



☰ Welcome to Colab



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RAM [██████]
Disk [██████]

▼ ^

[]

2026-02-05

[5]

✓ Os

import math

print(math.sqrt(25))

print(math.factorial(5))

print(math.pi)

▼

5.0

120

3.141592653589793

[2]

✓ Os

import random

print(random.randint(1, 10))

print(random.choice([10, 20, 30]))

▼

4

20

[3]

✓ Os

import datetime

today = datetime.date.today()

print(today)

▼

2026-02-05



[6]

✓ Os



import sys

print(sys.version)

▼

... 3.12.12 (main, Oct 10 2025, 08:52:





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2026-02-05

[6]
✓ Os

```
import sys  
  
print(sys.version)
```



3.12.12 (main, Oct 10 2025, 08:52:

[11]

```
import numpy as np  
  
arr = np.array([1, 2, 3])  
  
print(arr)
```



[1 2 3]

Code cell output actions

[9]
✓ Os

```
import pandas as pd  
  
data=pd.Series([10, 20, 30])  
  
print(data)
```



```
0    10  
1    20  
2    30  
dtype: int64
```

[12]
✓ Os

```
arr = np.array([10, 20, 30])
```

```
print(arr.ndim)  
  
print(arr.size)  
  
print(arr.dtype)
```



```
... 1  
3  
int64
```





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Focus the last run cell

[18]

✓ 0s

```
mat= np.array([[1, 2], [3, 4]])  
print(mat)
```



```
[[1 2]  
 [3 4]]
```

[20]

✓ 0s

```
arr = np.arange(1, 7)  
new_arr=arr.reshape(2, 3)  
  
print(new_arr)
```



```
[[1 2 3]  
 [4 5 6]]
```

[21]

✓ 0s



```
a = np.array([1, 2, 3])  
b= np.array([4, 5, 6])  
  
print(a+b)
```



```
... [5 7 9]
```





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[30]

✓ Os

```
import numpy as np
data = np.loadtxt("marks_data.csv",
print(data)
```



```
[[ 1. 78.]
 [ 2. 85.]
 [ 3. 90.]
 [ 4. 66.]
 [ 5. 88.]]
```

[31]

✓ Os

```
import numpy as np
data = np.loadtxt("marks_data.csv",
roll = data[:, 0]

marks = data[:, 1]

print("Roll Numbers:", roll)

print("Marks:", marks)
```



```
Roll Numbers: [1. 2. 3. 4. 5.]
Marks: [78. 85. 90. 66. 88.]
```

[32]

✓ Os

```
/ as np
>adtxt("marks_data.csv", delimiter=",",
>.mean(marks)

age Marks:", average)
```



```
Average Marks: 81.4
```



[34]

✓ Os

```
as np
>adtxt("marks_data.csv", delimiter=",",
st Marks:", np.max(marks))
```





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[32]

✓ 0s

```
import numpy as np  
data = np.loadtxt("marks_data.csv",  
average = np.mean(marks)  
  
print("Average Marks:", average)
```



Average Marks: 81.4



[34]

✓ 0s



```
import numpy as np  
data = np.loadtxt("marks_data.csv", d  
print("Highest Marks:", np.max(marks)  
  
print("Lowest Marks:", np.min(marks))
```

... Highest Marks: 90.0
Lowest Marks: 66.0



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[35]

✓ Os

```
import numpy as np
data = np.loadtxt("marks_data.csv", delimiter=',')

print(data)
grades = np.where(marks >= 90, "A",
                  np.where(marks>= 75, "B",
                           np.where(marks>= 60, "C", "D")))

print("Grades:", grades)
```

▼

```
[[ 1. 78.]
 [ 2. 85.]
 [ 3. 90.]
 [ 4. 66.]
 [ 5. 88.]]
```

```
Grades: ['B' 'B' 'A' 'C' 'B']
```

[36]

✓ Os

```
import numpy as np
data = np.loadtxt("marks_data.csv",
print("Column-wise sum:", np.sum(data, axis=0))

print("Row-wise sum:", np.sum(data, axis=1))
```

▼

```
Column-wise sum: [ 15. 407.]
```

```
Row-wise sum: [79. 87. 93. 70. 93.]
```

[37]

✓ Os

```
import numpy as np
data = np.loadtxt("marks_data.csv",
passed_rolls = roll[marks >= 40]

print("Passed Roll Numbers:", passed_rolls)
```



```
Passed Roll Numbers: [1 2 3 4]
```



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[37]

✓ Os

```
import numpy as np
data = np.loadtxt("marks_data.csv",
passed_rolls = roll[marks >= 40]

print("Passed Roll Numbers:", passed_rolls)
```

▼ Passed Roll Numbers: [1. 2. 3. 4.]

[45]

✓ Os

```
data.csv", delimiter=",", skiprows=1)
100
centage)
```

▼ Percentages: [78. 85. 90. 66. 88.]

