

```
In [8]: ▶ import numpy as np
x = [1,2,3,4]
x1 = np.asfarray(x)
print(x1)
```

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

```
In [1]: ▶ import numpy as np
x = [1,2,3,4]
a = np.asarray(x)
b = ([1,2],[2,3])
c = np.asarray(b)
print(a)
print(c)
```

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

```
In [12]: ▶ import numpy as np
arr = np.array([1, 8, 3, 3, 5])
print('Original Array : ', arr)
arr = np.append(arr, 7)
print('New Array: ',arr)
```

```
Original Array : [1 8 3 3 5]
New Array: [1 8 3 3 5 7]
```

```
In [16]: ▶ import numpy as np
array1 = np.array([2,3,1,5,7])
array2 = [4,9]
print(np.in1d(array1, array2))
```

```
[False False False False False]
```

```
In [17]: ▶ import numpy as np
a = np.array([2, 4, 7, 1, 4])
b = np.array([7, 2, 9, 0, 5])
print("Original arrays", a, ' ', b)
c = np.intersect1d(a, b)
print("Common values", c)
```

```
Original arrays [2 4 7 1 4] [7 2 9 0 5]
Common values [2 7]
```

```
In [70]: ▶ import numpy as np
b = np.array([7, 2, 9, 0, 5])
x = np.power(b,2)
print(x)
```

```
[49  4 81  0 25]
```

```
In [2]: ▶ import numpy as np
x = ['Bibek', 'Subhum', 'Umang']
x1 = np.tile(x,3)
print(x1)
```

```
['Bibek' 'Subhum' 'Umang' 'Bibek' 'Subhum' 'Umang' 'Bibek' 'Subhum'
 'Umang']
```

```
In [22]: ► import pandas as pd
df = pd.read_csv('Job Placement data.csv')
print(df.columns)
```

```
Index(['gender', 'ssc_percentage', 'ssc_board', 'hsc_percentage', 'hsc_board',
      'hsc_subject', 'degree_percentage', 'undergrad_degree',
      'work_experience', 'emp_test_percentage', 'specialisation',
      'mba_percent', 'status'],
      dtype='object')
```

```
In [23]: ► print(df.info())
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 215 entries, 0 to 214
Data columns (total 13 columns):
#   Column                Non-Null Count  Dtype
---  -
0   gender                 215 non-null   object
1   ssc_percentage         215 non-null   float64
2   ssc_board              215 non-null   object
3   hsc_percentage         215 non-null   float64
4   hsc_board              215 non-null   object
5   hsc_subject            215 non-null   object
6   degree_percentage     215 non-null   float64
7   undergrad_degree       215 non-null   object
8   work_experience        215 non-null   object
9   emp_test_percentage    215 non-null   float64
10  specialisation         215 non-null   object
11  mba_percent            215 non-null   float64
12  status                 215 non-null   object
dtypes: float64(5), object(8)
memory usage: 22.0+ KB
None
```

```
In [69]: ► third = df.loc[2]
print(third)
```

```
gender                M
ssc_percentage        65.0
ssc_board             Central
hsc_percentage        68.0
hsc_board             Central
hsc_subject           Arts
degree_percentage     64.0
undergrad_degree      Comm&Mgmt
work_experience        No
emp_test_percentage   75.0
specialisation        Mkt&Fin
mba_percent           57.8
status                Placed
Name: 2, dtype: object
```

```
In [26]: ► print(df.shape)
```

```
(215, 13)
```

```
In [28]: ► small_df = df[['gender', 'ssc_percentage', 'ssc_board']]
print("Smaller DataFrame:")
print(small_df.head(10))
```

Smaller DataFrame:

| | gender | ssc_percentage | ssc_board |
|---|--------|----------------|-----------|
| 0 | M | 67.00 | Others |
| 1 | M | 79.33 | Central |
| 2 | M | 65.00 | Central |
| 3 | M | 56.00 | Central |
| 4 | M | 85.80 | Central |
| 5 | M | 55.00 | Others |
| 6 | F | 46.00 | Others |
| 7 | M | 82.00 | Central |
| 8 | M | 73.00 | Central |
| 9 | M | 58.00 | Central |

```
In [64]: ► print(df.head(10))
```

