Bell Curve -Normal Distribution

What we did:

In last class we learned about analysing data through visualization.

In this class we learned about the bell curve - normal distribution and how to plot it.

How we did it:

1. We visited random.org site and rolled the dice multiple times and recorded the different sums in a file.

2. We wrote python code to get the random dice numbers 100 times and store in a list.
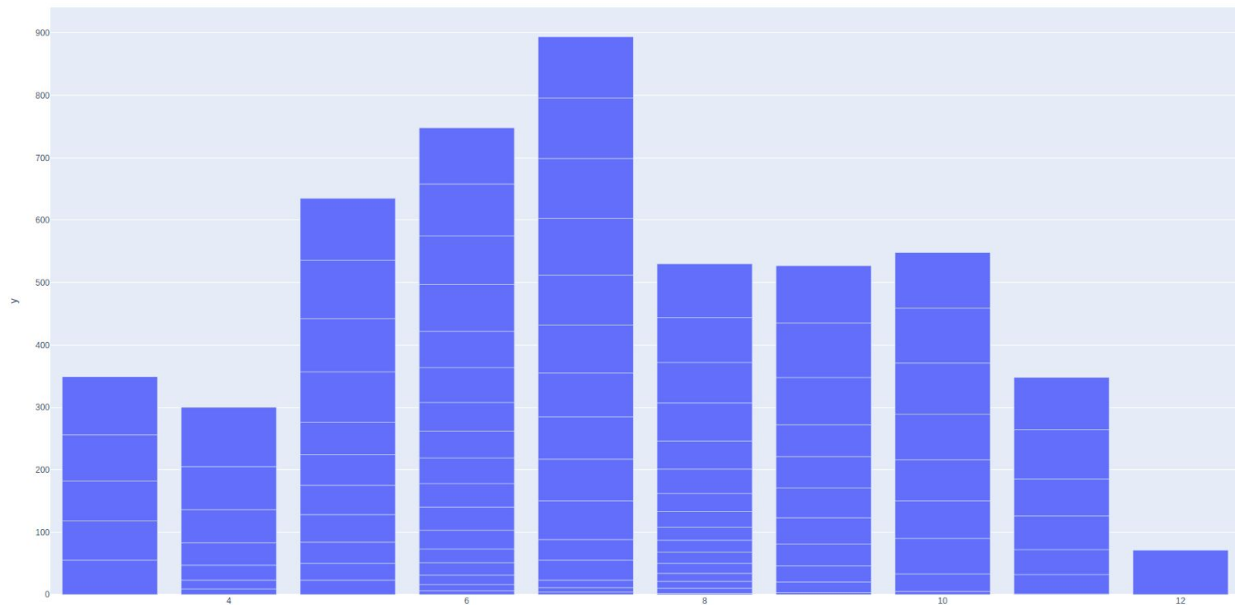
```
import random

dice_result = []
for i in range(0, 100):
    dice1 = random.randint(1, 6)
    dice2 = random.randint(1, 6)
    dice_result.append(dice1 + dice2)
```

3. Using plotly express we plotted the list on the bar graph.

```
import random
import plotly.express as px
count = []
dice_result = []
for i in range(0, 100):
    dice1 = random.randint(1, 6)
    dice2 = random.randint(1, 6)
    dice_result.append(dice1 + dice2)
    count.append(i)

fig = px.bar(x=dice_result,y=count)
fig.show()
```

