.ARUNA KUMARI
10	21KP1A44B0	Tamma krishna reddy	Tamma Padmavathi
11	21KP1A4480	PODILI RAMESH	PODILI ADILAKSHMI
12	21KP1A4496	SHAIK BAJI	SHAIK KHADRUN

13	21KP1A44C0	Veeraswamy.v	Lakshmi.v
14	21KP1A4477	Patcha apparao	Patcha sukanya
15	21KP1A4472	Pachipulusu Prasad	Pachipulusu Bhavani
16	21KP1A44C3	Srinivasa reddy	Jyothi
17	21KP1A44A3	Shaik Rahim babu	Shaik Raziya
18	21KP1A4492	S sk mastan vali	Mahabobba
19	21KP1A44C1	Vallu Srinivasa Rao	Vallu Surya kumari
20	21KP1A44B9	Undela Chinna Obula Reddy	Undela GuruLakshmi
21	21KP1A44A7	SYED.BAJI	SYED.SARTHAJ BEGUM
22	21KP1A44C7	Chinna anjayya	Lakshmi narayanama
23	21KP1A44A4	SURE.VISWANADHAM	SURE.SAI LAKSHMI
24	21KP1A44B5	T.vasu	T.jaya
25	21KP1A4497	shaik karimullah	Shaik rihana
26	21KP1A4493	Shaik.Kareem	Shaik.Farjana
27	21KP1A4485	Ravu.srinivasrao	Ravu.aruna kumari
28	21KP1A4491	musalareddy	sivaparvathi
29	21KP1A44D0	Y Rama mohanarao	Y Lalitha
30	21KP1A44A0	Shaik.mahaboobjani	Shaik.munni
31	22KP5A4401	A.Subramanyam	A.Dhana Bhagyam
32	21KP1A4476	Appa rao Patcha	Renuka Patcha
33	21KP1A4490	Mohan krishna	Usha rani
34	21KP1A44C4	Vejendla Srinivass Rao	Vejendla Laxmi Prasanna
35	21KP1A44B2	T sathyanarayana	T rama devi
36	21KP1A4487	Rayapati hanumathrao	Rayapati malleswari
37	21KP1A4483	Lakshmanarayana	Sujatha
38	21KP1A44A6	Syed.Meera Sharif	Bandi.Krishna veni
39	21KP1A4495	shaik.LaiLaha	shaik.Ramjan bee
40	21KP1A4499	SHAIK MOHAMMAD HANIF	SHAIK MALIN
41	21KP1A44C9	Yalamanchi subba Rao	Yalamanchi sunitha
42	21KP1A44B7	T. Venkayya	T. Ramanjamma
43	21KP1A4473	P. Amareswara rao	P. Seshu Kumari
44	21KP1A44A2	SHAIK KUDHAN VALI	SHAIK SAIDA HUSSANBI
45	21KP1A4489	Yedukondalu	Nirmala
46	21KP1A4471	Narra SrinivasaRao	Narra Ramadevi
47	21kp1a44b4	Venkata subbiah	Ravanamma
48	21KP1A4469	Nallabothu. Anjaneyulu	Nallabothu. Anitha
49	21KP1A4484	Puli mallikarjuna	Puli ramadevi
50	21KP1A4474	PANDA NARAYANA RAO	PANDA PRASANNA LAKSHMI
51	21KP1A44C6	Chinni Pratap Kumar	Chinni Bhargavi

	COURSE	CGPA	AGE	BRANCH \
0	DS	8	19	Data science
1	CSE	83	19	CSE-DS
2	MECH	7	20	mech
3	CSE	9.5	20	CSE
4	DS	0.72	23	Computer science
5	DS	80	19	CSD
6	DS	70	19	CSD
7	DS	10	19	Data Science
8	MECH	8	19	DS

9	DS	8	19	DATA SCIENCE
10	DS	7.7	19	CSE (Data science)
11	DS	7.5	19	DATA SCIENCE
12	DS	9	19	ds
13	DS	0.98	20	Data Science
14	CSE	0.99	20	Data science
15	MECH	8.5	19	NaN
16	DS	7	19	Data science
17	DS	80	20	DS
18	DS	50	19	DS
19	DS	73	20	Computer Science Engineering& Data Science
20	DS	9.2	20	Computer Science
21	DS	0.7	19	DS
22	DS	75	19	CSD
23	DS	10	20	Data science
24	DS	0.75	19	Data Science
25	DS	8.8	21	Ds
26	ECE	8	20	NaN
27	DS	80	19	Ds
28	CSE	73	18h	cse
29	DS	9.2	20	NaN
30	DS	8	18	Data science
31	DS	75	19	Data science
32	DS	0.75	18	Data Science
33	DS	70	19	Ds
34	CSE	70	19	Cse- Data Science
35	DS	9.6	19	NaN
36	DS	80	19	Ds
37	CSE	72	19	cse
38	DS	90	20	DS
39	CSE	70	19	cse
40	DS	9.5	21	CSD
41	DS	75	19	DS
42	DS	75	19	DS
43	DS	80	20	CSD(Data Science)
44	DS	80	20	DATASCIENCE
45	DS	7	20	Data science
46	DS	7.5	19	CSD (Data science)
47	CSE	10	19	Da
48	DS	90	21	CSD
49	DS	8.3	21	Data science
50	DS	87	19	CSD
51	DS	80	19	Data Science

CURRENT SEMISTER	AADHAAR NO
0 2-2	636336922883
1 II-II	602515258256
2 4	930319053088
3 2-3	576154990146
4 2-2	895444662410

5	2-2	724574588425
6	2.2	810177524502
7	2-2	721819168061
8	2-2	617020354793
9	2-2	338666948901
10	2-2	685349832128
11	2-2	458689741091
12	2-2	663048521599
13	2-2	510305345824
14	2-2	744020413963
15	2-2	559366114423
16	2-2	424973081348
17	2-2	529261464345
18	2-2	568753875709
19	4	*****
20	2-2	693621780842
21	2-2	764320730678
22	2-2	830785066037
23	2-2	776486062608
24	2-2	673112205183
25	2.2	904355656468
26	2-2	334708289154
27	2.2	544305783128
28	2-2	422314863763
29	2-2	448172496292
30	2-2	406976169351
31	2-2	574930568520
32	2-2	573041880949
33	2-2	274736890047
34	2_2	587480445790
35	2-2	357228202835
36	2-2	963360828294
37	2-2	524345891620
38	2-2	347853509974
39	2nd	912229276699
40	2-2	205933956204
41	4	742366316353
42	4	330477145525
43	2-2	692162661608
44	2-2	466722650274
45	2-2	2387 7088 9424
46	4	835457902826
47	2-2	746109575146
48	2-2	208611060176
49	2.2	950519207474
50	2-2	652650486629
51	4th semester	639534870436

*****PRINTING THE INFORMATION OF THE DATASET *****

```
df.info()
```

OUTPUT:

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 52 entries, 0 to 51
Data columns (total 11 columns):
 #   Column                Non-Null Count  Dtype
---  -
 0   Email address         52 non-null    object
 1   STUDENT NAME          52 non-null    object
 2   ROLL NUMBER           52 non-null    object
 3   FATHER NAME           52 non-null    object
 4   MOTHER NAME           52 non-null    object
 5   COURSE                52 non-null    object
 6   CGPA                  52 non-null    object
 7   AGE                   52 non-null    object
 8   BRANCH                48 non-null    object
 9   CURRENT SEMISTER      52 non-null    object
10  AADHAAR NO            52 non-null    object
dtypes: object(11)
memory usage: 4.6+ K
```

*****REPLACING THE NULL VALUES *****

```
df.ffill(inplace=True,axis=1)
```

```
df.isnull().sum()
```

OUTPUT:

```
Email address      0
STUDENT NAME       0
ROLL NUMBER        0
FATHER NAME        0
MOTHER NAME        0
COURSE             0
CGPA               0
AGE               0
BRANCH            0
CURRENT SEMISTER   0
AADHAAR NO        0
dtype: int64
```



```
df.shape
```

OUTPUT:

(52, 11)

DESCRIPTION OF DATASET

```
df.describe()
```

OUTPUT:

	Email address	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH	CURRENT SEMISTER	AADHAAR NO
count	52	52	52	52	52	52	52	52	52	52	52
unique	52	52	52	52	52	4	27	6	24	9	52
top	vennachandana1@gmail.com	Venna Chandana	21KP1A44C5	Venna Ramanareddy	Venna Lakshmi Devi	DS	80	19	DS	2-2	636336922883
freq	1	1	1	1	1	40	7	30	7	37	1

REPLACING THE SPECIFIC VALUE

```
df.replace(['*****'], '223678754646')
```

OUTPUT:

	Email address	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH	CURRENT SEMISTER	AADHAAR NO
0	vennachandana1@gmail.com	Venna Chandana	21KP1A44C5	Venna Ramanareddy	Venna Lakshmi Devi	DS	8	19	Data science	2-2	636336922883
1	adilakshmi4765@gmail.com	N.Venkaatesh	21KP1A4468	N.Manikya Rao	N.Sri Lakshmi	CSE	83	19	CSE-DS	II-II	602515258256
2	sravankumar7156@gmail.com	Sravan Kumar	21KP1A4488	Rama Chandra Rao	Venkateswaramma	MECH	7	20	mech	4	930319053088
3	sandeepyeruva1124@gmail.com	Yeruva sandeep reddy	21KP1A44D1	Yeruva Ajay Kumar reddy	Yeruva Anjali Devi	CSE	9.5	20	CSE	2-3	576154990146
4	shivajibejarki@gmail.com	B.sivaji	22kp5e4402	B.lakshmiiah	B.veramma	DS	0.72	23	Computer science	2-2	895444662410
5	ramyayalabolu123@gmail.com	Y.Ramya	21KP1A44C8	Y.Anjaliah	Y Lakshmi Rajyam	DS	80	19	CSD	2-2	724574568425
6	charithareddy3914@gmail.com	P.charitha reddy	21KP1A4475	P.Madhava Reddy	P.Kavitha	DS	70	19	CSD	2.2	810177524502
7	gayathripolepalli70@gmail.com	POLEPALLI GAYATHRI	21KP1A4481	POLEPALLI GURUBRAHMA CHARI	POLEPALLI SRIDEVI	DS	10	19	Data Science	2-2	721819168061
8	syedtasleem07@gmail.com	Syed Tasleem Afroze	21KP1A44A9	Syed Rahiman	Syed Naseema	MECH	8	19	DS	2-2	617020354793
9	sowjanyaathota11@gmail.com	T.SOWJANYA	21KP1A44B6	T.SAMBA SIVA RAO	T.ARUNA KUMARI	DS	8	19	DATA SCIENCE	2-2	338666948901
10	tammasaahithi1@gmail.com	Tamma Sahithi	21KP1A44B0	Tamma krishna reddy	Tamma Padmavathi	DS	7.7	19	CSE (Data science)	2-2	685349632128
11	podilisarayu6@gmail.com	PODILI LAKSHMISARAYU	21KP1A4480	PODILI RAMESH	PODILI ADILAKSHMI	DS	7.5	19	DATA SCIENCE	2-2	458689741091
12	shalkarishma811@gmail.com	shalk karishma	21KP1A4496	SHAIK BAJI	SHAIK KHADRUN	DS	9	19	ds	2-2	663048521599
13	kumarvaipara890@gmail.com	Venkata Aravind Kumar.V	21KP1A44C0	Veeraswamy.V	Lakshmi.V	DS	0.98	20	Data Science	2-2	510305345624

```
df.columns#displaying the column names
```

OUTPUT:

