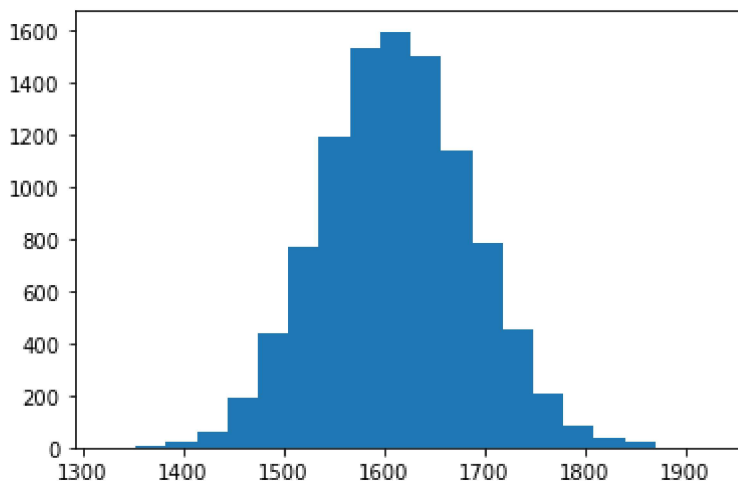


```
In [1]: import math
        from matplotlib import pyplot
        import random
```

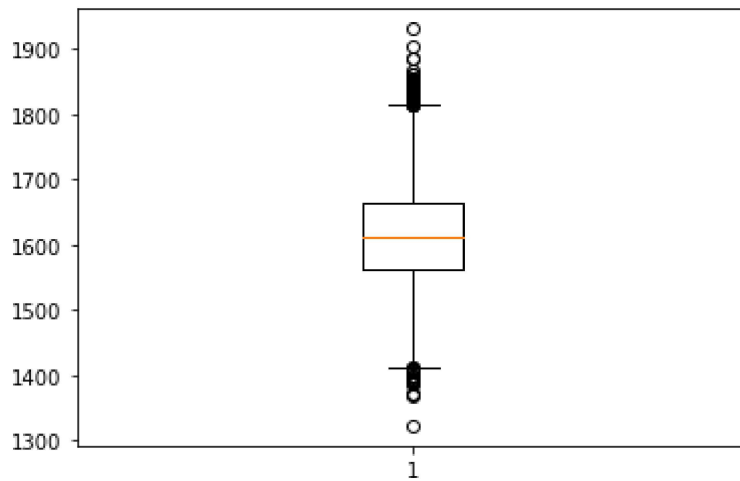
```
In [2]: def Interest_normal(principal):
        rate=random.normalvariate(0.03,0.015)
        return principal*rate
```

```
In [5]: years=10
        sims=10000
        end_balance=[]
        for i in range(sims):
            time=0
            balance=1200
            while(time<years):
                balance+=Interest_normal(balance)
                time+=1
            end_balance.append(balance)

        pyplot.hist(end_balance, bins=20)
        pyplot.show()
```



```
In [6]: pyplot.boxplot(end_balance)
        pyplot.show()
```



```
In [7]: import pandas as pd
import numpy as np
import seaborn as sns
```

```
In [8]: employees = pd.read_excel('employee_data.xlsx')
employees.head()
```

```
Out[8]:
```

	Employee	Gender	Age	Prior Experience	Beta Experience	Education	Annual Salary
0	1	1	39	5	12	4	57700
1	2	0	44	12	8	6	76400
2	3	0	24	0	2	4	44000
3	4	1	25	2	1	4	41600
4	5	0	56	5	25	8	163900

```
In [9]: table=pd.crosstab(employees.Education, employees.Gender)
table
```

```
Out[9]:
```

	Gender	0	1
Education			
0	2	8	
2	9	10	
4	46	69	
6	24	27	
8	4	5	

```
In [10]: table2 = pd.crosstab(employees.Gender, employees.Education)
table2
```

```
Out[10]:
```

