# DS Lab Week #2

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**Solved Examples**

1)

1.py

Week 2 > solved > 1.py > ...

```
1  import pandas as pd
2  import numpy as np
3  s=pd.Series([3,9,-2,10,5])
4  print(s.sum())
5  print(s.min())
6  print(s.max())
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
190905494@V310Z-000:~/Documents/DS$ python3 "./Week 2/solved/1.py"
25
-2
10
190905494@V310Z-000:~/Documents/DS$
```

2)

2.py

Week 2 > solved > 2.py > ...

```
1  import pandas as pd
2  data = [['Dinesh',10],['Nithya',12],['Raji',13]]
3  df = pd.DataFrame(data,columns=['Name','Age'])
4  print(df)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
190905494@V310Z-000:~/Documents/DS$ python3 "./Week 2/solved/2.py"
     Name  Age
0  Dinesh   10
1  Nithya   12
2    Raji   13
190905494@V310Z-000:~/Documents/DS$
```

3)

3.py

Week 2 > solved > 3.py > ...

```python
import pandas as pd
data = {'Name':['Kavitha', 'Sudha', 'Raju','Vignesh'],'Age':[28,34,29,42]}
df = pd.DataFrame(data, index=['rank1','rank2','rank3','rank4'])
print(df)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
190905494@V310Z-000:~/Documents/DS$ python3 "./Week 2/solved/3.py"
         Name  Age
rank1  Kavitha   28
rank2    Sudha   34
rank3     Raju   29
rank4  Vignesh   42
190905494@V310Z-000:~/Documents/DS$
```

4)

4.py

Week 2 > solved > 4.py > ...

```python
import pandas as pd
import numpy as np
df1=pd.DataFrame({'A':pd.Timestamp('20130102'),'B':np.array([3]*4,dtype='int32'),
'C':pd.Categorical(['Male','Female','Male','Female'])})
print(df1.shape)
print(df1.dtypes)
print(df1.head())
print(df1.tail())
print(df1.describe())
print(df1.T)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
190905494@V310Z-000:~/Documents/DS$ python3 "./Week 2/solved/4.py"
(4, 3)
A    datetime64[ns]
B             int32
C          category
dtype: object
           A  B       C
0 2013-01-02  3    Male
1 2013-01-02  3  Female
2 2013-01-02  3    Male
3 2013-01-02  3  Female
           A  B       C
0 2013-01-02  3    Male
1 2013-01-02  3  Female
2 2013-01-02  3    Male
3 2013-01-02  3  Female
         B
count  4.0
mean   3.0
std    0.0
min    3.0
25%    3.0
50%    3.0
75%    3.0
max    3.0
                    0                    1                    2                    3
A  2013-01-02 00:00:00  2013-01-02 00:00:00  2013-01-02 00:00:00  2013-01-02 00:00:00
B                   3                    3                    3                    3
C                Male               Female                 Male               Female
190905494@V310Z-000:~/Documents/DS$
```

5)