```
Index(['Email address', 'STUDENT NAME', 'ROLL NUMBER', 'FATHER NAME', 'MOTHER NAME',
      'COURSE', 'CGPA', 'AGE', 'BRANCH', 'CURRENT SEMISTER', 'AADHAAR NO'], dtype='object')
```

Rename function is used for renaming the columns

```
df.rename(columns={'Email address':'Gmail','CURRENT
SEMISTER':'SEMISTER','AADHAAR N print(df.columns)#renaming the columns
name
```

OUTPUT:

```
Index(['Gmail', 'STUDENT NAME', 'ROLL NUMBER', 'FATHER NAME', 'MOTHER NAME',
      'COURSE', 'CGPA', 'AGE', 'BRANCH', 'SEMISTER', 'UIDAI NO'], dtype='object')
```

```
df.replace({'70':70}, inplace=True)
print(df)
```

OUTPUT:

	Gmail	STUDENT NAME \
-		
0	vennachandana1@gmail.com	Venna Chandana
1	adilakshmi4765@gmail.com	N.Venkatesh
2	sravankumar7156@gmail.com	Sravan Kumar
3	sandeepyeruva1124@gmail.com	Yeruva sandeep reddy
4	sivajibejjanki@gmail.com	B.sivaji
5	ramyayalabolu123r@gmail.com	Y.Ramya
6	charithareddy3914@gmail.com	P.charitha reddy
7	gayathriplepalli70@gmail.com	POLEPALLI. GAYATHRI
8	syedtasleem07@gmail.com	Syed Tasleem Afroze
9	sowjanyaatha11@gmail.com	T.SOWJANYA
10	tammahithi1@gmail.com	Tamma Sahithi
11	podilisarayu6@gmail.com	PODILI LAKSHMISARAYU
12	shaikkarishma811@gmail.com	shaik karishma
13	kumarvalaparla890@gmail.com	Venkata Aravind Kumar.V
14	patchachinnu3@gmail.com	Patcha Jaswanth
15	manu952041@gmail.com	Pachipulusu Manohar
16	vanukuri.raghava@gmail.com	Raghava
17	shaiksakina05@gmail.com	Shaik sameer
18	us465249@gmail.com	S sk usman
19	vallu.srinu756939@gmail.com	Vallu Srinu Siva Subrahmanyam
20	undelachandraobulareddy@gmail.com	Undela Chandra Obula Reddy
21	farukh.786syed@gmail.com	SYED.FARUKH
22	anushayalabolu12@gmail.com	Anusha yalabolu

23	madhulathasure9@gmail.com	SURE. MADHULATHA
24	thammisettsrikanthraj9@gmail.com	T. Srikanth
25	shiakmobin2002@gmail.com	Shaikmobin
26	abdulkhadar6842@gmail.com	Shaik.Abdul Khadar
27	ravuakshaya@gmail.com	Ravu.akshaya
28	hemasanjushasanikommu828@gmail.com	hema sanjusha
29	ynagasasikumar@gmail.com	Y Naga Sasi Kumar
30	rahamtunnisashaik09@gmail.com	Shaik Rahamtunnisa
31	harikabangaram313@gmail.com	Harika
32	indupriya72216@gmail.com	Indu Priya Patcha
33	bhavyasrisajja2003@gmail.com	Bhavya sri
34	sudhamshavejendla@gmail.com	Vejendla Devi Sri Sudhamsha
35	bhanuthanirru@gmail.com	Thanirru Bhanu venkata prasad
36	nikitharayapati9@gmail.com	Nikhitha Rayapati
37	indhupotla123@gmail.com	indhu priya
38	abdulabdul22070@gmail.com	Syed.Abdul Rehman
39	jaffershaik718@gmail.com	Jaffer shaik
40	rabbanishaik7356@gmail.com	SHAIK RABBANI
41	reshmayalamanchi@gmail.com	Reshma yalamanchi
42	thiriveedhinagajyothi@gmail.com	T. Nagajyothi
43	paladugudurga1@gmail.com	P. Durga Sri
44	saidashaik371@gmail.com	SHAIK SAIDA ANWAR BASHA
45	mvkbn1312@gmail.com	R.M.V.K.Brahma Naidu
46	nrajasambasivarao@gmail.com	Narra Raja Samba Siva Rao
47	saisairam068@gmail.com	Sairam
48	sriharshanallabothu@gmail.com	Nallabothu. Sri Harsha
49	bhuvanstarpuli@gmail.com	Puli bhuaneswar
50	arundathi0508@gmail.com	PANDA UMA ARUNDATHI
51	chinnivignesh144@gmail.com	chinni vignesh teja yadav

	ROLL NUMBER	FATHER NAME	MOTHER NAME \
0	21KP1A44C5	Venna Ramanareddy	Venna Lakshmidevi
1	21KP1A4468	N.Manikya Rao	N.Sri Lakshmi
2	21KP1A4488	Rama Chandra Rao	Venkateswaramma
3	21KP1A44D1	Yeruva Ajay Kumar reddy	Yeruva Anjali Devi
4	22kp5a4402	B.lakshmaiah	B.veramma
5	21KP1A44C8	Y.Anjaiah	Y Lakshmi Rajyam
6	21KP1A4475	P.Madhava Reddy	P.Kavitha
7	21KP1A4481	POLEPALLI. GURUBRAHMA CHARI	POLEPALLI.SRIDEVI
8	21KP1A44A9	Syed Rahiman	Syed Naseema
9	21KP1A44B6	T. SAMBA SIVA RAO	T. ARUNA KUMARI
10	21KP1A44B0	Tamma krishna reddy	Tamma Padmavathi
11	21KP1A4480	PODILI RAMESH	PODILI ADILAKSHMI
12	21KP1A4496	SHAIK BAJI	SHAIK KHADRUN
13	21KP1A44C0	Veeraswamy.v	Lakshmi.v
14	21KP1A4477	Patcha apparao	Patcha sukanya
15	21KP1A4472	Pachipulusu Prasad	Pachipulusu Bhavani
16	21KP1A44C3	Srinivasa reddy	Jyothi
17	21KP1A44A3	Shaik Rahim babu	Shaik Raziya
18	21KP1A4492	S sk mastan vali	Mahabobba
19	21KP1A44C1	Vallu Srinivasa Rao	Vallu Surya kumari

20	21KP1A44B9	Undela Chinna Obula Reddy	Undela Gurulakshmi
21	21KP1A44A7	SYED.BAJI	SYED.SARTHAJ BEGUM
22	21KP1A44C7	Chinna anjayya	Lakshmi narayanama
23	21KP1A44A4	SURE.VISWANADHAM	SURE.SAI LAKSHMI
24	21KP1A44B5	T.vasu	T.jaya
25	21KP1A4497	shaik karimullah	Shaik rihana
26	21KP1A4493	Shaik.Kareem	Shaik.Farjana
27	21KP1A4485	Ravu.srinivasrao	Ravu.aruna kumari
28	21KP1A4491	musalareddy	sivaparvathi
29	21KP1A44D0	Y Rama mohanarao	Y Lalitha
30	21KP1A44A0	Shaik.mahaboobjani	Shaik.munni
31	22KP5A4401	A.Subramanyam	A.Dhana Bhagyam
32	21KP1A4476	Appa rao Patcha	Renuka Patcha
33	21KP1A4490	Mohan krishna	Usha rani
34	21KP1A44C4	Vejendla Srinivass Rao	Vejendla Laxmi Prasanna
35	21KP1A44B2	T sathyanarayana	T rama devi
36	21KP1A4487	Rayapati hanumathrao	Rayapati malleswari
37	21KP1A4483	Lakshmanarayana	Sujatha
38	21KP1A44A6	Syed.Meera Sharif	Bandi.Krishna veni
39	21KP1A4495	shaik.Lailaha	shaik. Ramjan bee
40	21KP1A4499	SHAIK MOHAMMAD HANIF	SHAIK MALIN
41	21KP1A44C9	Yalamanchi subba Rao	Yalamanchi sunitha
42	21KP1A44B7	T. Venkayya	T. Ramanjamma
43	21KP1A4473	P. Amareswara rao	P. Seshu Kumari
44	21KP1A44A2	SHAIK KUDHAN VALI	SHAIK SAIDA HUSSANBI
45	21KP1A4489	Yedukondalu	Nirmala
46	21KP1A4471	Narra SrinivasaRao	Narra Ramadevi
47	21kp1a44b4	Venkata subbiah	Ravanamma
48	21KP1A4469	Nallabothu. Anjaneyulu	Nallabothu. Anitha
49	21KP1A4484	Puli mallikarjuna	Puli ramadevi
50	21KP1A4474	PANDA NARAYANA RAO	PANDA PRASANNA LAKSHMI
51	21KP1A44C6	Chinni Pratap Kumar	Chinni Bhargavi

	COURSE	CGPA	AGE	BRANCH \
0	DS	8.00	19	Data science
1	CSE	83.00	19	CSE-DS
2	MECH	7.00	20	mech
3	CSE	9.50	20	CSE
4	DS	0.72	23	Computer science
5	DS	80.00	19	CSD
6	DS	70.00	19	CSD
7	DS	10.00	19	Data Science
8	MECH	8.00	19	DS
9	DS	8.00	19	DATA SCIENCE
10	DS	7.70	19	CSE (Data science)
11	DS	7.50	19	DATA SCIENCE
12	DS	9.00	19	ds
13	DS	0.98	20	Data Science
14	CSE	0.99	20	Data science
15	MECH	8.50	19	19
16	DS	7.00	19	Data science

17	DS	80.00	20		DS
18	DS	50.00	19		DS
19	DS	73.00	20	Computer Science Engineering& Data Science	
20	DS	9.20	20	Computer Science	
21	DS	0.70	19		DS
22	DS	75.00	19		CSD
23	DS	10.00	20	Data science	
24	DS	0.75	19	Data Science	
25	DS	8.80	21		Ds
26	ECE	8.00	20		20
27	DS	80.00	19		Ds
28	CSE	73.00	18h		cse
29	DS	9.20	20		20
30	DS	8.00	18	Data science	
31	DS	75.00	19	Data science	
32	DS	0.75	18	Data Science	
33	DS	70.00	19		Ds
34	CSE	70.00	19	Cse- Data Science	
35	DS	9.60	19		19
36	DS	80.00	19		Ds
37	CSE	72.00	19		cse
38	DS	90.00	20		DS
39	CSE	70.00	19		cse
40	DS	9.50	21		CSD
41	DS	75.00	19		DS
42	DS	75.00	19		DS
43	DS	80.00	20	CSD (Data Science)	
44	DS	80.00	20	DATASCIENCE	
45	DS	7.00	20	Data science	
46	DS	7.50	19	CSD (Data science)	
47	CSE	10.00	19		Da
48	DS	90.00	21		CSD
49	DS	8.30	21	Data science	
50	DS	87.00	19		CSD
51	DS	80.00	19	Data Science	

	SEMISTER	AADHAAR NO
0	2-2	636336922883
1	II-II	602515258256
2	4	930319053088
3	2-3	576154990146
4	2-2	895444662410
5	2-2	724574588425
6	2.2	810177524502
7	2-2	721819168061
8	2-2	617020354793
9	2-2	338666948901
10	2-2	685349832128
11	2-2	458689741091
12	2-2	663048521599
13	2-2	510305345824

14	2-2	744020413963
15	2-2	559366114423
16	2-2	424973081348
17	2-2	529261464345
18	2-2	568753875709
19	4	*****
20	2-2	693621780842
21	2-2	764320730678
22	2-2	830785066037
23	2-2	776486062608
24	2-2	673112205183
25	2.2	904355656468
26	2-2	334708289154
27	2.2	544305783128
28	2-2	422314863763
29	2-2	448172496292
30	2-2	406976169351
31	2-2	574930568520
32	2-2	573041880949
33	2-2	274736890047
34	2_2	587480445790
35	2-2	357228202835
36	2-2	963360828294
37	2-2	524345891620
38	2-2	347853509974
39	2nd	912229276699
40	2-2	205933956204
41	4	742366316353
42	4	330477145525
43	2-2	692162661608
44	2-2	466722650274
45	2-2	2387 7088 9424
46	4	835457902826
47	2-2	746109575146
48	2-2	208611060176
49	2.2	950519207474
50	2-2	652650486629

*****Calculating the CGPA*****