[46]

✓ Os



```
numpy as np
np.loadtxt("marks_data.csv", delimiter=",")
Column-wise sum:", np.sum(data, axis=0)
Row-wise sum:", np.sum(data, axis=1))
```

▼

... Column-wise sum: [15. 407.]

Row-wise sum: [79. 87. 93. 70. 93.]





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[45]

✓ Os

percentage)

[46]

✓ Os

```
import numpy as np
data = np.loadtxt("marks_data.csv",
print("Column-wise sum:", np.sum(data,
```

```
print("Row-wise sum:", np.sum(data,
```

[46]

Column-wise sum: [15. 407.]

Row-wise sum: [79. 87. 93. 70. 93.

[50]

✓ Os



```
import numpy as np
arr = np.array([1,2,3,4,5,6,7,8,9])
count=np.sum(arr % 2 == 0)
print("Even Count:",count)
```

[50]



... Even Count: 4





Untitled20.ipynb

RAM
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[4]

06-02-2026



Show hidden output

[10]

✓ Os

```
import pandas as pd

s=pd.Series([10, 20, 30, 40])

print(s)

0    10
1    20
2    30
3    40
dtype: int64
```

[11]

✓ Os

```
import pandas as pd

s=pd.Series([10, 20, 30],index=["I",
                                 "II",
                                 "III"])

print(s)

I    10
II   20
III  30
dtype: int64
```

[25]

✓ Os

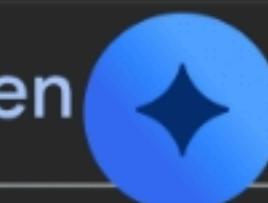


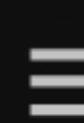
```
import pandas as pd

data = {
    "Names": ["jaya", "rohith", "ahmad"]
    "Age": [50, 40, 45, 56, 75, 85, 46, 56,
}
df = pd.DataFrame(data)
print(df.head())
```



Show hidden output





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▼ ▲

[26]

✓ Os

```
import pandas as pd

data = {
    "Names": ["jaya", "rohith", "ahmad"]
    "Age": [50, 40, 45, 56, 75, 85, 46, 56,
}
df = pd.DataFrame(data)
print(df.tail())
```



	Names	Age
5	ahmad	85
6	jaya	46
7	rohith	56
8	ahmad	35
9	jaya	23

[38]

✓ Os

```
import pandas as pd

data = {
    "Names": ["jaya", "rohith", "ahmad"]
    "Age": [50, 40, 45, 56, 75, 85, 46, 56,
}
df = pd.DataFrame(data)
print(df.shape)
```



(10, 2)

[33]

✓ Os

```
import pandas as pd

data = {
    "Names": ["jaya", "rohith", "ahmad"]
    "Age": [50, 40, 45, 56, 75, 85, 46, 56,
}
df = pd.DataFrame(data)

print(df.columns)
```



Index(['Names', 'Age'], dtype='obj')





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[34]

✓ Os

```
import pandas as pd

data = {
    "Names": ["jaya", "rohith", "ahmad"]
    "Age": [50, 40, 45, 56, 75, 85, 46, 56,
}
df = pd.DataFrame(data)

print(df.dtypes)
```

```
Names      object
Age        int64
dtype: object
```

[36]

✓ Os

```
import pandas as pd

data = {
    "Names": ["jaya", "rohith", "ahmad"]
    "Age": [50, 40, 45, 56, 75, 85, 46, 56,
}
df = pd.DataFrame(data)

print(df.info())
```

```
<class 'pandas.core.frame.DataFrame'
RangeIndex: 10 entries, 0 to 9
Data columns (total 2 columns):
 #   Column  Non-Null Count  Dtype  
---  --     --          --    
 0   Names    10 non-null    object 
 1   Age      10 non-null    int64  
dtypes: int64(1), object(1)
memory usage: 292.0+ bytes
None
```

[40]

✓ Os

```
import pandas as pd

data = {
    "Names": [
```

```
    "jaya", "rohith", "ahmad"]
```



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[40]

✓ Os

```
import pandas as pd

data = {
    "Names": ["jaya", "rohith", "ahmad"]
    "Age": [50, 40, 45, 56, 75, 85, 46, 56,
}
df = pd.DataFrame(data)

print(df["Age"])
```

▼

0	50
1	40
2	45
3	56
4	75
5	85
6	46
7	56
8	35
9	23

Name: Age, dtype: int64

[41]

✓ Os

```
import pandas as pd

data = {
    "Names": ["jaya", "rohith", "ahmad"]
    "Age": [50, 40, 45, 56, 75, 85, 46, 56,
}
df = pd.DataFrame(data)

print(df.loc[0])
```

▼

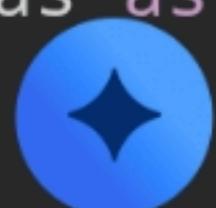
Names	jaya
Age	50
Name:	0, dtype: object

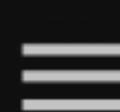
[42]

✓ Os

```
import pandas as pd

data = {
```





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[42]

✓ Os

```
import pandas as pd

data = {
    "Names": ["jaya", "rohith", "ahmad"]
    "Age": [50, 40, 45, 56, 75, 85, 46, 56,
}
df = pd.DataFrame(data)

print(df[df["Age"] > 65])
```



	Names	Age
4	rohith	75
5	ahmad	85



[45]

✓ Os

```
import pandas as pd

data = {
    "Names": ["jaya", "rohith", "ahmad"]
    "Age": [50, 40, 45, 56, 75, 85, 46, 56,
}
df["Result"] = df["Age"] >= 40

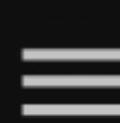
print(df)
```



...