| | gender | ssc_percentage | ssc_board | hsc_percentage | hsc_board | hsc_subject \ |
|---|--------|----------------|-----------|----------------|-----------|---------------|
| 0 | M | 67.00 | Others | 91.00 | Others | Commerce |
| 1 | M | 79.33 | Central | 78.33 | Others | Science |
| 2 | M | 65.00 | Central | 68.00 | Central | Arts |
| 3 | M | 56.00 | Central | 52.00 | Central | Science |
| 4 | M | 85.80 | Central | 73.60 | Central | Commerce |
| 5 | M | 55.00 | Others | 49.80 | Others | Science |
| 6 | F | 46.00 | Others | 49.20 | Others | Commerce |
| 7 | M | 82.00 | Central | 64.00 | Central | Science |
| 8 | M | 73.00 | Central | 79.00 | Central | Commerce |
| 9 | M | 58.00 | Central | 70.00 | Central | Commerce |

| | degree_percentage | undergrad_degree | work_experience | emp_test_percentage \ |
|---|-------------------|------------------|-----------------|-----------------------|
| 0 | 58.00 | Sci&Tech | No | 55.00 |
| 1 | 77.48 | Sci&Tech | Yes | 86.50 |
| 2 | 64.00 | Comm&Mgmt | No | 75.00 |
| 3 | 52.00 | Sci&Tech | No | 66.00 |
| 4 | 73.30 | Comm&Mgmt | No | 96.80 |
| 5 | 67.25 | Sci&Tech | Yes | 55.00 |
| 6 | 79.00 | Comm&Mgmt | No | 74.28 |
| 7 | 66.00 | Sci&Tech | Yes | 67.00 |
| 8 | 72.00 | Comm&Mgmt | No | 91.34 |
| 9 | 61.00 | Comm&Mgmt | No | 54.00 |

| | specialisation | mba_percent | status |
|---|----------------|-------------|------------|
| 0 | Mkt&HR | 58.80 | Placed |
| 1 | Mkt&Fin | 66.28 | Placed |
| 2 | Mkt&Fin | 57.80 | Placed |
| 3 | Mkt&HR | 59.43 | Not Placed |
| 4 | Mkt&Fin | 55.50 | Placed |
| 5 | Mkt&Fin | 51.58 | Not Placed |
| 6 | Mkt&Fin | 53.29 | Not Placed |
| 7 | Mkt&Fin | 62.14 | Placed |
| 8 | Mkt&Fin | 61.29 | Placed |
| 9 | Mkt&Fin | 52.21 | Not Placed |

```
In [33]: n_df = df.sort_values(by=['emp_test_percentage'])
print(n_df)
```

| | gender | ssc_percentage | ssc_board | hsc_percentage | hsc_board | hsc_subject | \ |
|-----|--------|----------------|-----------|----------------|-----------|-------------|---|
| 20 | M | 62.0 | Others | 65.0 | Others | Commerce | |
| 190 | F | 64.0 | Others | 70.2 | Central | Commerce | |
| 99 | M | 54.0 | Central | 82.0 | Others | Commerce | |
| 19 | M | 60.0 | Others | 67.0 | Others | Arts | |
| 32 | F | 61.0 | Central | 81.0 | Central | Commerce | |
| .. | ... | ... | ... | ... | ... | ... | |
| 4 | M | 85.8 | Central | 73.6 | Central | Commerce | |
| 206 | M | 41.0 | Central | 42.0 | Central | Science | |
| 118 | M | 76.0 | Central | 80.0 | Central | Science | |
| 24 | M | 76.5 | Others | 97.7 | Others | Science | |
| 152 | F | 75.4 | Others | 60.5 | Central | Science | |

| | degree_percentage | undergrad_degree | work_experience | emp_test_percentage | \ |
|-----|-------------------|------------------|-----------------|---------------------|---|
| 20 | 66.00 | Comm&Mgmt | No | 50.00 | |
| 190 | 61.00 | Comm&Mgmt | No | 50.00 | |
| 99 | 63.00 | Sci&Tech | No | 50.00 | |
| 19 | 70.00 | Comm&Mgmt | Yes | 50.48 | |
| 32 | 66.40 | Comm&Mgmt | No | 50.89 | |
| .. | ... | ... | ... | ... | |
| 4 | 73.30 | Comm&Mgmt | No | 96.80 | |
| 206 | 60.00 | Comm&Mgmt | No | 97.00 | |
| 118 | 78.00 | Sci&Tech | Yes | 97.00 | |
| 24 | 78.86 | Sci&Tech | No | 97.40 | |
| 152 | 84.00 | Sci&Tech | No | 98.00 | |

| | specialisation | mba_percent | status |
|-----|----------------|-------------|------------|
| 20 | Mkt&HR | 56.70 | Placed |
| 190 | Mkt&Fin | 62.50 | Not Placed |
| 99 | Mkt&Fin | 59.47 | Not Placed |
| 19 | Mkt&Fin | 77.89 | Placed |
| 32 | Mkt&HR | 62.21 | Placed |
| .. | ... | ... | ... |
| 4 | Mkt&Fin | 55.50 | Placed |
| 206 | Mkt&Fin | 53.39 | Not Placed |
| 118 | Mkt&HR | 70.48 | Placed |
| 24 | Mkt&Fin | 74.01 | Placed |
| 152 | Mkt&Fin | 65.25 | Placed |