```
df. CGPA =df.CGPA.astype(float)
```

```
df. info()
```

OUTPUT:

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 52 entries, 0 to 51
Data columns (total 11 columns):
#   Column                Non-Null Count  Dtype
---  -
0   Gmail                  52 non-null     object
1   STUDENT NAME          52 non-null     object
2   ROLL NUMBER           52 non-null     object
3   FATHER NAME           52 non-null     object
4   MOTHER NAME           52 non-null     object
5   COURSE                 52 non-null     object
6   CGPA                   52 non-null     float64
7   AGE                    52 non-null     object
8   BRANCH                 52 non-null     object
9   SEMISTER              52 non-null     object
10  AADHAAR NO            52 non-null     object

dtypes: float64(1), object(10) -
memory usage: 4.6+ KB
```

Calculating the CGPA>8.0

```
df[(df['CGPA']>8.0)]
```

OUTPUT:

25	shlakmobin2002@gmail.com	Shaikmobin	21KP1A4497	shaik karimullah	Shaik rihana	DS	8.8	21	DS	2.2	90435566468
27	ravuakshaya@gmail.com	Ravu.akshaya	21KP1A4485	Ravu.srinivasrao	Ravu.aruna kumari	DS	80.0	19	DS	2.2	544305783128
28	hemasanjushasanikomm828@gmail.com	hema sanjusha	21KP1A4491	musalareddy	sivaparvathi	CSE	73.0	18h	cse	2-2	422314863763
29	ynagasasikumar@gmail.com	Y Naga Sasi Kumar	21KP1A44D0	Y Rama mohananarao	Y Lalitha	DS	9.2	20	20	2-2	448172496292
31	harikabangaram313@gmail.com	Harika	22KP5A4401	A.Subramanyam	A.Dhana Bhagyam	DS	75.0	19	Data science	2-2	574930568520
33	bhavyasrisajja2003@gmail.com	Bhavya sri	21KP1A4490	Mohan krishna	Usha rani	DS	70.0	19	DS	2-2	274736890047
34	sudhamshavejendia@gmail.com	Vejendia Devi Sri Sudhamsha	21KP1A44C4	Vejendia Srinivass Rao	Vejendia Laxmi Prasanna	CSE	70.0	19	Cse- Data Science	2_2	587480445790
35	bhanuthanirru@gmail.com	Thaniru Bhanu venkata prasad	21KP1A44B2	T sathyanarayana	T rama devi	DS	9.6	19	19	2-2	357228202835
36	nikitharayapati9@gmail.com	Nikhitha Rayapati	21KP1A4487	Rayapati hanumathrao	Rayapati malleswari	DS	80.0	19	DS	2-2	963360828294
37	indhupotia123@gmail.com	indhu priya	21KP1A4483	Lakshmanarayana	Sujatha	CSE	72.0	19	cse	2-2	524345891620
38	abdulabdul22070@gmail.com	Syed.Abdul Rehaman	21KP1A44A6	Syed.Meera Sharif	Bandi.Krishna veni	DS	90.0	20	DS	2-2	347853509974
39	jaffershaik718@gmail.com	Jaffer shaik	21KP1A4495	shaik.LalLaha	shaik.Ramjan bee	CSE	70.0	19	cse	2nd	912229276699
40	rabbanihaik7356@gmail.com	SHAIK RABBANI	21KP1A4499	SHAIK MOHAMMAD HANIF	SHAIK MALIN	DS	9.5	21	CSD	2-2	205933956204
41	reshmayalamanchi@gmail.com	Reshma yalamanchi	21KP1A44C9	Yalamanchi subba Rao	Yalamanchi sunitha	DS	75.0	19	DS	4	742366316353
42	thiriveedhinagalyothi@gmail.com	T. Nagalyothi	21KP1A44B7	T. Venkayya	T. Ramanjamma	DS	75.0	19	DS	4	330477145525

Calculating the largest CGPA value

```
df.nlargest(10, ["CGPA"])
```

OUTPUT:

	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH	SEMISTER	AADHAAR NO
38	abdulabdu22070@gmail.com	Syed Abdul Rehman	21KP1A44A6	Syed.Meera Sharif	Bandi.Krishna veni	DS	90.0	20	DS	2-2	347853509974
48	sriharshanallabothu@gmail.com	Nallabothu, Sri Harsha	21KP1A4469	Nallabothu, Anjaneyulu	Nallabothu, Anitha	DS	90.0	21	CSD	2-2	208611060176
50	arundathi0508@gmail.com	PANDA UMA ARUNDATHI	21KP1A4474	PANDA NARAYANA RAO	PANDA PRASANNA LAKSHMI	DS	87.0	19	CSD	2-2	652650486629
1	adiakshmi4765@gmail.com	N.Venkatesh	21KP1A4468	N.Manikya Rao	N.Sri Lakshmi	CSE	83.0	19	CSE-DS	II-II	602515258256
5	ramyayalabolu123r@gmail.com	Y.Ramya	21KP1A44C8	Y.Arjaiah	Y.Lakshmi Rajyam	DS	80.0	19	CSD	2-2	724574588425
17	shaiksakina05@gmail.com	Shaik sameer	21KP1A44A3	Shaik Rahim babu	Shaik Raziya	DS	80.0	20	DS	2-2	529261464345
27	ravunakshaya@gmail.com	Ravu.akshaya	21KP1A4485	Ravu.srinivasrao	Ravu.aruna kumari	DS	80.0	19	DS	2-2	544305783128
36	nikitharayapati9@gmail.com	Nikitha Rayapati	21KP1A4487	Rayapati hanumathrao	Rayapati malleswari	DS	80.0	19	DS	2-2	963360828294
43	paladugudurga1@gmail.com	P. Durga Sri	21KP1A4473	P. Amareswara rao	P. Seshu Kumari	DS	80.0	20	CSD(Data Science)	2-2	692162661608
44	saidashaik371@gmail.com	SHAIK SAIDA ANWAR BASHA	21KP1A44A2	SHAIK KUDHAN VALI	SHAIK SAIDA HUSSANBI	DS	80.0	20	DATASCIENCE	2-2	466722650274

***Calculating the smallest CGPA value ***

```
df.nsmallest(10, ['CGPA'])
```

OUTPUT:

	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH	SEMISTER	AADHAAR NO
21	farukh.786syed@gmail.com	SYED.FARUKH	21KP1A44A7	SYED.BAJI	SYED.SARTHAJ BEGUM	DS	0.70	19	DS	2-2	764320730678
4	sivaji@bejjanki@gmail.com	B.sivaji	22kp5a4402	B.lakshmalah	B.veramma	DS	0.72	23	Computer science	2-2	895444662410
24	thammisettyarikanthraj9@gmail.com	T.Srikanth	21KP1A44B5	T.vasu	T.jaya	DS	0.75	19	Data Science	2-2	673112205183
32	indupriya72216@gmail.com	Indu Priya Patcha	21KP1A4476	Appa rao Patcha	Renuka Patcha	DS	0.75	18	Data Science	2-2	573041880949
13	kumarvalaparla890@gmail.com	Venkata Aravind Kumar.V	21KP1A44C0	Veeraswamy.v	Lakshmi.v	DS	0.98	20	Data Science	2-2	510305345824
14	patchachinnu3@gmail.com	Patcha Jaswanth	21KP1A4477	Patcha apparao	Patcha sukanya	CSE	0.99	20	Data science	2-2	744020413963
2	sravankumar7156@gmail.com	Sravan Kumar	21KP1A4488	Rama Chandra Rao	Venkateswaramma	MECH	7.00	20	mech	4	930319053088
16	vanukuri.raghava@gmail.com	Raghava	21KP1A44C3	Srinivasa reddy	Jyothi	DS	7.00	19	Data science	2-2	424973081348
45	mvkbn1312@gmail.com	R.M.V.K.Brahma Naidu	21KP1A4489	Yedukondalu	Nirmala	DS	7.00	20	Data science	2-2	2387 7088 9424
11	podilisarayu6@gmail.com	PODILI LAKSHMISARAYU	21KP1A4480	PODILI RAMESH	PODILI ADILAKSHMI	DS	7.50	19	DATA SCIENCE	2-2	458689741091

GROUPBY:

Group by() is a powerful function in pandas that allows you to group data based on a single column or more.

Grouping the values based on single column

```
df1=df.groupby('COURSE').get_group('DS').sort_values('COURSE',ascending=True)
df1
```

OUTPUT:

	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	CGPA	AGE	BRANCH	SEMISTER	UIDAI NO
COURSE										
CSE	adilakshmi4765@gmail.com	N Venkatesh	21KP1A4468	N Manikya Rao	N Sri Lakshmi	83.0	19	CSE-DS	II-II	602515258256
DS	vennachandana1@gmail.com	Venna Chandana	21KP1A44C5	Venna Ramanareddy	Venna Lakshmidivi	8.0	19	Data science	2-2	636336922883
ECE	abdulkhadar6842@gmail.com	Shaik Abdul Khadar	21KP1A4493	Shaik Kareem	Shaik Farjana	8.0	20	20	2-2	334708289154
MECH	sravankumar7156@gmail.com	Sravan Kumar	21KP1A4488	Rama Chandra Rao	Venkateswaramma	7.0	20	mech	4	930319053088
13	kumarvalaparia890@gmail.com	Venkata Aravind Kumar.V	21KP1A44C0	Veeraswamy.v	Lakshmi.v	DS	0.98	20	Data Science	2-2 510305345824
16	vanukuri.raghava@gmail.com	Raghava	21KP1A44C3	Srinivasa reddy	Jyothi	DS	7.00	19	Data science	2-2 424973081348
17	shaiksakina05@gmail.com	Shaik sameer	21KP1A44A3	Shaik Rahim babu	Shaik Raziya	DS	80.00	20	DS	2-2 529261464345
18	us465249@gmail.com	S sk usman	21KP1A4492	S sk mastan vali	Mahabobba	DS	50.00	19	DS	2-2 568753875709
19	vallu.srinu756939@gmail.com	Vallu Srinu Siva Subrahmanyam	21KP1A44C1	Vallu Srinivasa Rao	Vallu Surya kumari	DS	73.00	20	Computer Science Engineering& Data Science	4 *****
20	undelachandraobulareddy@gmail.com	Undela Chandra Obula Reddy	21KP1A44B9	Undela Chinna Obula Reddy	Undela GuruLakshmi	DS	9.20	20	Computer Science	2-2 693621780842
21	farukh.786syed@gmail.com	SYED.FARUKH	21KP1A44A7	SYED.BAJI	SYED.SARTHAJ BEGUM	DS	0.70	19	DS	2-2 764320730678
22	anushayalabolu12@gmail.com	Anusha yalabolu	21KP1A44C7	Chinna anjayya	Lakshmi narayanama	DS	75.00	19	CSD	2-2 830785066037
23	madhulathasure9@gmail.com	SURE. MADHULATHA	21KP1A44A4	SURE.VISWANADHAM	SURE.SAI LAKSHMI	DS	10.00	20	Data science	2-2 776486062608
50	arundathi0508@gmail.com	PANDA UMA ARUNDATHI	21KP1A4474	PANDA NARAYANA RAO	PANDA PRASANNA LAKSHMI	DS	87.00	19	CSD	2-2 652650486629
51	chinnivignesh144@gmail.com	chinni vignesh teja yadav	21KP1A44C6	Chinni Pratap Kumar	Chinni Bhargavi	DS	80.00	19	Data Science	4th semester 639534870436