	Names	Age	Result
0	jaya	50	True
1	rohith	40	True
2	ahmad	45	True
3	jaya	56	True
4	rohith	75	True
5	ahmad	85	True
6	jaya	46	True
7	rohith	56	True
8	ahmad	35	False
9	jaya	23	False





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9 jaya 23 False

[47]

✓ Os

```
import pandas as pd

df= pd.read_csv("/content/students-1

print(df)
```

▼

1	Name	Admission No	Branch	Marks
shitha		19709	BSC	78
Kumari		19760	BSC	85
Nikshmi		19842	BSC	90
RASAD		20215	BCom	66
Akhila		20170	BCom	88
Muskan		19843	BSC	78
Deepthi		19887	BCA	85
Thanya		20522	BSC	90
Shereen		19888	BCA	66
Lokesha		19860	BSC	88

[53]

✓ Os

```
play button icon

pandas as pd

.read_csv("/content/students-1.csv")

"Means:", df["Marks"].mean()

"Max:", df["Marks"].max()

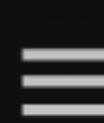
"Min:", df["Marks"].min()

"Sum:", df["Marks"].sum()
```

▼

```
... Means: 81.4
Max: 90
Min: 66
Sum: 814
```





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Min: 66

Sum: 814

[69]

✓ Os

pandas as pd

```
.read_csv("/content/students-1.csv")
df.groupby("Branch")["Marks"].mean()
df.groupby("Branch")["Marks"].sum()
df.groupby("Branch")["Marks"].min()
df.groupby("Branch")["Marks"].sum()
```

▼

Branch

BCA 75.500000

BCom 77.000000

BSC 84.833333

Name: Marks, dtype: float64

Branch

BCA 151

BCom 154

BSC 509

Name: Marks, dtype: int64

Branch

BCA 66

BCom 66

BSC 78

Name: Marks, dtype: int64

Branch

BCA 151

BCom 154

BSC 509

Name: Marks, dtype: int64

[74]

✓ Os

import pandas as pd

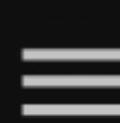
df = pd.read_csv("/content/students-

df["Grade"] = df["Marks"].apply(

lambda x: "A" if x >= 90 else "B")

print(df)





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[74]

✓ Os

```
import pandas as pd

df = pd.read_csv("/content/students-1.csv")

df["Grade"] = df["Marks"].apply(
    lambda x: "A" if x >= 90 else "B")

print(df)
```



	Admission No	Branch	Marks	Grade
	19709	BSC	78	B
	19760	BSC	85	B
	19842	BSC	90	A
	20215	BCom	66	B
	20170	BCom	88	B
	19843	BSC	78	B
	19887	BCA	85	B
	20522	BSC	90	A
	19888	BCA	66	B
	19860	BSC	88	B

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[78]



```
ndas as pd

ead_csv("/content/students-1.csv")
verage:", df["Marks"].mean())
pper:", df.loc[df["Marks"].idxmax()])
ssed Students.")
df["Marks"] > 85])
```



... Average: 81.4

Topper: Sno

Full Name Alpuri Sri lakshmi

Admission No 1984

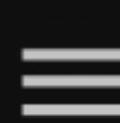
Branch BS

Marks 9

Name: 2, dtype: object

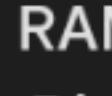
Passed Students.



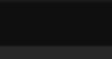


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	19842	BSC	90	A
	20215	BCom	66	B
	20170	BCom	88	B
	19843	BSC	78	B
	19887	BCA	85	B
	20522	BSC	90	A
	19888	BCA	66	B
	19860	BSC	88	B



[78]



ndas as pd

```
ead_csv("/content/students-1.csv")
verage:", df["Marks"].mean())
pper:", df.loc[df["Marks"].idxmax()])
ssed Students.")
df["Marks"] > 85])
```

▼

... Average: 81.4

Topper: Sno

Full Name Alpuri Sri lakshmi

Admission No 1984

Branch BS

Marks 9

Name: 2, dtype: object

Passed Students.

Sno Full Name Admis

2 3 Alpuri Sri lakshmi

4 5 Amarachinta Akhila

7 8 Anumula Chaithanya

9 10 Arwety Sailokesh