Education 0 2 4 6 8

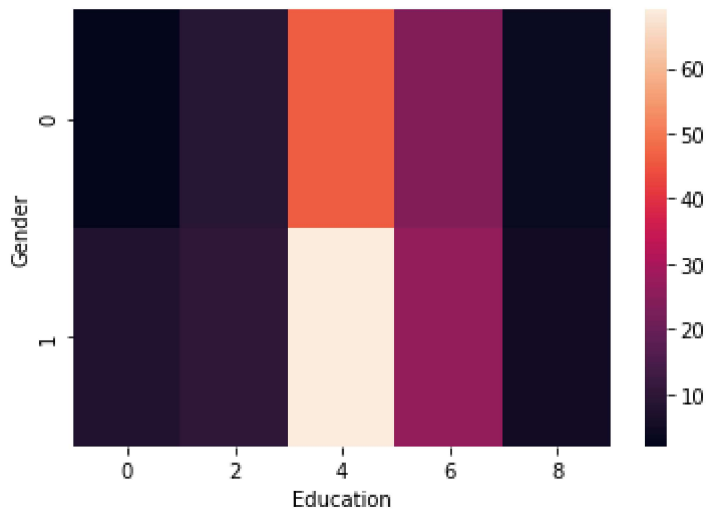
Gender

0 2 9 46 24 4

1 8 10 69 27 5

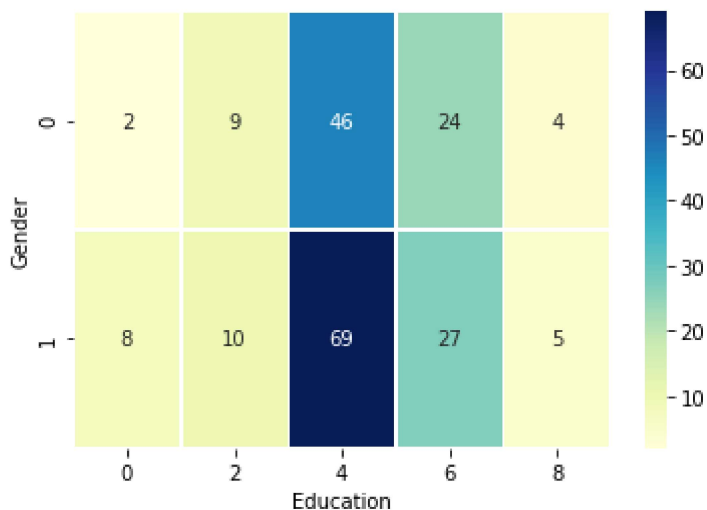
```
In [11]: sns.heatmap(table2)
```

```
Out[11]: <AxesSubplot:xlabel='Education', ylabel='Gender'>
```



```
In [12]: sns.heatmap(table2,annot=True, linewidth=0.5,cmap='YlGnBu')
```

```
Out[12]: <AxesSubplot:xlabel='Education', ylabel='Gender'>
```



```
In [15]: dict = {
    'FirstName' : 'Jonathan',
    "Last Name" : 'Freeman',
    "LoginCount" : 4,
    "isWriter" : True,
    'WorksWith' : ['Spantree Technology Group', 'InfoWorld'],
    'Pets' : [{
```

```
        'name' : 'Lilly',  
        'type' : 'raccoon'  
    ]]  
}  
  
dict
```

```
Out[15]: {'FirstName': 'Jonathan',  
         'Last Name': 'Freeman',  
         'LoginCount': 4,  
         'isWriter': True,  
         'WorksWith': ['Spantree Technology Group', 'InfoWorld'],  
         'Pets': [{'name': 'Lilly', 'type': 'raccoon'}]}
```

```
In [16]: my_dict = {'Computer': 1500, "Monitor" : 300, "Printer" : 150, "Desk": 250}  
my_dict
```

```
Out[16]: {'Computer': 1500, 'Monitor': 300, 'Printer': 150, 'Desk': 250}
```

```
In [18]: df=pd.DataFrame(list(my_dict.items()),columns=['Products','Prices'])  
df
```

```
Out[18]:
```

	Products	Prices
0	Computer	1500
1	Monitor	300
2	Printer	150
3	Desk	250

```
In [ ]:
```