***Grouping and sorting the course Values ***

```
df.groupby('COURSE').get_group('DS').sort_values('COURSE')
y=df.groupby('COURSE')
y.first()
```

OUTPUT :

	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	CGPA	AGE	BRANCH	SEMISTER	UIDAI NO
COURSE										
CSE	adilakshmi4765@gmail.com	N Venkatesh	21KP1A4468	N Manikya Rao	N Sri Lakshmi	83.0	19	CSE-DS	II-II	602515258256
DS	vennachandana1@gmail.com	Venna Chandana	21KP1A44C5	Venna Ramanareddy	Venna Lakshmidivi	8.0	19	Data science	2-2	636336922883
ECE	abdulkhadar6842@gmail.com	Shaik Abdul Khadar	21KP1A4493	Shaik Kareem	Shaik Farjana	8.0	20	20	2-2	334708289154
MECH	sravankumar7156@gmail.com	Sravan Kumar	21KP1A4488	Rama Chandra Rao	Venkateswaramma	7.0	20	mech	4	930319053088

****Replacing the specific value****

```
df.replace(['18h'],18,inplace=True)
print(df)
```

OUTPUT:

	Gmail	STUDENT NAME \
0	vennachandana1@gmail.com	Venna Chandana
1	adilakshmi4765@gmail.com	N.Venkatesh
2	sravankumar7156@gmail.com	Sravan Kumar
3	sandeepyeruva1124@gmail.com	Yeruva sandeep reddy
4	sivajibejjanki@gmail.com	B.sivaji
5	ramyayalabolu123r@gmail.com	Y.Ramya
6	charithareddy3914@gmail.com	P.charitha reddy
7	gayathripolepalli70@gmail.com	POLEPALLI. GAYATHRI
8	syedtasleem07@gmail.com	Syed Tasleem Afroze
9	sowjanyaatha11@gmail.com	T.SOWJANYA
10	tammasahithi1@gmail.com	Tamma Sahithi
11	podilisarayu6@gmail.com	PODILI LAKSHMISARAYU
12	shaikkarishma811@gmail.com	shaik karishma
13	kumarvalaparla890@gmail.com	Venkata Aravind Kumar.V
14	patchachinnu3@gmail.com	Patcha Jaswanth
15	manu952041@gmail.com	Pachipulusu Manohar
16	vanukuri.raghava@gmail.com	Raghava
17	shaiksakina05@gmail.com	Shaik sameer
18	us465249@gmail.com	S sk usman
19	vallu.srinu756939@gmail.com	Vallu Srinu Siva Subrahmanyam
20	undelachandraobulareddy@gmail.com	Undela Chandra Obula Reddy
21	farukh.786syed@gmail.com	SYED.FARUKH
22	anushayalabolu12@gmail.com	Anusha yalabolu
23	madhulathasure9@gmail.com	SURE. MADHULATHA
24	thammisettySrikanthraj9@gmail.com	T.Srikanth
25	shiakmobin2002@gmail.com	Shaikmobin
26	abdulkhadar6842@gmail.com	Shaik.Abdul Khadar
27	ravuakshaya@gmail.com	Ravu.akshaya

	ROLL NUMBER	FATHER NAME	MOTHER NAME \
0	21KP1A44C5	Venna Ramanareddy	Venna Lakshmidevi
1	21KP1A4468	N.Manikya Rao	N.Sri Lakshmi
2	21KP1A4488	Rama Chandra Rao	Venkateswaramma
3	21KP1A44D1	Yeruva Ajay Kumar reddy	Yeruva Anjali Devi
4	22kp5a4402	B.lakshmaiah	B.veramma
5	21KP1A44C8	Y.Anjaiah	Y Lakshmi Rajyam
6	21KP1A4475	P.Madhava Reddy	P.Kavitha
7	21KP1A4481	POLEPALLI. GURUBRAHMA CHARI	POLEPALLI.SRIDEVI

8	21KP1A44A9	Syed Rahiman	Syed Naseema
9	21KP1A44B6	T.SAMBA SIVA RAO	T.ARUNA KUMARI
10	21KP1A44B0	Tamma krishna reddy	Tamma Padmavathi
11	21KP1A4480	PODILI RAMESH	PODILI ADILAKSHMI
12	21KP1A4496	SHAIK BAJI	SHAIK KHADRUN
13	21KP1A44C0	Veeraswamy.v	Lakshmi.v
14	21KP1A4477	Patcha apparao	Patcha sukanya
15	21KP1A4472	Pachipulusu Prasad	Pachipulusu Bhavani
16	21KP1A44C3	Srinivasa reddy	Jyothi
17	21KP1A44A3	Shaik Rahim babu	Shaik Raziya
18	21KP1A4492	S sk mastan vali	Mahabobba
19	21KP1A44C1	Vallu Srinivasa Rao	Vallu Surya kumari
20	21KP1A44B9	Undela Chinna Obula Reddy	Undela GuruLakshmi
21	21KP1A44A7	SYED.BAJI	SYED.SARTHAJ BEGUM
22	21KP1A44C7	Chinna anjayya	Lakshmi narayanama
23	21KP1A44A4	SURE.VISWANADHAM	SURE.SAI LAKSHMI
24	21KP1A44B5	T.vasu	T.jaya
25	21KP1A4497	shaik karimullah	Shaik rihana
26	21KP1A4493	Shaik.Kareem	Shaik.Farjana
27	21KP1A4485	Ravu.srinivasrao	Ravu.aruna kumari

	COURSE	CGPA	AGE	BRANCH \
0	DS	8.00	19	Data science
1	CSE	83.00	19	CSE-DS
2	MECH	7.00	20	mech
3	CSE	9.50	20	CSE
4	DS	0.72	23	Computer science
5	DS	80.00	19	CSD
6	DS	70.00	19	CSD
7	DS	10.00	19	Data Science
8	MECH	8.00	19	DS
9	DS	8.00	19	DATA SCIENCE
10	DS	7.70	19	CSE (Data science)
11	DS	7.50	19	DATA SCIENCE
12	DS	9.00	19	ds
13	DS	0.98	20	Data Science
14	CSE	0.99	20	Data science
15	MECH	8.50	19	19
16	DS	7.00	19	Data science
17	DS	80.00	20	DS
18	DS	50.00	19	DS
19	DS	73.00	20	Computer Science Engineering& Data Science
20	DS	9.20	20	Computer Science

21	DS	0.70	19	DS
22	DS	75.00	19	CSD
23	DS	10.00	20	Data science
24	DS	0.75	19	Data Science
50	DS	87.00	19	CSD
51	DS	80.00	19	Data Science

	SEMISTER	UIDAI NO
0	2-2	636336922883
1	II-II	602515258256
2	4	930319053088
3	2-3	576154990146
4	2-2	895444662410
5	2-2	724574588425
6	2.2	810177524502
7	2-2	721819168061
8	2-2	617020354793
9	2-2	338666948901
10	2-2	685349832128
11	2-2	458689741091
12	2-2	663048521599
13	2-2	510305345824
14	2-2	744020413963
15	2-2	559366114423
16	2-2	424973081348
17	2-2	529261464345
18	2-2	568753875709
19	4	*****
20	2-2	693621780842
21	2-2	764320730678
22	2-2	830785066037
23	2-2	776486062608
24	2-2	673112205183
25	2.2	904355656468

*****Grouping the CSE values based on Course column*****

```
df2=df.groupby('COURSE').get_group('CSE').sort_values('COURSE',ascending
=True)
df2
```

OUTPUT:

	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH	SEMISTER	AADHAAR NO
1	adilakshmi4765@gmail.com	N.Venkatesh	21KP1A4468	N.Manikya Rao	N.Sri Lakshmi	CSE	83.00	19	CSE-DS	II-II	602515258256
3	sandeepyeruva1124@gmail.com	Yeruva sandeep reddy	21KP1A44D1	Yeruva Ajay Kumar reddy	Yeruva Anjali Devi	CSE	9.50	20	CSE	2-3	576154990146
14	patchachinnu3@gmail.com	Patcha Jaswanth	21KP1A4477	Patcha apparao	Patcha sukanya	CSE	0.99	20	Data science	2-2	744020413963
28	hemasanjushasanikommu828@gmail.com	hema sanjusha	21KP1A4491	musalareddy	sivaparvathi	CSE	73.00	18	cse	2-2	422314863763
34	sudhamshavejendia@gmail.com	Vejendla Devi Sri Sudhamsha	21KP1A44C4	Vejendla Srinivass Rao	Vejendla Laxmi Prasanna	CSE	70.00	19	Cse- Data Science	2_2	587480445790
37	indhupotia123@gmail.com	Indhu priya	21KP1A4483	Lakshmanarayana	Sujatha	CSE	72.00	19	cse	2-2	524345891620
39	jaffershaik718@gmail.com	Jaffer shaik	21KP1A4495	shaik.LalLaha	shaik.Ramjan bee	CSE	70.00	19	cse	2nd	912229276699
47	salsairam068@gmail.com	Sairam	21kp1a44b4	Venkata subbliah	Ravanamma	CSE	10.00	19	Da	2-2	746109575146

Grouping the ECE values based on Course column

```
df3=df.groupby('COURSE').get_group('ECE').sort_values('COURSE',ascending=True)
df3
```

OUTPUT :

	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH	SEMISTER	AADHAAR NO
26	abdulkhadar6842@gmail.com	Shaik.Abdul Khadar	21KP1A4493	Shaik.Kareem	Shaik.Farjana	ECE	8.0	20	20	2-2	334708289154

Grouping the MECH values based on Course column

```
df4=df.groupby('COURSE').get_group('MECH').sort_values('COURSE',ascending=True)
df4
```

OUTPUT :

	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH	SEMISTER	AADHAAR NO
2	sravankumar7156@gmail.com	Sravan Kumar	21KP1A4488	Rama Chandra Rao	Venkateswaramma	MECH	7.0	20	mech	4	930319053088
8	syedtasleem07@gmail.com	Syed Tasleem Afroze	21KP1A44A9	Syed Rahiman	Syed Naseema	MECH	8.0	19	DS	2-2	617020354793
15	manu952041@gmail.com	Pachipulusu Manohar	21KP1A4472	Pachipulusu Prasad	Pachipulusu Bhavani	MECH	8.5	19	19	2-2	559366114423

astype(): It comes into use when we want to case a particular column data type to another data type

```
df.AGE=df.AGE.astype(int)
```

Grouping the age 18 values based on AGE column

```
df5=df.groupby('AGE').get_group(18)
df5
```

OUTPUT :

	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH	SEMISTER	AADHAAR NO
28	hemasanjushasanikommu828@gmail.com	hema sanjusha	21KP1A4491	musalareddy	sivaparvathi	CSE	73.00	18	cse	2-2	422314863763
30	rahamtunnissashaik09@gmail.com	Shaik Rahamtunnisa	21KP1A44A0	Shaik.mahaboobjani	Shaik.munni	DS	8.00	18	Data science	2-2	406976169351
32	indupriya72216@gmail.com	Indu Priya Patcha	21KP1A4476	Appa rao Patcha	Renuka Patcha	DS	0.75	18	Data Science	2-2	573041880949