5.py

Week 2 > solved > 5.py > ...

```python
import pandas as pd
import numpy as np

dates=pd.date_range('20130101', periods=100)
df = pd.DataFrame(np.random.randn(100,4), index=dates, columns=list('ABCD'))

#To view first 5 records
print(df.head())

#To view last 5 records
df.tail()

#To view the index
print(df.index)

#To view the column names
print(df.columns)

#To transpose the df
print(df.T)

#Sorting by Axis
print(df.sort_index(axis=1, ascending=False))

#Sorting by Values
print(df.sort_values(by='B'))

#Slicing the rows
print(df[0:3]) #which slice first 3 records (rows)

#Slicing with index name
print(df['20130105':'20130110'])

#Slicing with row and column index (like 2D Matrix)
print(df.iloc[0])# will fetch entire 1 st row
print(df.iloc[0,:2])# will fetch 1 st row, first 2 columns
print(df.iloc[0,0])# will fetch 1 st row, 1 st column element (single element)
```

```python
#Selecting a single column
print(df['A'])# which yields a Series

#Selecting more than one column
print(df[['A','B']])# entire 2 columns

#Selecting more than one column, with selected number of records
print(df[['A','B']][:5])# first 5 records
print(df.loc['20130101':'20130105',['A','B']][:5])# first 5 records
```

```
[1 2 3]
190905494@V310Z-000:~/Documents/DS$ python3 "./Week 2/solved/5.py"
                   A         B         C         D
2013-01-01  0.878642  0.511388 -0.876408  1.338585
2013-01-02  1.695924 -0.478135 -0.399319  0.220659
2013-01-03  0.234318 -0.004401  0.252214 -1.439636
2013-01-04 -0.130358 -0.361391  0.405051  0.659826
2013-01-05  1.406443  1.955448 -0.429377 -1.821807
DatetimeIndex(['2013-01-01', '2013-01-02', '2013-01-03', '2013-01-04',
               '2013-01-05', '2013-01-06', '2013-01-07', '2013-01-08',
               '2013-01-09', '2013-01-10', '2013-01-11', '2013-01-12',
               '2013-01-13', '2013-01-14', '2013-01-15', '2013-01-16',
               '2013-01-17', '2013-01-18', '2013-01-19', '2013-01-20',
               '2013-01-21', '2013-01-22', '2013-01-23', '2013-01-24',
               '2013-01-25', '2013-01-26', '2013-01-27', '2013-01-28',
               '2013-01-29', '2013-01-30', '2013-01-31', '2013-02-01',
               '2013-02-02', '2013-02-03', '2013-02-04', '2013-02-05',
               '2013-02-06', '2013-02-07', '2013-02-08', '2013-02-09',
               '2013-02-10', '2013-02-11', '2013-02-12', '2013-02-13',
               '2013-02-14', '2013-02-15', '2013-02-16', '2013-02-17',
               '2013-02-18', '2013-02-19', '2013-02-20', '2013-02-21',
               '2013-02-22', '2013-02-23', '2013-02-24', '2013-02-25',
               '2013-02-26', '2013-02-27', '2013-02-28', '2013-03-01',
               '2013-03-02', '2013-03-03', '2013-03-04', '2013-03-05',
               '2013-03-06', '2013-03-07', '2013-03-08', '2013-03-09',
               '2013-03-10', '2013-03-11', '2013-03-12', '2013-03-13',
               '2013-03-14', '2013-03-15', '2013-03-16', '2013-03-17',
               '2013-03-18', '2013-03-19', '2013-03-20', '2013-03-21',
               '2013-03-22', '2013-03-23', '2013-03-24', '2013-03-25',
               '2013-03-26', '2013-03-27', '2013-03-28', '2013-03-29',
               '2013-03-30', '2013-03-31', '2013-04-01', '2013-04-02',
               '2013-04-03', '2013-04-04', '2013-04-05', '2013-04-06',
               '2013-04-07', '2013-04-08', '2013-04-09', '2013-04-10'],
              dtype='datetime64[ns]', freq='D')
Index(['A', 'B', 'C', 'D'], dtype='object')
```

```
   2013-01-01  2013-01-02  2013-01-03  2013-01-04  2013-01-05  2013-01-06  ...  2013-04-05  2013-04-06  2013-04-07  2013-04-08  2013-04-09  2013-04-10
A    0.878642    1.695924    0.234318   -0.130358    1.406443    0.454844  ...    1.234119    0.692092    0.125653    0.526677    1.468849   -0.352407
B    0.511388   -0.478135   -0.004401   -0.361391    1.955448   -0.491199  ...    0.885869   -1.827626    0.378323   -0.440210    0.204442    0.591777
C   -0.876408   -0.399319    0.252214    0.405051   -0.429377    0.155589  ...    1.405954    0.159889   -0.622464    0.496574    0.483866    2.150665
D    1.338585    0.220659   -1.439636    0.659826   -1.821807   -1.582683  ...   -0.698958   -2.236643   -0.521101    0.674986    0.099590   -0.234479

[4 rows x 100 columns]
```

```
                   D         C         B         A
2013-01-01  1.338585 -0.876408  0.511388  0.878642
2013-01-02  0.220659 -0.399319 -0.478135  1.695924
2013-01-03 -1.439636  0.252214 -0.004401  0.234318
2013-01-04  0.659826  0.405051 -0.361391 -0.130358
2013-01-05 -1.821807 -0.429377  1.955448  1.406443
...              ...       ...       ...       ...
2013-04-06 -2.236643  0.159889 -1.827626  0.692092
2013-04-07 -0.521101 -0.622464  0.378323  0.125653
2013-04-08  0.674986  0.496574 -0.440210  0.526677
2013-04-09  0.099590  0.483866  0.204442  1.468849
2013-04-10 -0.234479  2.150665  0.591777 -0.352407

[100 rows x 4 columns]
                   A         B         C         D
2013-03-11 -1.310714 -2.790471  1.271921  0.080402
2013-02-11 -0.200811 -2.547877  0.420849  1.284503
2013-03-01  0.195212 -2.398179 -1.636601 -1.133836
2013-04-01  1.692357 -2.008763 -0.255291 -2.076145
2013-01-21 -0.499943 -1.989480 -1.123403  0.907677
...              ...       ...       ...       ...
2013-01-07 -0.788440  1.784208 -0.764476  0.386308
2013-01-05  1.406443  1.955448 -0.429377 -1.821807
2013-03-31 -0.511341  2.016282  1.271057  0.139842
2013-03-08 -0.669768  2.252251 -0.191580 -0.328402
2013-02-22 -1.620948  2.854501  0.364292  1.918277

[100 rows x 4 columns]
                   A         B         C         D
2013-01-01  0.878642  0.511388 -0.876408  1.338585
2013-01-02  1.695924 -0.478135 -0.399319  0.220659
2013-01-03  0.234318 -0.004401  0.252214 -1.439636
                   A         B         C         D
2013-01-05  1.406443  1.955448 -0.429377 -1.821807
2013-01-06  0.454844 -0.491199  0.155589 -1.582683
2013-01-07 -0.788440  1.784208 -0.764476  0.386308
2013-01-08 -0.566260 -0.855400  1.625325 -0.673740
2013-01-09 -1.026797  0.120493 -0.579097 -0.016288
2013-01-10  1.539483  0.838291 -0.141311 -0.036544
```

```
B    0.511388
C   -0.876408
D    1.338585
Name: 2013-01-01 00:00:00, dtype: float64
A    0.878642
B    0.511388
Name: 2013-01-01 00:00:00, dtype: float64
0.8786419672316345
2013-01-01    0.878642
2013-01-02    1.695924
2013-01-03    0.234318
2013-01-04   -0.130358
2013-01-05    1.406443
                ...
2013-04-06    0.692092
2013-04-07    0.125653
2013-04-08    0.526677
2013-04-09    1.468849
2013-04-10   -0.352407
Freq: D, Name: A, Length: 100, dtype: float64
                   A         B
2013-01-01  0.878642  0.511388
2013-01-02  1.695924 -0.478135
2013-01-03  0.234318 -0.004401
2013-01-04 -0.130358 -0.361391
2013-01-05  1.406443  1.955448
...              ...       ...
2013-04-06  0.692092 -1.827626
2013-04-07  0.125653  0.378323
2013-04-08  0.526677 -0.440210
2013-04-09  1.468849  0.204442
2013-04-10 -0.352407  0.591777

[100 rows x 2 columns]
                   A         B
2013-01-01  0.878642  0.511388
2013-01-02  1.695924 -0.478135
2013-01-03  0.234318 -0.004401
2013-01-04 -0.130358 -0.361391
2013-01-05  1.406443  1.955448
                   A         B
2013-01-01  0.878642  0.511388
2013-01-02  1.695924 -0.478135
2013-01-03  0.234318 -0.004401
2013-01-04 -0.130358 -0.361391
2013-01-05  1.406443  1.955448
190905494@V310Z-000:~/Documents/DS$
```

6)

6.py

Week 2 > solved > 6.py > ...

```python
import pandas as pd
import numpy as np

dates = pd.date_range('20130101', periods=6)
df = pd.DataFrame(np.random.randn(6,4), index=dates, columns=list('ABCD'))
print(df.head())
df[df.A > 0]
print(df.head())
df['F'] = ['Male', 'Female', 'Female', 'Male', 'Female', 'Female']
print(df.head())
df.loc[:, 'D'] = np.array([5] * len(df))
print(df.head())
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
190905494@V310Z-000:~/Documents/DS$ python3 "./Week 2/solved/6.py"
                   A         B         C         D
2013-01-01 -0.280170 -0.310025  0.330124 -0.726977
2013-01-02 -1.192533 -0.139549  0.074752  0.180551
2013-01-03 -1.084672  0.817844 -0.035182 -0.243125
2013-01-04 -0.809722  1.225356 -0.699322  1.566975
2013-01-05 -0.121602  0.591932  0.291120  0.985379
                   A         B         C         D
2013-01-01 -0.280170 -0.310025  0.330124 -0.726977
2013-01-02 -1.192533 -0.139549  0.074752  0.180551
2013-01-03 -1.084672  0.817844 -0.035182 -0.243125
2013-01-04 -0.809722  1.225356 -0.699322  1.566975
2013-01-05 -0.121602  0.591932  0.291120  0.985379
                   A         B         C         D       F
2013-01-01 -0.280170 -0.310025  0.330124 -0.726977    Male
2013-01-02 -1.192533 -0.139549  0.074752  0.180551  Female
2013-01-03 -1.084672  0.817844 -0.035182 -0.243125  Female
2013-01-04 -0.809722  1.225356 -0.699322  1.566975    Male
2013-01-05 -0.121602  0.591932  0.291120  0.985379  Female
                   A         B         C  D       F
2013-01-01 -0.280170 -0.310025  0.330124  5    Male
2013-01-02 -1.192533 -0.139549  0.074752  5  Female
2013-01-03 -1.084672  0.817844 -0.035182  5  Female
2013-01-04 -0.809722  1.225356 -0.699322  5    Male
2013-01-05 -0.121602  0.591932  0.291120  5  Female
190905494@V310Z-000:~/Documents/DS$
```