[215 rows x 13 columns]

```
In [50]: print(df[df['emp_test_percentage']>50])
```

| | | | | | | |
|-----|-----|-------|---------|-------|---------|----------|
| 4 | M | 85.80 | Central | 73.60 | Central | Commerce |
| .. | ... | ... | ... | ... | ... | ... |
| 210 | M | 80.60 | Others | 82.00 | Others | Commerce |
| 211 | M | 58.00 | Others | 60.00 | Others | Science |
| 212 | M | 67.00 | Others | 67.00 | Others | Commerce |
| 213 | F | 74.00 | Others | 66.00 | Others | Commerce |
| 214 | M | 62.00 | Central | 58.00 | Others | Science |

| | degree_percentage | undergrad_degree | work_experience | emp_test_percentage |
|-----|-------------------|------------------|-----------------|---------------------|
| \ | | | | |
| 0 | 58.00 | Sci&Tech | No | 55.0 |
| 1 | 77.48 | Sci&Tech | Yes | 86.5 |
| 2 | 64.00 | Comm&Mgmt | No | 75.0 |
| 3 | 52.00 | Sci&Tech | No | 66.0 |
| 4 | 73.30 | Comm&Mgmt | No | 96.8 |
| .. | ... | ... | ... | ... |
| 210 | 77.60 | Comm&Mgmt | No | 91.0 |
| 211 | 72.00 | Sci&Tech | No | 74.0 |
| 212 | 73.00 | Comm&Mgmt | Yes | 59.0 |
| 213 | 58.00 | Comm&Mgmt | No | 70.0 |

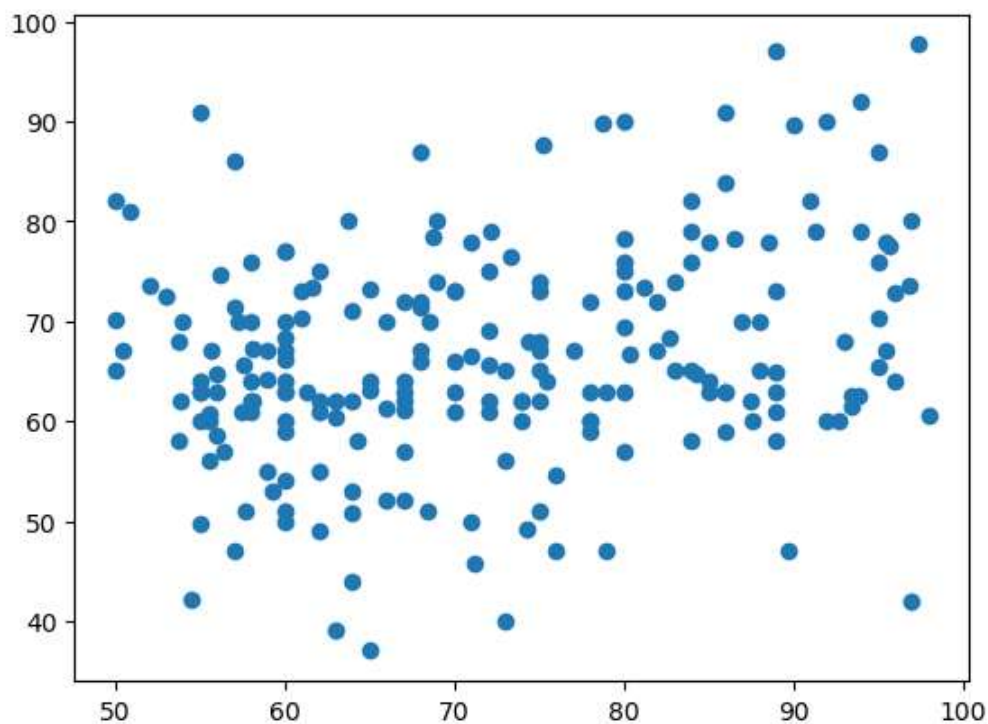
```
In [52]: print(df[(df['emp_test_percentage']<60) & (df['ssc_percentage']>50)])
```