Grouping the age 19 values based on AGE column

```
d6=df.groupby('AGE').get_group(19)
d6
```

OUTPUT :

	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH
0	vennachandana1@gmail.com	Venna Chandana	21KP1A44C5	Venna Ramanareddy	Venna Lakshmi Devi	DS	8.00	19	Data science
1	adilakshmi4765@gmail.com	N.Venkatesh	21KP1A4468	N.Manikya Rao	N.Sri Lakshmi	CSE	83.00	19	CSE-DS
5	ramayayalabolu123@gmail.com	Y.Ramya	21KP1A44C8	Y.Anjaliah	Y.Lakshmi Rajyam	DS	80.00	19	CSD
6	charithareddy3914@gmail.com	P.charitha reddy	21KP1A4475	P.Madhava Reddy	P.Kavitha	DS	70.00	19	CSD
7	gayathripolepalli70@gmail.com	POLEPALLI. GAYATHRI	21KP1A4481	POLEPALLI. GURUBRAHMA CHARI	POLEPALLI.SRIDEVI	DS	10.00	19	Data Science
8	syedtasleem07@gmail.com	Syed Tasleem Afroze	21KP1A44A9	Syed Rahiman	Syed Naseema	MECH	8.00	19	DS
9	sowjanyaatha11@gmail.com	T.SOWJANYA	21KP1A44B6	T.SAMBA SIVA RAO	T.ARUNA KUMARI	DS	8.00	19	DATA SCIENCE
10	tammasahithi1@gmail.com	Tamma Sahithi	21KP1A44B0	Tamma krishna reddy	Tamma Padmavathi	DS	7.70	19	CSE (Data science)
11	podilisarayut6@gmail.com	PODILI LAKSHMI SARAYU	21KP1A4480	PODILI RAMESH	PODILI ADILAKSHMI	DS	7.50	19	DATA SCIENCE
12	shaikkarishma811@gmail.com	shaik karishma	21KP1A4496	SHAIK BAJI	SHAIK KHADRUN	DS	9.00	19	ds
15	manu952041@gmail.com	Pachipulusu Manohar	21KP1A4472	Pachipulusu Prasad	Pachipulusu Bhavani	MECH	8.50	19	19
16	vanukuri.raghava@gmail.com	Raghava	21KP1A44C3	Srinivasa reddy	Jyothi	DS	7.00	19	Data science
18	us465249@gmail.com	S sk usman	21KP1A4492	S sk mastan vali	Mahabobba	DS	50.00	19	DS
21	farukh.786syed@gmail.com	SYED.FARUKH	21KP1A44A7	SYED.BAJI	SYED.SARTHAJ BEGUM	DS	0.70	19	DS
22	anushayalabolu12@gmail.com	Anusha yalabolu	21KP1A44C7	Chinna anjayya	Lakshmi narayanama	DS	75.00	19	CSD

Grouping the age 20 values based on AGE column

```
d7=df.groupby('AGE').get_group(20)
d7
```

OUTPUT:

	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH	SEMISTER	AADHAAR NO
25	shiakmobin2002@gmail.com	Shaikmobin	21KP1A4497	shaik karimullah	Shaik rihana	DS	8.8	21	Ds	2.2	904355656468
40	rabbanihaik7356@gmail.com	SHAIK RABBANI	21KP1A4499	SHAIK MOHAMMAD HANIF	SHAIK MALIN	DS	9.5	21	CSD	2-2	205933956204
48	sriharshanallabothu@gmail.com	Nallabothu. Sri Harsha	21KP1A4469	Nallabothu. Anjaneyulu	Nallabothu. Anitha	DS	90.0	21	CSD	2-2	208611060176
49	bhuvanstarpuli@gmail.com	Puli bhuvaneswar	21KP1A4484	Puli mallikarjuna	Puli ramadevi	DS	8.3	21	Data science	2.2	950519207474

Grouping the age 21 values based on AGE column

```
d8=df.groupby('AGE').get_group(21)
d8
```

OUTPUT:

	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH	SEMISTER	AADHAAR NO
25	shiakmobin2002@gmail.com	Shaikmobin	21KP1A4497	shaik karimullah	Shaik rihana	DS	8.8	21	Ds	2.2	904355656468
40	rabbanihaik7356@gmail.com	SHAIK RABBANI	21KP1A4499	SHAIK MOHAMMAD HANIF	SHAIK MALIN	DS	9.5	21	CSD	2-2	205933956204
48	sriharshanallabothu@gmail.com	Nallabothu. Sri Harsha	21KP1A4469	Nallabothu. Anjaneyulu	Nallabothu. Anitha	DS	90.0	21	CSD	2-2	208611060176
49	bhuvanstarpuli@gmail.com	Puli bhuvaneswar	21KP1A4484	Puli mallikarjuna	Puli ramadevi	DS	8.3	21	Data science	2.2	950519207474

Grouping the age 23 values based on AGE column

```
d9=df.groupby('AGE').get_group(23)
d9
```

OUTPUT:

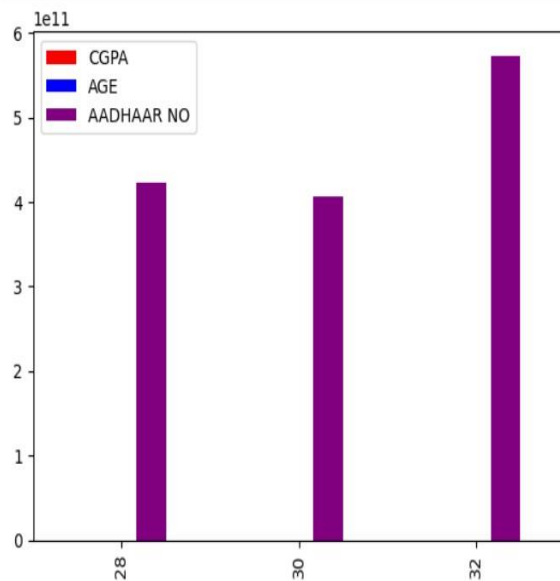
	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH	SEMISTER	AADHAAR NO
4	sivajibejjanki@gmail.com	B.sivaji	22kp5a4402	B.lakshmaiah	B.veramma	DS	0.72	23	Computer science	2-2	895444662410

Plot: To get the scatterplot of a dataframe all we have to do is to just call the plot() method by specifying some parameters

```
df5.plot.bar(color=['red','blue','purple'])
df5
```

OUTPUT:

	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH	SEMISTER	AADHAAR NO
28	hemasanjushasanikommu828@gmail.com	hema sanjusha	21KP1A4491	musalareddy	sivaparvathi	CSE	73.00	18	cse	2-2	422314863763
30	rahamtunnisashaik09@gmail.com	Shaik Rahamtunnisa	21KP1A44A0	Shaik.mahaboobjani	Shaik.munni	DS	8.00	18	Data science	2-2	406976169351
32	indupriya72216@gmail.com	Indu Priya Patcha	21KP1A4476	Appa rao Patcha	Renuka Patcha	DS	0.75	18	Data Science	2-2	573041880949

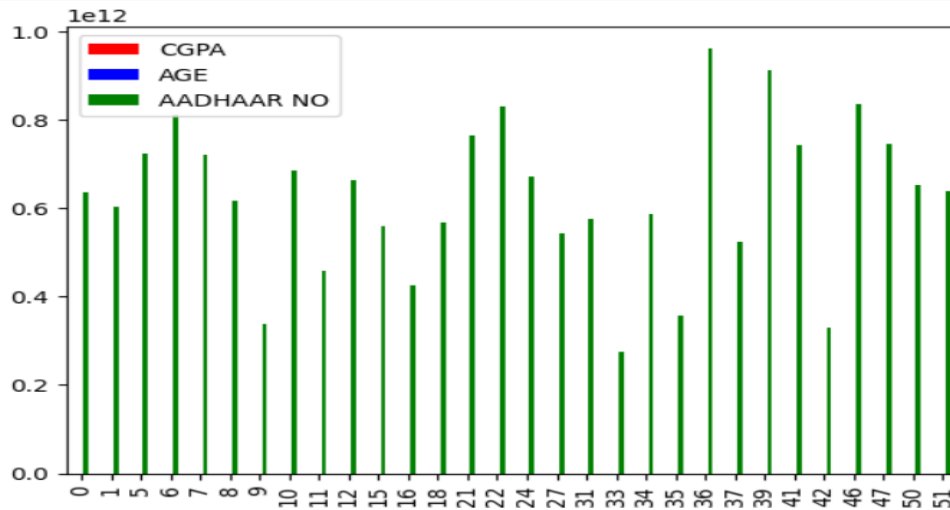


*****The bar() method draws a vertical bar chart and the barh() method draws a horizontal bar chart of DataFrame d6 . *****

```
d6.plot.bar(color=['red','blue','green'])
d6
```

OUTPUT:

	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH	SEMESTER	AADHAAR NO
0	vennachandana1@gmail.com	Venna Chandana	21KP1A44C5	Venna Ramanareddy	Venna Lakshmi Devi	DS	8.00	19	Data science	2-2	636336922883
1	adilakshmi4765@gmail.com	N.Venkatesh	21KP1A4468	N.Manikya Rao	N.Sri Lakshmi	CSE	83.00	19	CSE-DS	II-II	602515258256
5	ramyayalabolu123@gmail.com	Y.Ramya	21KP1A44C8	Y.Anjaiah	Y Lakshmi Rajyam	DS	80.00	19	CSD	2-2	724574588425
6	charithareddy3914@gmail.com	P.charitha reddy	21KP1A4475	P.Madhava Reddy	P.Kavitha	DS	70.00	19	CSD	2.2	810177524502
7	gayathripolepalli70@gmail.com	POLEPALLI. GAYATHRI	21KP1A4481	POLEPALLI. GURUBRAHMA CHARI	POLEPALLI.SRIDEVI	DS	10.00	19	Data Science	2-2	721819168061
8	syedtasleem07@gmail.com	Syed Tasleem Afroze	21KP1A44A9	Syed Rahiman	Syed Naseema	MECH	8.00	19	DS	2-2	617020354793
9	sowjanya tota11@gmail.com	T.SOWJANYA	21KP1A44B6	T.SAMBA SIVA RAO	T.ARUNA KUMARI	DS	8.00	19	DATA SCIENCE	2-2	338666948901
10	tammasahithi1@gmail.com	Tamma Sahithi	21KP1A44B0	Tamma krishna reddy	Tamma Padmavathi	DS	7.70	19	CSE (Data science)	2-2	685349832128
11	podilisarayu6@gmail.com	PODILI LAKSHMISARAYU	21KP1A4480	PODILI RAMESH	PODILI ADILAKSHMI	DS	7.50	19	DATA SCIENCE	2-2	458689741091
12	shaikkarishma811@gmail.com	shaik karishma	21KP1A4496	SHAIK BAJI	SHAIK KHADRUN	DS	9.00	19	ds	2-2	663048521599
15	manu952041@gmail.com	Pachipulusu Manohar	21KP1A4472	Pachipulusu Prasad	Pachipulusu Bhavani	MECH	8.50	19	19	2-2	559366114423
16	vanukuri.raghava@gmail.com	Raghava	21KP1A44C3	Srinivasa reddy	Jyothi	DS	7.00	19	Data science	2-2	424973081348
18	us465249@gmail.com	S sk usman	21KP1A4492	S sk mastan vali	Mahabobba	DS	50.00	19	DS	2-2	568753875709
21	farukh.786syed@gmail.com	SYED.FARUKH	21KP1A44A7	SYED.BAJI	SYED.SARTHAJ BEGUM	DS	0.70	19	DS	2-2	764320730678
22	anushayalabolu12@gmail.com	Anusha yalabolu	21KP1A44C7	Chinna anjayya	Lakshmi narayanama	DS	75.00	19	CSD	2-2	830785066037
24	thammisetty srinikanthraja@gmail.com	T.Srikanth	21KP1A44B5	T.vasu	T.jaya	DS	0.75	19	Data Science	2-2	673112205183