7)

7.py

Week 2 > solved > 7.py > ...

```python
import pandas as pd
import numpy as np
dates = pd.date_range('20130101', periods=6)
df = pd.DataFrame(np.random.randn(6,4), index=dates, columns=list('ABCD'))
print(df.head())
df.drop ('A', axis =1, inplace=True)
print(df.head())
df.drop(pd.Timestamp('20130105'), axis=0, inplace=True)
print(df.head())
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
190905494@V310Z-000:~/Documents/DS$ python3 "./Week 2/solved/7.py"
                   A         B         C         D
2013-01-01 -0.516408  3.352175 -1.395452 -0.457403
2013-01-02  0.246527 -2.477502 -0.195379  0.213647
2013-01-03  1.453532  0.465224  1.747698 -0.472331
2013-01-04 -0.232700 -0.544753  0.196862 -0.411392
2013-01-05  2.214543  0.786697  0.901635 -0.318831
                   B         C         D
2013-01-01  3.352175 -1.395452 -0.457403
2013-01-02 -2.477502 -0.195379  0.213647
2013-01-03  0.465224  1.747698 -0.472331
2013-01-04 -0.544753  0.196862 -0.411392
2013-01-05  0.786697  0.901635 -0.318831
                   B         C         D
2013-01-01  3.352175 -1.395452 -0.457403
2013-01-02 -2.477502 -0.195379  0.213647
2013-01-03  0.465224  1.747698 -0.472331
2013-01-04 -0.544753  0.196862 -0.411392
2013-01-06 -0.647557 -1.109314  0.311687
190905494@V310Z-000:~/Documents/DS$
```

8)

7.py 8.py

Week 2 > solved > 8.py > ...

```
1  import pandas as pd
2  import numpy as np
3
4  dates = pd.date_range('20130101', periods=6)
5  df = pd.DataFrame(np.random.randn(6,4), index=dates, columns=list('ABCD'))
6  print(df.head())
7  df.drop ('A', axis =1, inplace=True)
8  print(df.head())
9  df.drop(pd.Timestamp('20130105'), axis=0, inplace=True)
10 print(df.head())
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
190905494@V310Z-000:~/Documents/DS$ python3 "./Week 2/solved/8.py"
                   A         B         C         D
2013-01-01  0.153351  1.642949  0.433448  2.661325
2013-01-02  0.082682 -1.001823 -0.827226 -1.512859
2013-01-03 -0.655797 -1.122934 -0.523091  0.182749
2013-01-04  0.264847 -0.226741  0.794333  0.540779
2013-01-05 -0.011691  0.070230  1.399643 -0.036218
                   B         C         D
2013-01-01  1.642949  0.433448  2.661325
2013-01-02 -1.001823 -0.827226 -1.512859
2013-01-03 -1.122934 -0.523091  0.182749
2013-01-04 -0.226741  0.794333  0.540779
2013-01-05  0.070230  1.399643 -0.036218
                   B         C         D
2013-01-01  1.642949  0.433448  2.661325
2013-01-02 -1.001823 -0.827226 -1.512859
2013-01-03 -1.122934 -0.523091  0.182749
2013-01-04 -0.226741  0.794333  0.540779
2013-01-06 -0.867098  0.509459  1.476027
190905494@V310Z-000:~/Documents/DS$
```

9)