4. Then we drew the distribution plot using plotly's figure_factory module.

```
dice.py
1   import plotly.figure_factory as ff
2   import random
3
4   dice_result = []
5   for i in range(0, 100):
6       dice1 = random.randint(1, 6)
7       dice2 = random.randint(1, 6)
8       dice_result.append(dice1 + dice2)
9
10  fig = ff.create_distplot([dice_result], ["Result"])
11  fig.show()
12
13
```
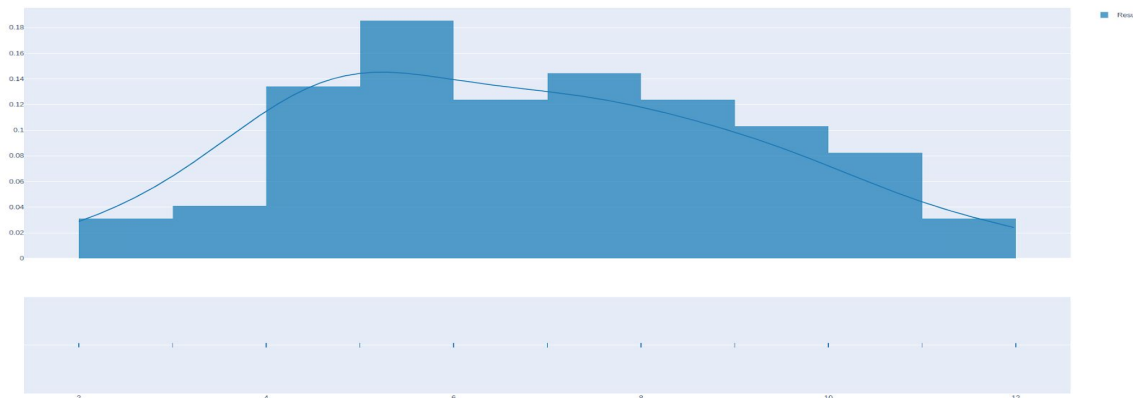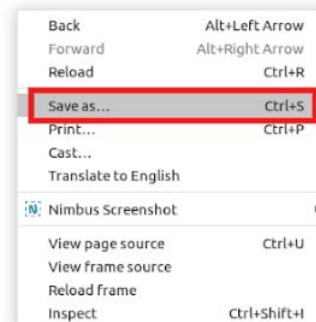
5. Then using the height and weight data that we used in earlier classes we plotted a distribution plot.
6. We got the data and stored it in the data.csv file.
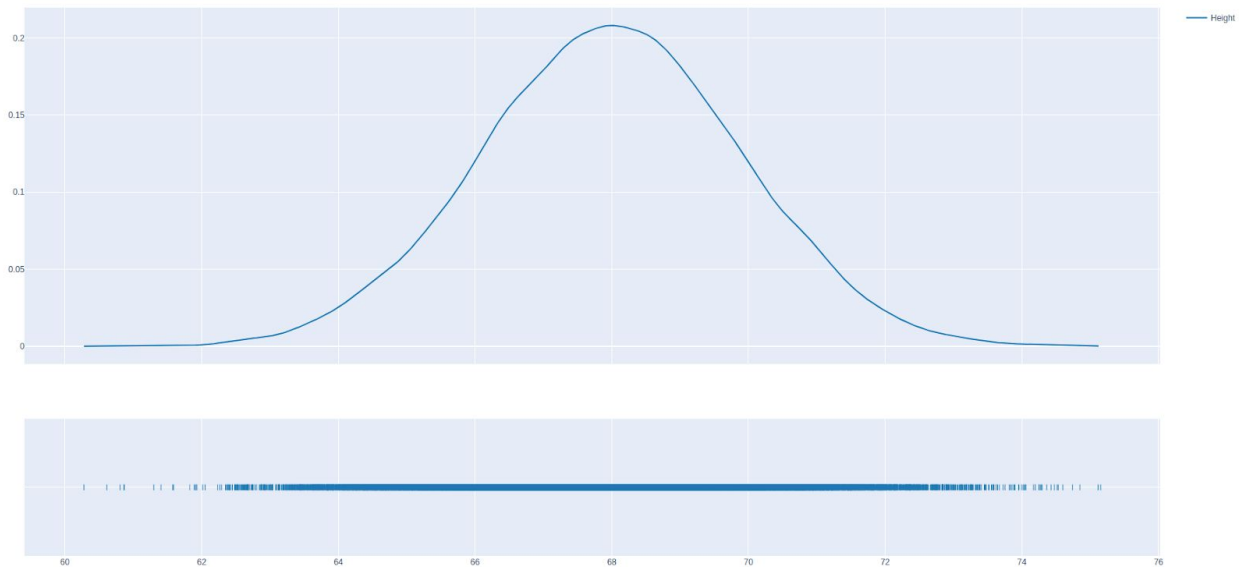

7.Using pandas we read the data.

```
import pandas as pd
import csv

df = pd.read_csv("data.csv")
```

8. We plotted the height distribution plot.

```
import plotly.figure_factory as ff
import pandas as pd
import csv

df = pd.read_csv("data.csv")
fig = ff.create_distplot([df["Height(Inches)"].tolist()], ["Height"], show_hist=False)
fig.show()
```


9. We also plotted the weight distribution plot.

```
1    import plotly.figure_factory as ff
2    import pandas as pd
3    import csv
4
5
6    df = pd.read_csv("data.csv")
7    fig = ff.create_distplot([df["Weight(Pounds)"].tolist()], ["Weight"], show_hist=False)
8    fig.show()
9
```
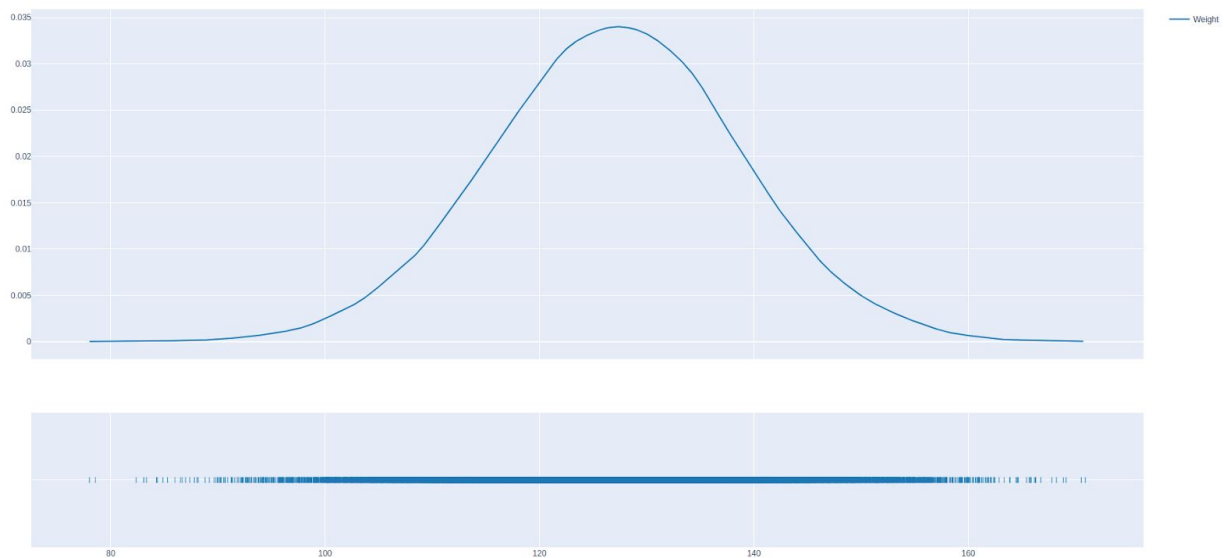

What's next?

In the next class, we will learn more about normal distribution.