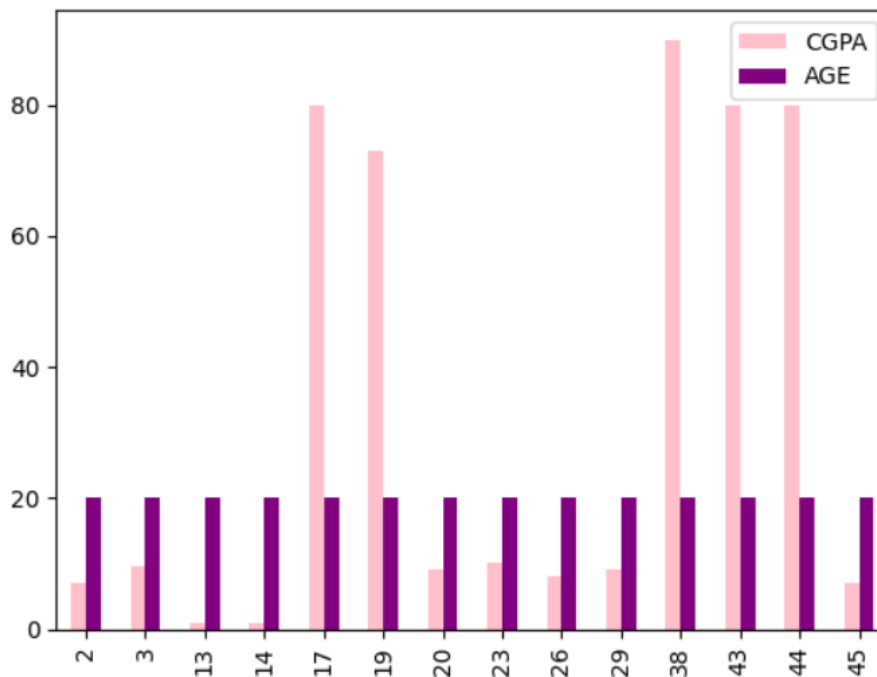


The bar() method draws a vertical bar chart and the barh() method draws a horizontal bar chart of DataFrame d7.

```
d7.plot.bar(color=['pink','purple','blue'])
d7
```

OUTPUT:

	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH	SEMISTER	AADHAAR NO
2	sravankumar7156@gmail.com	Sravan Kumar	21KP1A4488	Rama Chandra Rao	Venkateswaramma	MECH	7.00	20	mech	4	930319053088
3	sandeepyeruva1124@gmail.com	Yeruva sandeep reddy	21KP1A44D1	Yeruva Ajay Kumar reddy	Yeruva Anjali Devi	CSE	9.50	20	CSE	2-3	576154990146
13	kumarvalaparia890@gmail.com	Venkata Aravind Kumar.V	21KP1A44C0	Veeraswamy.v	Lakshmi.v	DS	0.98	20	Data Science	2-2	510305345824
14	patchachinnu3@gmail.com	Patcha Jaswanth	21KP1A4477	Patcha apparao	Patcha sukanya	CSE	0.99	20	Data science	2-2	744020413963
17	shaiksakina05@gmail.com	Shaik sameer	21KP1A44A3	Shaik Rahim babu	Shaik Raziya	DS	80.00	20	DS	2-2	529261464345
19	vallu.srinu756939@gmail.com	Vallu Srinu Silva Subrahmanyam	21KP1A44C1	Vallu Srinivasa Rao	Vallu Surya kumari	DS	73.00	20	Computer Science Engineering& Data Science	4	*****
20	undelachandraobulareddy@gmail.com	Undela Chandra Obula Reddy	21KP1A44B9	Undela Chinna Obula Reddy	Undela GuruLakshmi	DS	9.20	20	Computer Science	2-2	693621780842
23	madhulathasure9@gmail.com	SURE. MADHULATHA	21KP1A44A4	SURE.VISWANADHAM	SURE.SAI LAKSHMI	DS	10.00	20	Data science	2-2	776486062608
26	abdulkhadar6842@gmail.com	Shaik.Abdul Khadar	21KP1A4493	Shaik.Kareem	Shaik.Farjana	ECE	8.00	20	20	2-2	334708289154
29	ynagasasikumar@gmail.com	Y Naga Sasi Kumar	21KP1A44D0	Y Rama mohanarao	Y Lalitha	DS	9.20	20	20	2-2	448172496292
38	abdulabdu22070@gmail.com	Syed.Abdul Rehaman	21KP1A44A6	Syed.Meera Sharif	Bandi.Krishna veni	DS	90.00	20	DS	2-2	347853509974
43	paladugudurga1@gmail.com	P. Durga Sri	21KP1A4473	P. Amareswara rao	P. Seshu Kumari	DS	80.00	20	CSD(Data Science)	2-2	692162661608
44	saidashaik371@gmail.com	SHAIK SAIDA ANWAR BASHA	21KP1A44A2	SHAIK KUDHAN VALI	SHAIK SAIDA HUSSANBI	DS	80.00	20	DATASCIENCE	2-2	466722650274
45	mvkbn1312@gmail.com	R.M.V.K.Brahma	21KP1A4489	Yedukondalu	Nirmala	DS	7.00	20	Data science	2-2	2387 7088

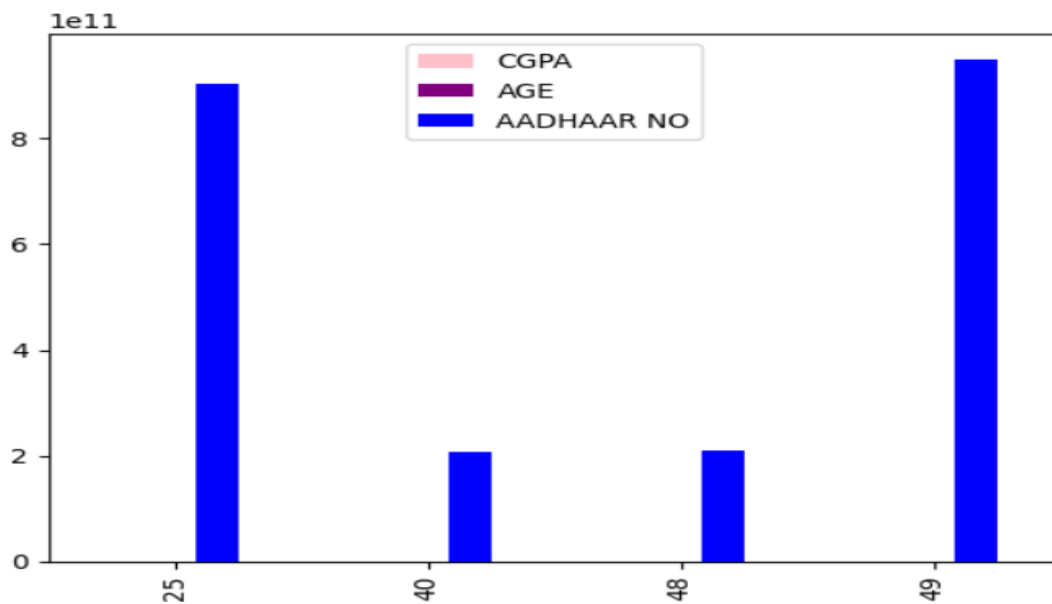


The bar() method draws a vertical bar chart and the barh() method draws a horizontal bar chart of DataFrame d8.

```
d8.plot.bar(color=['pink','purple','blue'])
d8
```

OUTPUT:

	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH	SEMISTER	AADHAAR NO
25	shiakmobin2002@gmail.com	Shaikmobin	21KP1A4497	shaik karimullah	Shaik rihana	DS	8.8	21	Ds	2.2	904355656468
40	rabbanishaik7356@gmail.com	SHAIK RABBANI	21KP1A4499	SHAIK MOHAMMAD HANIF	SHAIK MALIN	DS	9.5	21	CSD	2-2	205933956204
48	sriharshanallabothu@gmail.com	Nallabothu. Sri Harsha	21KP1A4469	Nallabothu. Anjaneyulu	Nallabothu. Anitha	DS	90.0	21	CSD	2-2	208611060176
49	bhuvanstarpuli@gmail.com	Puli bhuvaneswar	21KP1A4484	Puli mallikarjuna	Puli ramadevi	DS	8.3	21	Data science	2.2	950519207474



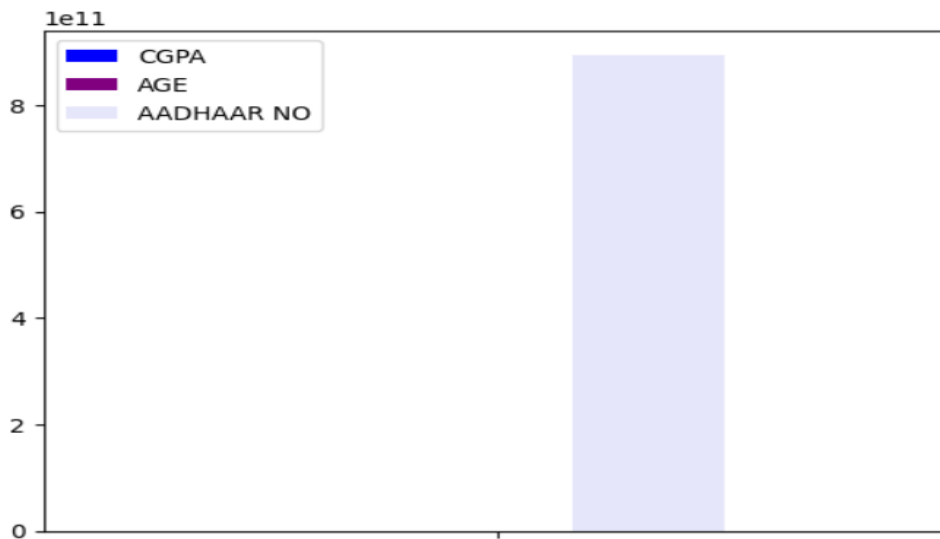
The bar() method draws a vertical bar chart and the barh() method draws a horizontal bar chart of DataFrame d9.

```
d9.plot.bar(color=['blue', 'purple', 'lavender'])
d9
```

OUTPUT:

	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH	SEMISTER	AADHAAR NO
4	sivajibejjanki@gmail.com	B.sivaji	22kp5a4402	B.lakshmaiah	B.veramma	DS	0.72	23	Computer science	2-2	895444662410