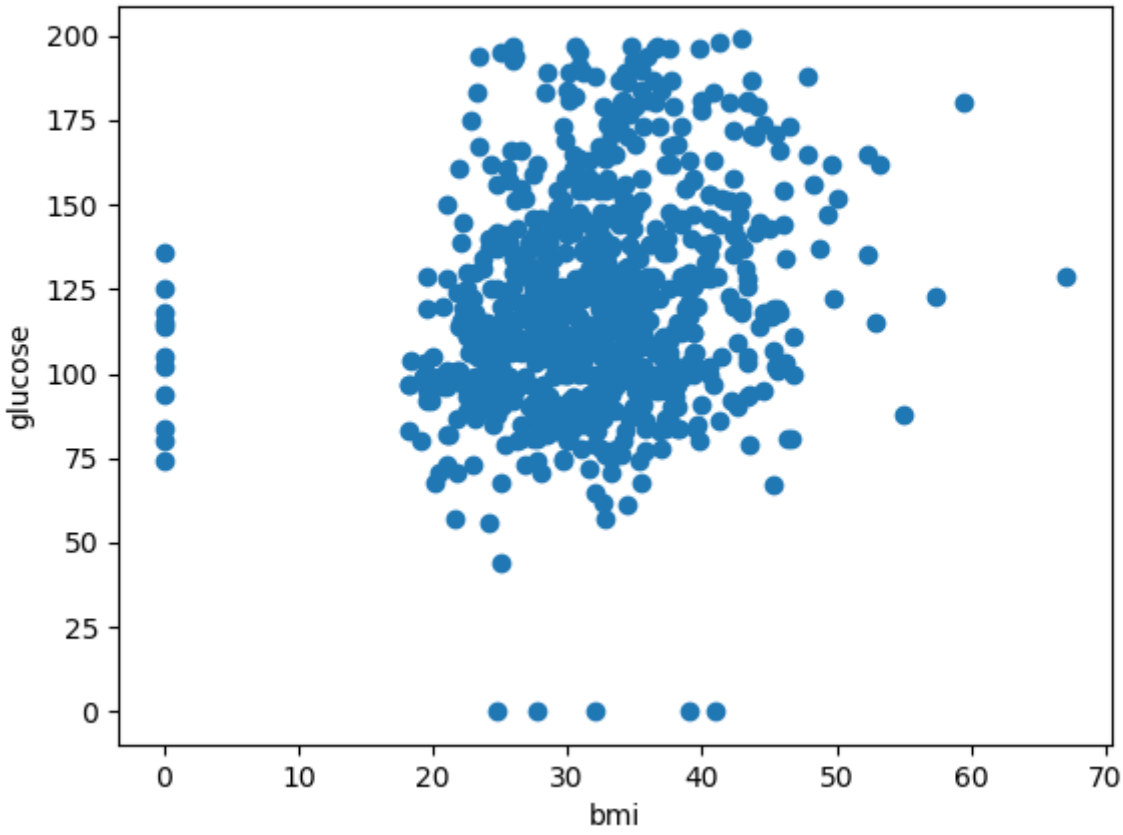
9.py

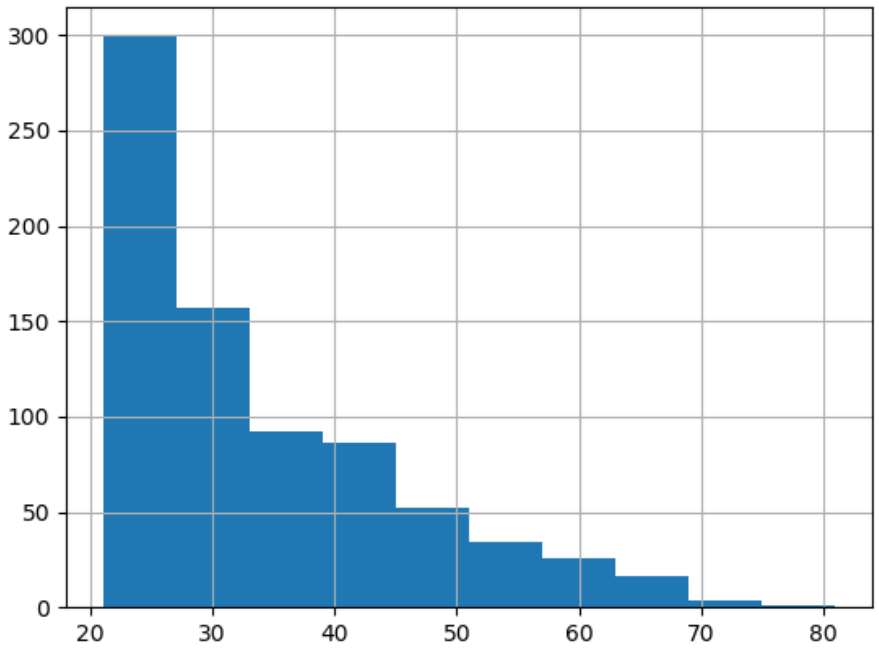
Week 2 > solved > 9.py > ...

```python
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt

df = pd.read_csv("prima_indians_diabetes_for_Week2.csv", header=None)
print(df.head())
print(df.tail())

df.columns = ['preg', 'glu', 'bp', 'sft', 'ins', 'bmi', 'dpf', 'age', 'class']

plt.scatter(df['bmi'], df['glu'])
plt.xlabel('bmi')
plt.ylabel('glucose')
plt.show()

df['age'].hist()
plt.show()
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
190905494@V310Z-000:~/Documents/DS/Week 2/solved$ python3 9.py
   0    1   2   3    4     5      6   7  8
0  6  148  72  35    0  33.6  0.627  50  1
1  1   85  66  29    0  26.6  0.351  31  0
2  8  183  64   0    0  23.3  0.672  32  1
3  1   89  66  23   94  28.1  0.167  21  0
4  0  137  40  35  168  43.1  2.288  33  1
       0    1   2   3    4     5      6   7  8
763   10  101  76  48  180  32.9  0.171  63  0
764    2  122  70  27    0  36.8  0.340  27  0
765    5  121  72  23  112  26.2  0.245  30  0
766    1  126  60   0    0  30.1  0.349  47  1
767    1   93  70  31    0  30.4  0.315  23  0
^C
```


glucose
bmi
200
175
150
125
100
75
50
25
0
0
10
20
30
40
50
60
70


300
250
200
150
100
50
0
20
30
40
50
60
70
80

10)