| | gender | ssc_percentage | ssc_board | hsc_percentage | hsc_board | hsc_subject |
|-----|--------|----------------|-----------|----------------|-----------|-------------|
| 0 | M | 67.00 | Others | 91.00 | Others | Commerce |
| 5 | M | 55.00 | Others | 49.80 | Others | Science |
| 9 | M | 58.00 | Central | 70.00 | Central | Commerce |
| 19 | M | 60.00 | Others | 67.00 | Others | Arts |
| 20 | M | 62.00 | Others | 65.00 | Others | Commerce |
| 22 | F | 69.80 | Others | 60.80 | Others | Science |
| 30 | F | 64.00 | Central | 73.50 | Central | Commerce |
| 32 | F | 61.00 | Central | 81.00 | Central | Commerce |
| 37 | F | 79.00 | Central | 76.00 | Central | Science |
| 38 | F | 73.00 | Others | 58.00 | Others | Science |
| 45 | F | 76.00 | Central | 64.00 | Central | Science |
| 59 | M | 52.60 | Central | 65.58 | Others | Science |
| 62 | F | 86.50 | Others | 64.20 | Others | Science |
| 84 | M | 70.00 | Central | 63.00 | Others | Science |
| 88 | F | 66.00 | Central | 62.00 | Central | Commerce |
| 94 | M | 58.00 | Central | 62.00 | Central | Commerce |
| 99 | M | 54.00 | Central | 82.00 | Others | Commerce |
| 102 | F | 77.00 | Others | 61.00 | Others | Commerce |

```
In [79]: x = df[df['status']=='Placed'].count()
y = df[df['status']=='Not Placed'].count()
z = x/y
print("The ration of placed and notplaced are ")
print(z[0])
```

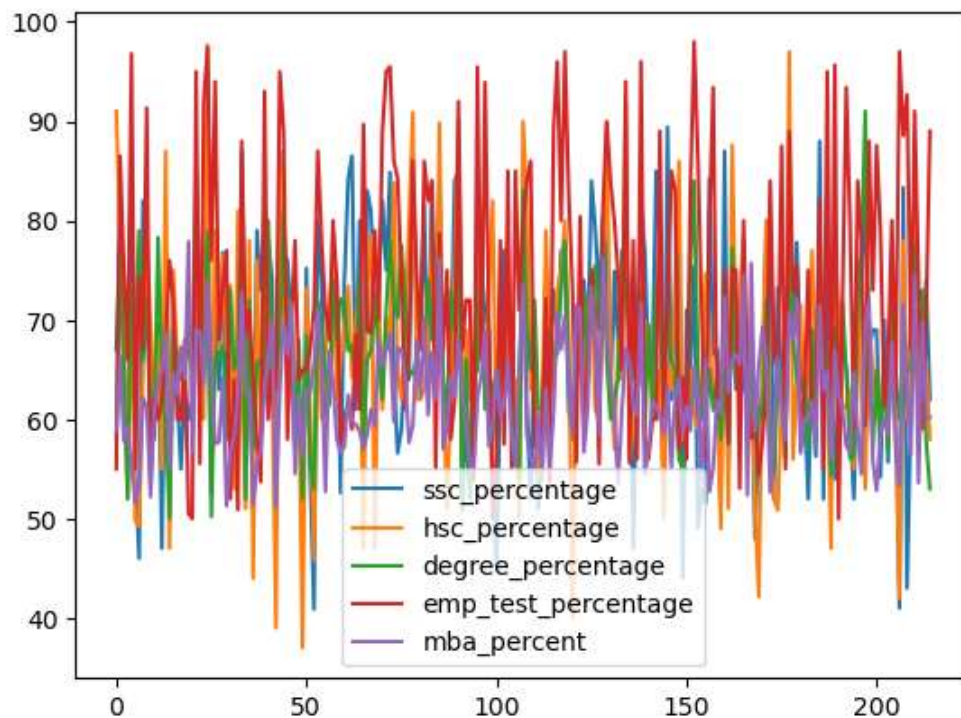
The ration of placed and notplaced are
2.208955223880597

```
In [46]: import pandas as pd
import matplotlib.pyplot as mt
df = pd.read_csv('Job Placement data.csv')
x = df['emp_test_percentage']
y = df['hsc_percentage']
mt.scatter(x,y)
mt.show()
```



```
In [36]: ▶ import pandas as pd
import matplotlib.pyplot as mt
df = pd.read_csv('Job Placement data.csv')
df.plot()
```

Out[36]: <AxesSubplot:>



```
In [49]: ▶ import pandas as pd
import matplotlib.pyplot as mt
df = pd.read_csv('Job Placement data.csv')
df['emp_test_percentage'].plot(kind='hist')
```

Out[49]: <AxesSubplot:ylabel='Frequency'>