--

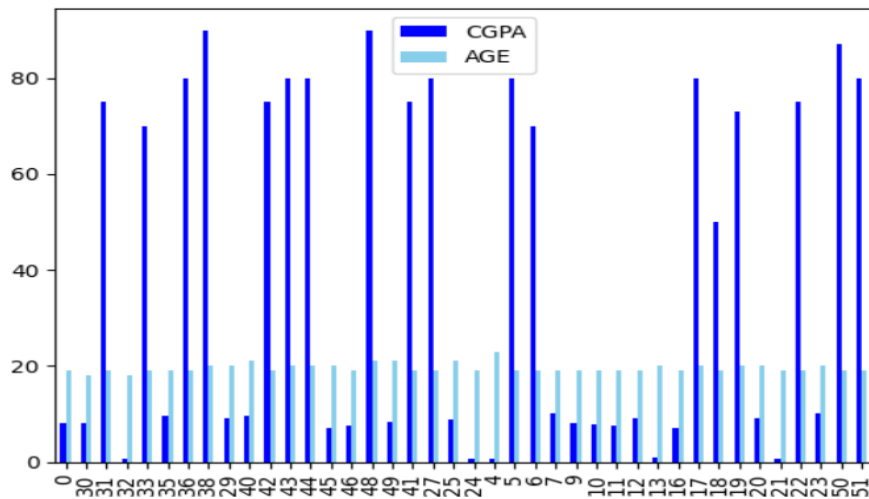


The bar() method draws a vertical bar chart and the barh() method draws a horizontal bar chart of DataFrame df1.

```
df1.plot.bar(color=['blue', 'skyblue', 'pink'])
df1
```

OUTPUT:

	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH	SEMISTER	AADHAAR NO
0	vennachandana1@gmail.com	Venna Chandana	21KP1A44C5	Venna Ramanareddy	Venna Lakshmi Devi	DS	8.00	19	Data science	2-2	636336922883
30	rahamtunnisashaik09@gmail.com	Shaik Rahamtunnisa	21KP1A44A0	Shaik.mahaboobjani	Shaik.munni	DS	8.00	18	Data science	2-2	406976169351
31	harikabangaram313@gmail.com	Harika	22KP5A4401	A.Subramanyam	A.Dhana Bhagyam	DS	75.00	19	Data science	2-2	574930568520
32	indupriya72216@gmail.com	Indu Priya Patcha	21KP1A4476	Appa rao Patcha	Renuka Patcha	DS	0.75	18	Data Science	2-2	573041880949
33	bhavyasrisajja2003@gmail.com	Bhavya sri	21KP1A4490	Mohan krishna	Usha rani	DS	70.00	19	Ds	2-2	274736890047
35	bhanuthanirru@gmail.com	Thanirru Bhanu venkata prasad	21KP1A44B2	T sathyanarayana	T rama devi	DS	9.60	19	19	2-2	357228202835
36	nikitharayapati9@gmail.com	Nikitha Rayapati	21KP1A4487	Rayapati hanumathrao	Rayapati malleswari	DS	80.00	19	Ds	2-2	963360828294
38	abdulabdu22070@gmail.com	Syed.Abdul Rehaman	21KP1A44A6	Syed.Meera Sharif	Bandi.Krishna veni	DS	90.00	20	DS	2-2	347853509974
29	ynagasasikumar@gmail.com	Y Naga Sasi Kumar	21KP1A44D0	Y Rama mohanarao	Y Lalitha	DS	9.20	20	20	2-2	448172496292
40	rabbanishaik7356@gmail.com	SHAIK RABBANI	21KP1A4499	SHAIK MOHAMMAD HANIF	SHAIK MALIN	DS	9.50	21	CSD	2-2	205933956204
42	thiriveedhinagajyothi@gmail.com	T. Nagajyothi	21KP1A44B7	T. Venkayya	T. Ramanamma	DS	75.00	19	DS	4	330477145625
43	paladugudurga1@gmail.com	P. Durga Sri	21KP1A4473	P. Amaraswara rao	P. Seshu Kumari	DS	80.00	20	CSD(Data Science)	2-2	692162661608
44	saidashaik371@gmail.com	SHAIK SAIDA ANWAR BASHA	21KP1A44A2	SHAIK KUDHAN VALI	SHAIK SAIDA HUSSANBI	DS	80.00	20	DATASCIENCE	2-2	466722650274
45	mvkbn1312@gmail.com	R.M.V.K.Brahma Naidu	21KP1A4489	Yedukondalu	Nirmala	DS	7.00	20	Data science	2-2	2387 7088 9424
46	nrajasambasivarao@gmail.com	Narra Raja Samba Siva Rao	21KP1A4471	Narra SrinivasaRao	Narra Ramadevi	DS	7.50	19	CSD (Data science)	4	835457902826
48	sriharshanallabothu@gmail.com	Nallabothu. Sri	21KP1A4469	Nallabothu. Anianevulu	Nallabothu. Anitha	DS	90.00	21	CSD	2-2	208611060176



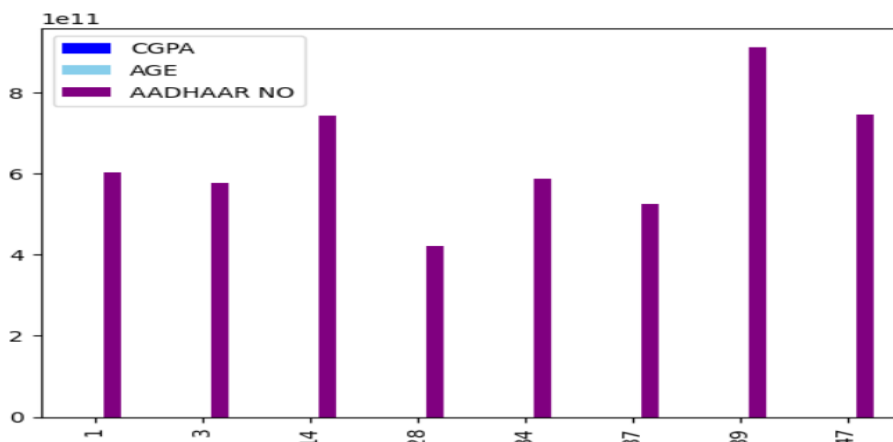
The bar() method draws a vertical bar chart and the barh() method draws a horizontal bar chart of DataFrame d2.

1

```
df2.plot.bar(color=['blue','skyblue','purple'])
df2
```

OUTPUT:

	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH	SEMESTER	AADHAAR NO
1	adilakshmi4765@gmail.com	N.Venkatesh	21KP1A4468	N.Manikya Rao	N.Sri Lakshmi	CSE	83.00	19	CSE-DS	II-II	602515258256
3	sandeepyeruva1124@gmail.com	Yeruva sandeep reddy	21KP1A44D1	Yeruva Ajay Kumar reddy	Yeruva Anjali Devi	CSE	9.50	20	CSE	2-3	576154990146
14	patchachinnu3@gmail.com	Patcha Jaswanth	21KP1A4477	Patcha apparao	Patcha sukanya	CSE	0.99	20	Data science	2-2	744020413963
28	hemasanjushasanikommu828@gmail.com	hema sanjusha	21KP1A4491	musalareddy	sivaparvathi	CSE	73.00	18	cse	2-2	422314863763
34	sudhamshavejendla@gmail.com	Vejendla Devi Sri Sudhamsha	21KP1A44C4	Vejendla Srinivass Rao	Vejendla Laxmi Prasanna	CSE	70.00	19	Cse- Data Science	2_2	587480445790
37	indhupotla123@gmail.com	indhu priya	21KP1A4483	Lakshmanarayana	Sujatha	CSE	72.00	19	cse	2-2	524345891620
39	jaffershaik718@gmail.com	Jaffer shaik	21KP1A4495	shaik.LailaLaha	shaik.Ramjan bee	CSE	70.00	19	cse	2nd	912229276699
47	saisairam068@gmail.com	Sairam	21kp1a44b4	Venkata subbiah	Ravanamma	CSE	10.00	19	Da	2-2	746109575146

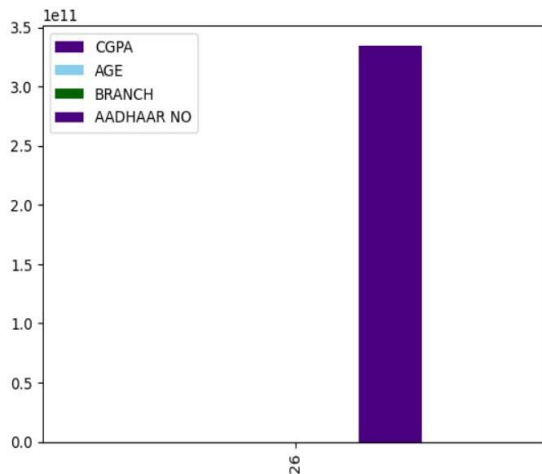


The bar() method draws a vertical bar chart and the barh() method draws a horizontal bar chart of DataFrame df3.

```
df3.plot.bar(color=['indigo','skyblue','darkgreen'])
df3
```

OUTPUT:

	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH	SEMISTER	AADHAAR NO
26	abdukhadar6842@gmail.com	Shaik.Abdul Khadar	21KP1A4493	Shaik.Kareem	Shaik.Farjana	ECE	8.0	20	20	2-2	334708289154

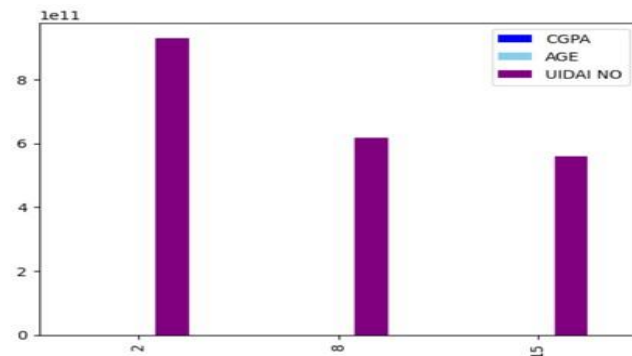


The bar() method draws a vertical bar chart and the barh() method draws a horizontal bar chart of DataFrame d4.

```
df4.plot.bar(color=['blue','skyblue','purple'])
df4
```

OUTPUT:

	Gmail	STUDENT NAME	ROLL NUMBER	FATHER NAME	MOTHER NAME	COURSE	CGPA	AGE	BRANCH	SEMISTER	UIDAI NO
2	sravankumar7156@gmail.com	Sravan Kumar	21KP1A4488	Rama Chandra Rao	Venkateswaramma	MECH	7.0	20	mech	4	930319053088
8	syedtasleem07@gmail.com	Syed Tasleem Afroze	21KP1A44A9	Syed Rahiman	Syed Naseema	MECH	8.0	19	DS	2-2	617020354793
15	manu952041@gmail.com	Pachipulusu Manohar	21KP1A4472	Pachipulusu Prasad	Pachipulusu Bhavani	MECH	8.5	19	19	2-2	559366114423



Value counts:The `value_counts()` function returns an object containing counts of unique values.