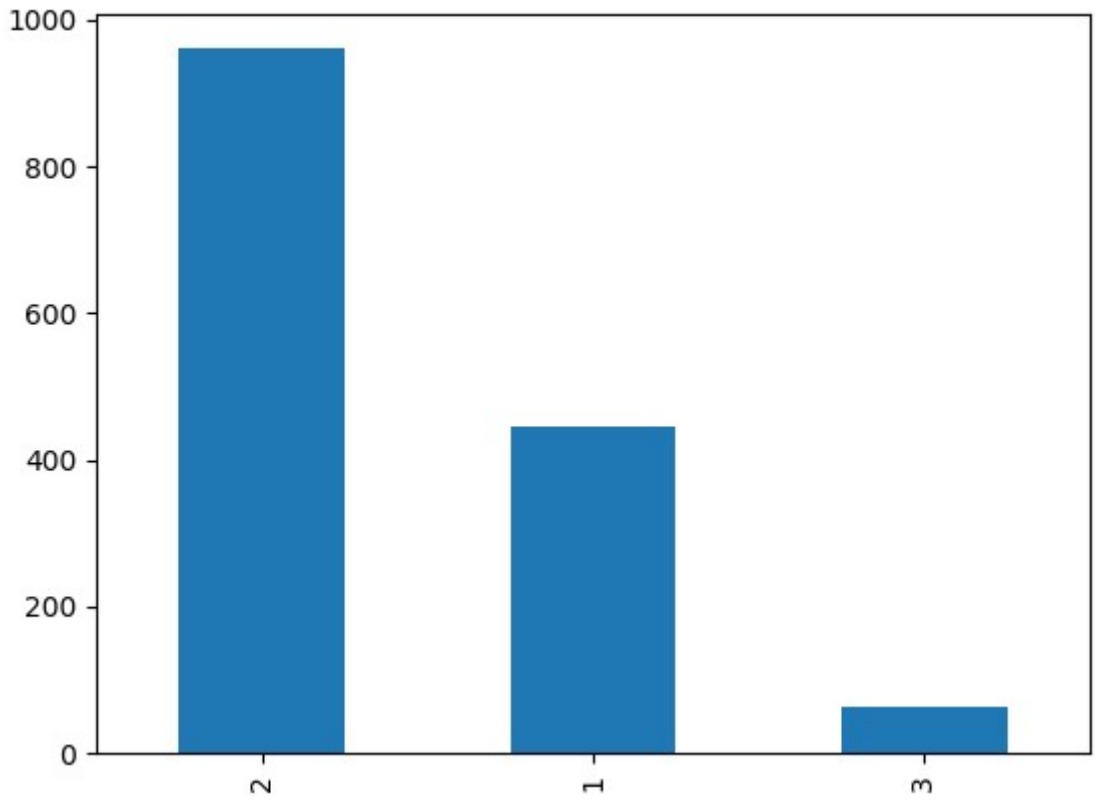
10.py

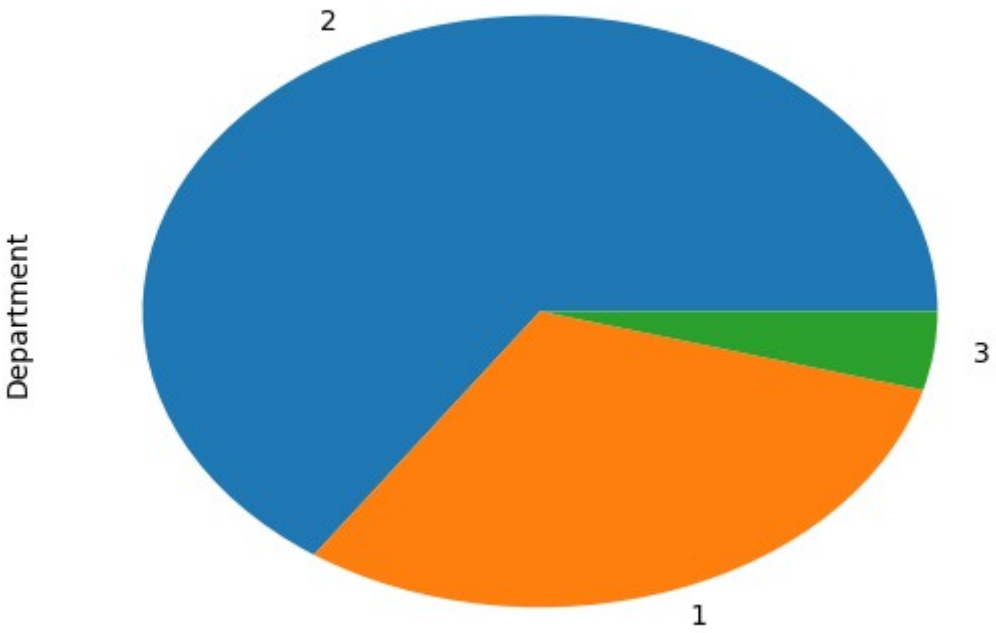
Week 2 > solved > 10.py > ...

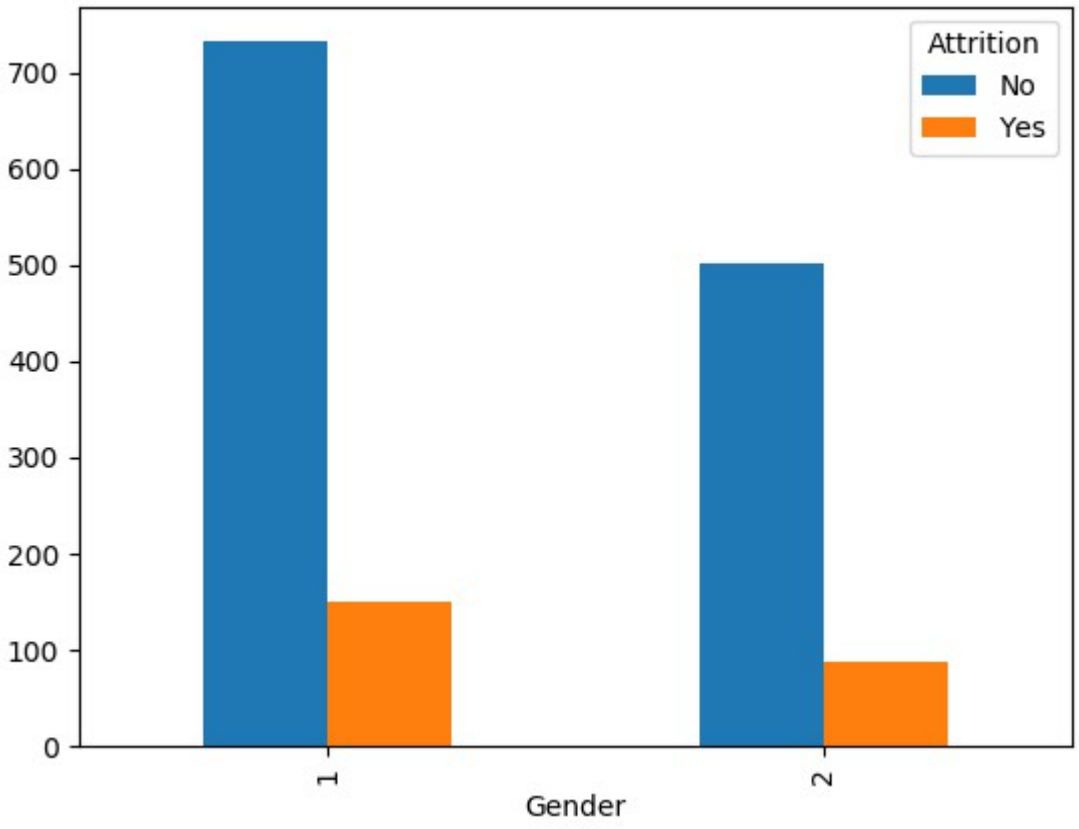
```
1  import numpy as np
2  import pandas as pd
3  import matplotlib.pyplot as plt
4
5  df = pd.read_table("HR_for_Week2.txt")
6  print(df.head())
7  f = df["Department"].value_counts()
8  print(f)
9  f.plot(kind='bar')
10 plt.show()
11 f.plot(kind='pie')
12 plt.show()
13 fa = pd.crosstab(df['Gender'], df['Attrition'])
14 fa.plot(kind='bar')
15 plt.show()
16
17
18
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL 1: python3

```
190905494@V310Z-000:~/Documents/DS/Week 2/solved$ python3 10.py
  Individual  Attrition  Age  BusinessTravel  ...  YearsAtCompany  YearsInCurrentRole  YearsSinceLastPromotion  YearsWithCurrManager
0        Ind1       Yes   41               1  ...               6                   4                        0                     5
1        Ind2        No   49               2  ...              10                   7                        1                     7
2        Ind3       Yes   37               1  ...               0                   0                        0                     0
3        Ind4        No   33               2  ...               8                   7                        3                     0
4        Ind5        No   27               1  ...               2                   2                        2                     2

[5 rows x 35 columns]
2    961
1    446
3     63
Name: Department, dtype: int64
```

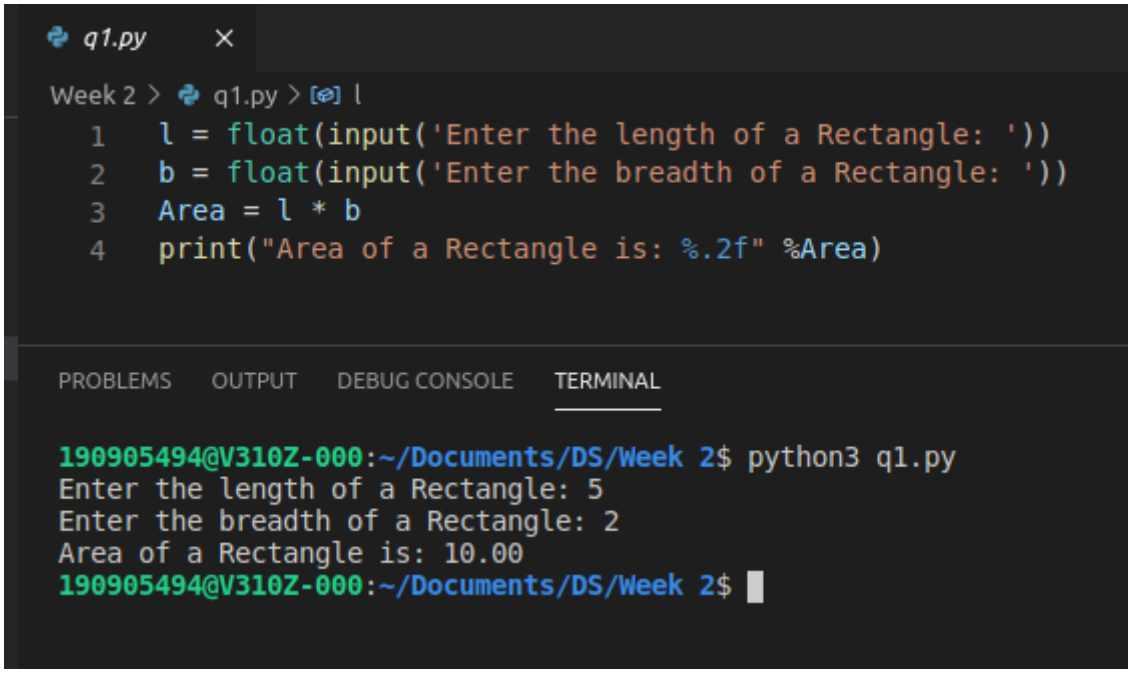



2
Department
3
1

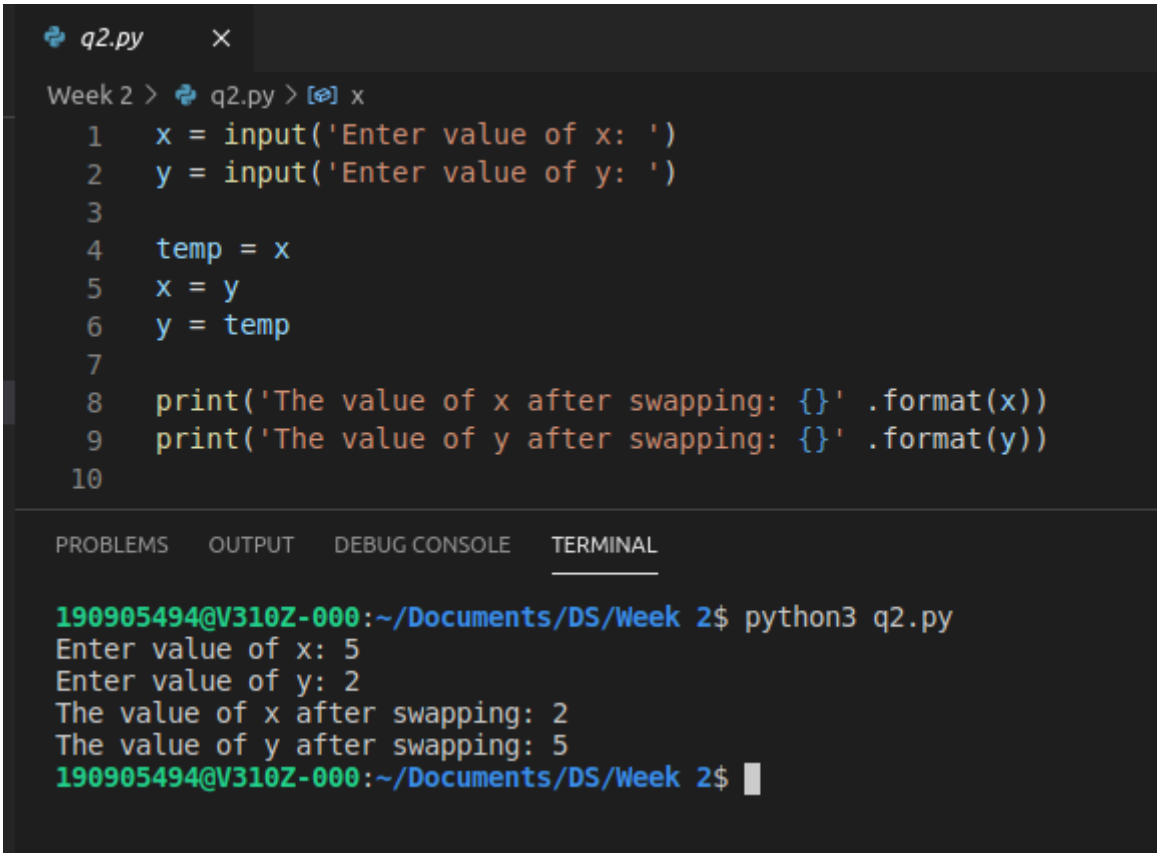

Attrition
No
Yes
700
600
500
400
300
200
100
0
1
2
Gender

**Exersize Questions**

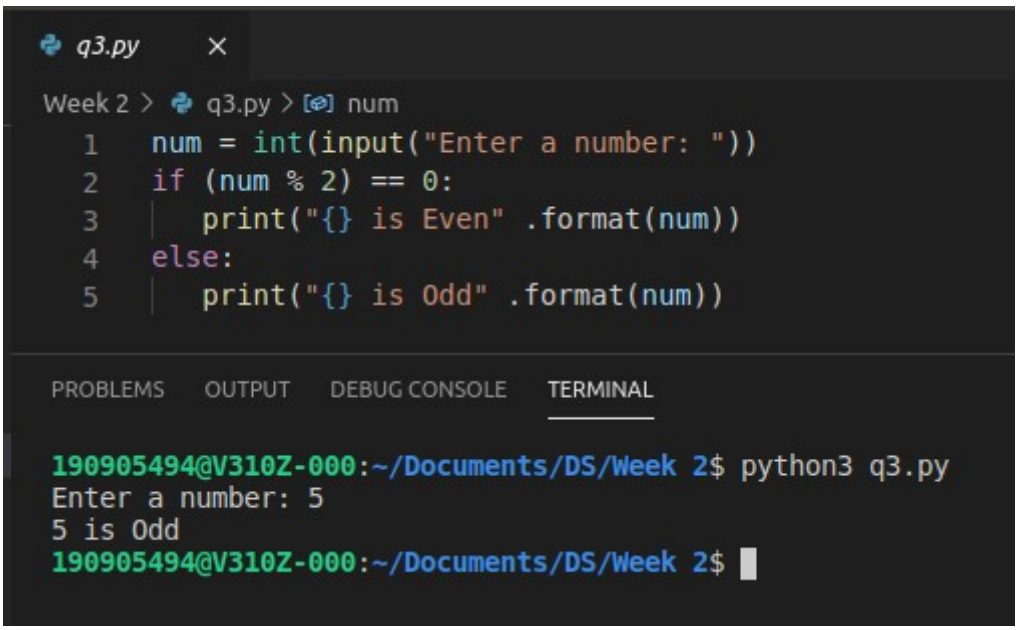
Q1)



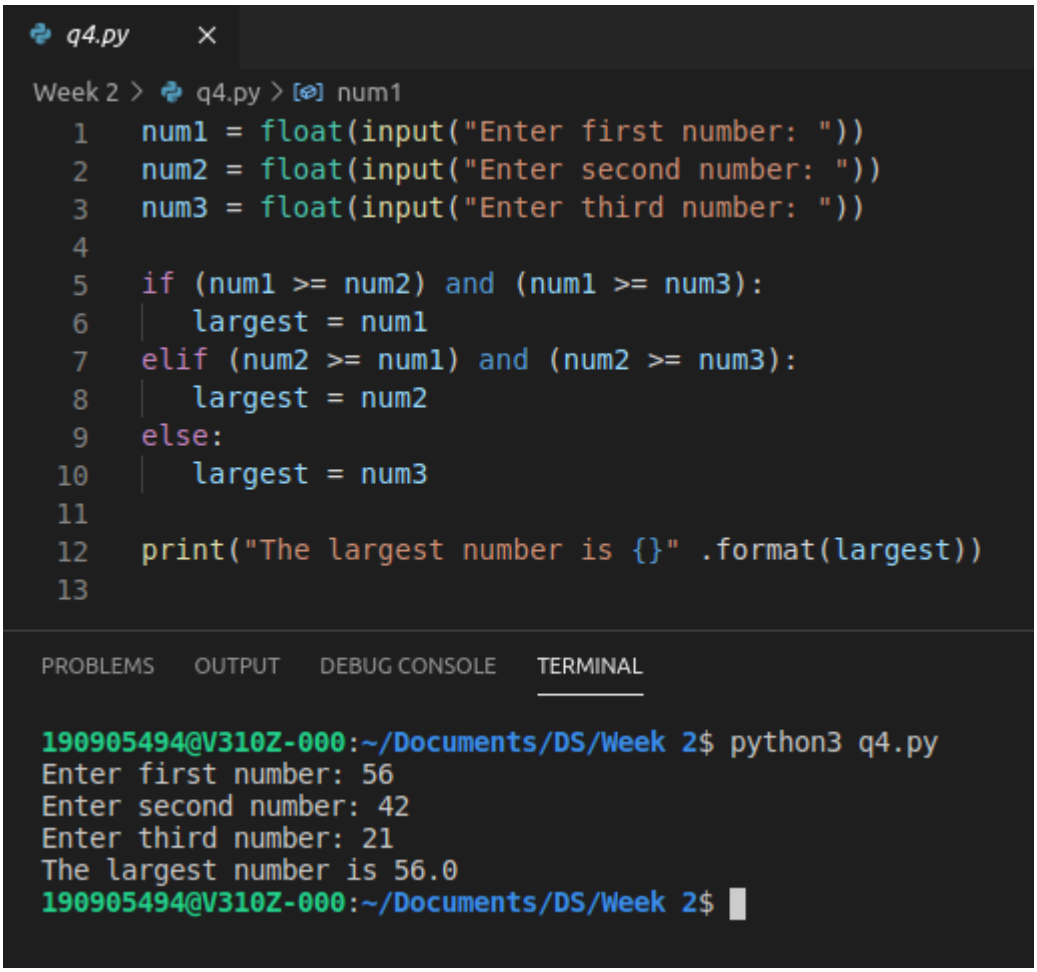

Q2)



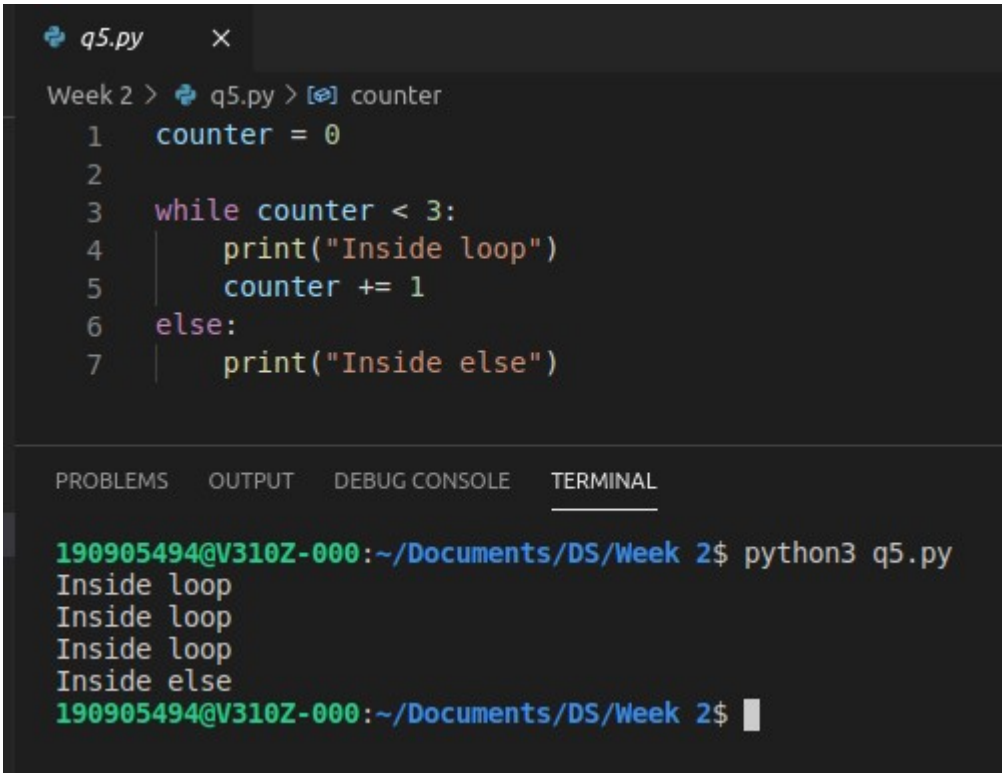
Q3)


q3.py
Week 2 > q3.py > num
1 num = int(input("Enter a number: "))
2 if (num % 2) == 0:
3 print("{} is Even" .format(num))
4 else:
5 print("{} is Odd" .format(num))
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
190905494@V310Z-000:~/Documents/DS/Week 2$ python3 q3.py
Enter a number: 5
5 is Odd
190905494@V310Z-000:~/Documents/DS/Week 2$

Q4)


q4.py
Week 2 > q4.py > num1
1 num1 = float(input("Enter first number: "))
2 num2 = float(input("Enter second number: "))
3 num3 = float(input("Enter third number: "))
4
5 if (num1 >= num2) and (num1 >= num3):
6 largest = num1
7 elif (num2 >= num1) and (num2 >= num3):
8 largest = num2
9 else:
10 largest = num3
11
12 print("The largest number is {}" .format(largest))
13
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
190905494@V310Z-000:~/Documents/DS/Week 2$ python3 q4.py
Enter first number: 56
Enter second number: 42
Enter third number: 21
The largest number is 56.0
190905494@V310Z-000:~/Documents/DS/Week 2$

Q5)


q5.py
Week 2 > q5.py > counter
1 counter = 0
2
3 while counter < 3:
4 print("Inside loop")
5 counter += 1
6 else:
7 print("Inside else")
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
190905494@V310Z-000:~/Documents/DS/Week 2$ python3 q5.py
Inside loop
Inside loop
Inside loop
Inside else
190905494@V310Z-000:~/Documents/DS/Week 2$

Q6)

q6.py

Week 2 > q6.py > my_list