*****Counting the unique values of CGPA of df2*****

```
x=df2.CGPA.value_counts()
```

```
x
```

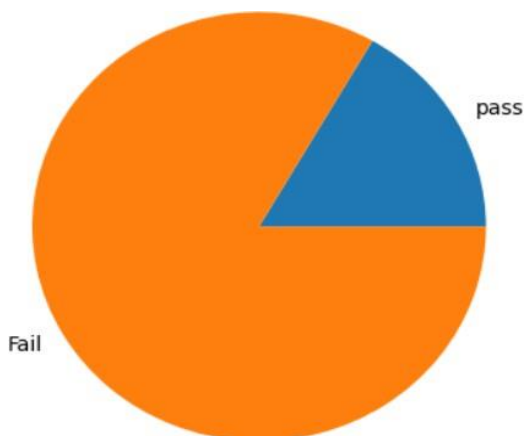
OUTPUT:

```
70.00    2
83.00    1
9.50     1
0.99     1
73.00    1
72.00    1
10.00    1
Name: CGPA, dtype: int64
```

*****A pie plot is a proportional representation of the numerical data in a column. This function wraps matplotlib.*****

```
d12=pd.DataFrame({"Result":["pass","Fail"],"vals":[6,30]})
plt.pie(d12["vals"],labels=d12["Result"])
plt.show()
```

OUTPUT:



```
b=df1.CGPA.value_counts()
b
```

*****Counting the unique values of CGPA of df2*****

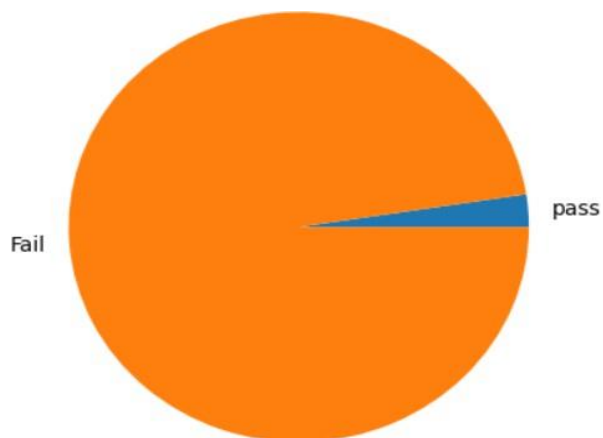
OUTPUT:

```
80.00    7
75.00    4
8.00     3
0.75     2
70.00    2
90.00    2
9.20     2
7.00     2
7.50     2
10.00    2
9.00     1
0.70     1
73.00    1
50.00    1
0.98     1
8.30     1
7.70     1
0.72     1
8.80     1
9.50     1
9.60     1
87.00    1
Name: CGPA, dtype: int64
```

```
d13=pd.DataFrame({"Result":['pass','Fail'], "vals":[1,40]})
plt.pie(d13["vals"],labels=d13["Result"])
plt.show()
```

*****visualizing the results of a data frame d13 (pass and fail) by using a pieplot *****

OUTPUT:



```
d=df4.CGPA.value_counts()
d
```

*****Counting the unique values of CGPA of df4*****

OUTPUT: 7.0 1
8.0 1
8.5 1

```
d22=df.BRANCH.value_counts().head()  
d22
```

*****Counting the unique values of BRANCH of df22*****

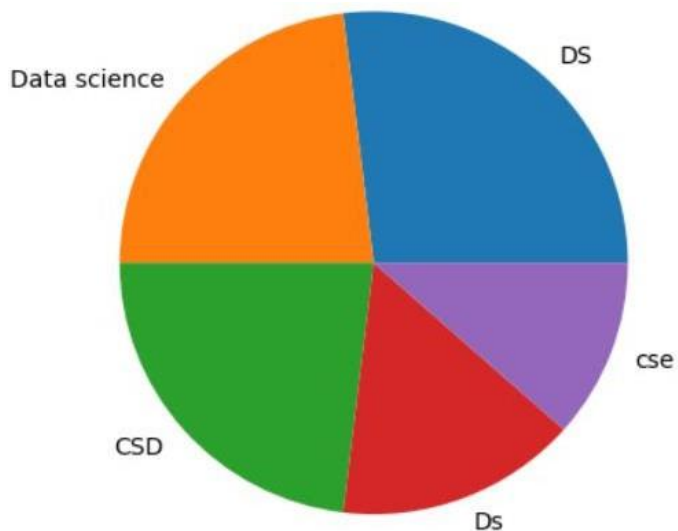
OUTPUT:

```
DS      7  
Data science  6  
CSD      6  
Ds       4  
cse      3  
Name: BRANCH, dtype: int64
```

```
t=plt.pie(d22,labels=['DS','Data science','CSD','Ds','cse'])  
plt.show()
```

*****visualizing the BRANCH labels of data frame d22 by using a pieplot *****

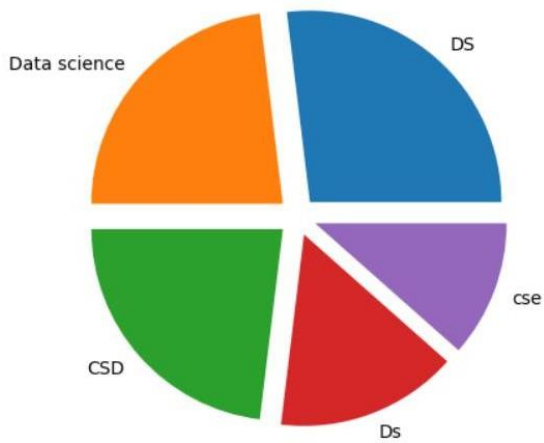
OUTPUT:



```
t=plt.pie(d22,labels=['DS','Data science','CSD','Ds','cse'],explode=[0.1,0.1,0.1,0.1,0.1])  
plt.show()
```

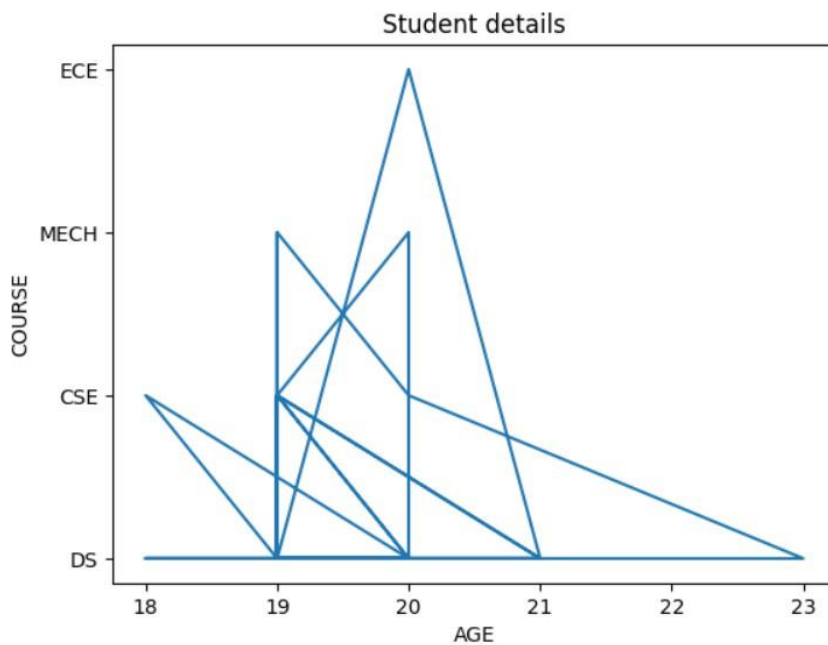

*****visualizing the BRANCH labels of data frame d22 by using a pieplot and explode (separate) the slices from a pie chart for emphasis*****

OUTPUT



```
plt.plot(df['AGE'],df['COURSE'])  
plt.xlabel('AGE')  
plt.ylabel('COURSE')  
plt.title('Student details')  
plt.show()
```

OUTPUT:

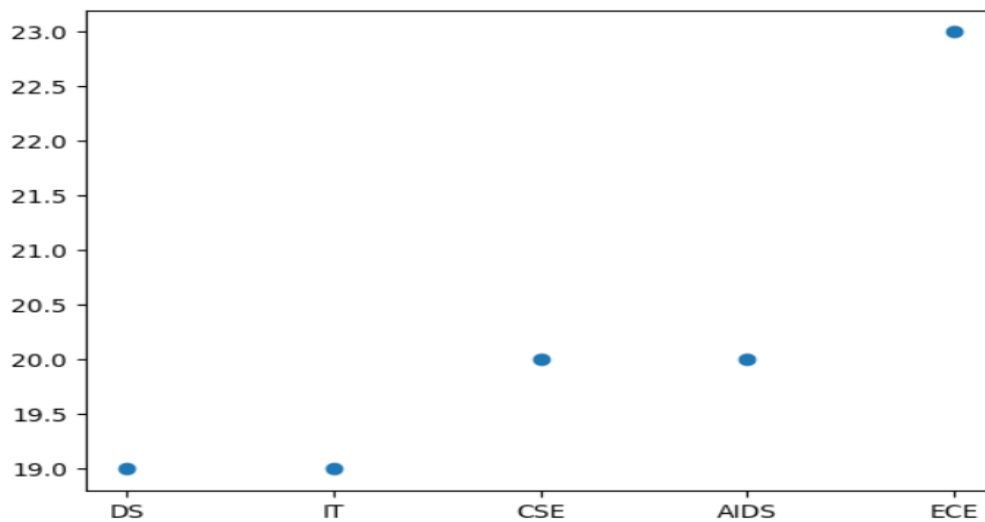


```
BRANCH=['DS','IT','CSE','AIDS','ECE']  
S=df.AGE.head()  
plt.scatter(BRANCH,S)  
plt.show()
```

SCATTER PLOT: A scatter plot is a diagram where each value in the data set is represented by a dot.

*****By using scatterplot plotting the labels of branch*****

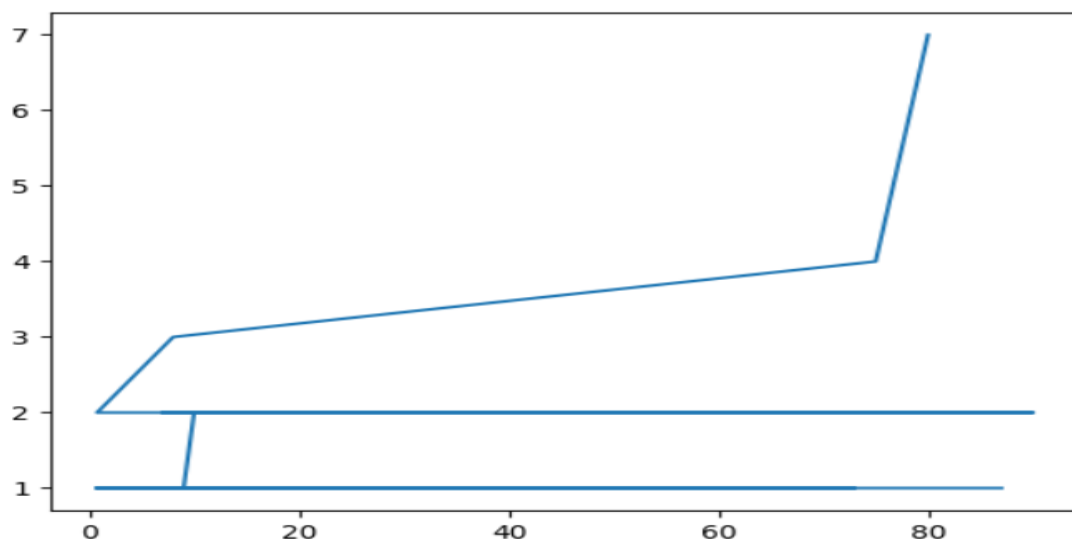
OUTPUT:



```
plt.plot(b)  
plt.show()
```

plotting the CGPA values which are in a data frame b

OUTPUT:



OUTPUT

The output of a “**student database implemented using Python**” can be a comprehensive and organized representation of student information. Utilizing Python's powerful programming capabilities, the output can include details such as student names, IDs, grades, and other relevant data in a structured format. This output might be presented in various forms, such as a text-based report, a spreadsheet, or even a graphical user interface. Python's versatility allows for customization, enabling the display of specific information based on user preferences. Additionally, the output can be designed to facilitate easy analysis and decision-making by incorporating sorting, filtering, and visualization features.

SUMMARY

In conclusion, the implementation of a **“Student database using Python”**, enriched by the capabilities of data analytics, marks a significant stride in modern educational management. This not only ensures the organized storage of student information but also facilitates a nuanced understanding of academic trends through insightful data analysis.

Python's flexibility and efficiency empower educational institutions to tailor the database to their unique needs, while data analytics unveils patterns and correlations that can inform strategic decision-making.