```
1   my_list = ['p', 'r', 'o', 'b', 'e']
2
3   print(my_list[0])  # p
4   print(my_list[-1])
5   print(my_list[1:3])
6
7   odd = [2, 4, 6, 8]
8   print(odd)
9
10  odd[1:4] = [3, 5, 7]
11  print(odd)
12
13  odd.append(7)
14  print(odd)
15
16  odd.extend([9, 11, 13])
17  print(odd)
18
19  del my_list[2]
20
21  my_list = ['p', 'r', 'o', 'b', 'l', 'e', 'm']
22
23  print('p' in my_list)
24  print('a' in my_list)
25  print('c' not in my_list)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
190905494@V310Z-000:~/Documents/DS/Week 2$ python3 q6.py
p
e
['r', 'o']
[2, 4, 6, 8]
[2, 3, 5, 7]
[2, 3, 5, 7, 7]
[2, 3, 5, 7, 7, 9, 11, 13]
True
False
True
```

Q7)

q7.py

Week 2 > q7.py > list

```
1  list=[1,3,5,7,9,2,4,6,8,10]
2  l1=list[:5]
3  l2=list[5:]
4
5  print(l1)
6  print(l2)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
190905494@V310Z-000:~/Documents/DS/Week 2$ python3 q7.py
[1, 3, 5, 7, 9]
[2, 4, 6, 8, 10]
190905494@V310Z-000:~/Documents/DS/Week 2$
```

Q8)

q8.py

Week 2 > q8.py > ...

```
1  tup = (12, 7, 38, 56, 78)
2  lst = [i for i in tup if i%2==0]
3  print("new tuple is : ", tuple(lst))
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
190905494@V310Z-000:~/Documents/DS/Week 2$ python3 q8.py
new tuple is :  (12, 38, 56, 78)
190905494@V310Z-000:~/Documents/DS/Week 2$
```

Q9)

q9.py

Week 2 > q9.py > ...

```
1  lst = [12, -7, 38, -56, 78]
2  for i in lst:
3      if i < 0 : print(i)
4
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
190905494@V310Z-000:~/Documents/DS/Week 2$ python3 q9.py
-7
-56
190905494@V310Z-000:~/Documents/DS/Week 2$
```

Q10)

q10.py

Week 2 > q10.py > ...

```
1  lst = [12, -7, 38, -56, 78]
2  i = 0
3  while i < len(lst):
4      if lst[i] < 0 :
5          print(lst[i])
6      i += 1
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
190905494@V310Z-000:~/Documents/DS/Week 2$ python3 q10.py
-7
-56
190905494@V310Z-000:~/Documents/DS/Week 2$
```

Q11)

q11.py

Week 2 > q11.py > ...

```
1  lst = [12, -7, 38, -56, 78]
2  pos = neg = 0
3  for i in lst:
4      if i < 0 : neg += 1
5      else : pos += 1
6
7  print("Num pos : %d, Num neg : %d" % (pos, neg))
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
190905494@V310Z-000:~/Documents/DS/Week 2$ python3 q11.py
Num pos : 3, Num neg : 2
190905494@V310Z-000:~/Documents/DS/Week 2$
```

Q12)

q12.py

Week 2 > q12.py > ...

```
1  lst = [12, 7, 38, 56, 78, 5, 3]
2  l = []
3  for i in lst:
4      if i%2!=0 : l.append(i)
5  print("New List : ", l)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
190905494@V310Z-000:~/Documents/DS/Week 2$ python3 q12.py
New List :  [7, 5, 3]
190905494@V310Z-000:~/Documents/DS/Week 2$
```

Q13)

q13.py

Week 2 > q13.py > ...

```python
import pandas as pd
import numpy as np

student = {
    "Name" : "Angad",
    "Height" : "185cm",
    "Qualification" : "B.Tech CSE",
}

add = ["Gurgaon"]    # age list
df = pd.DataFrame(student, index=[0])
df['Address'] = add
print(df)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
190905494@V310Z-000:~/Documents/DS/Week 2$ python3 q13.py
    Name Height Qualification  Address
0  Angad  185cm    B.Tech CSE  Gurgaon
190905494@V310Z-000:~/Documents/DS/Week 2$
```

Q14)

q14.py

Week 2 > q14.py > ...

```python
import pandas as pd

student = {
    "Name" : "Angad",
    "Height" : "185cm",
    "Qualification" : "B.Tech CSE",
}

df = pd.DataFrame(student, index=[0])
df.insert(3, "Address", "Gurgaon", allow_duplicates = False)
print(df)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
190905494@V310Z-000:~/Documents/DS/Week 2$ python3 q14.py
    Name Height Qualification  Address
0  Angad  185cm    B.Tech CSE  Gurgaon
190905494@V310Z-000:~/Documents/DS/Week 2$
```