Weighted Mean(Average)

In certain scenarios data points do have a certain weightage , suppose a particular school has weightage for different subjects , as in ,

```
-- Subjects are history (3) , math (1) and physics (2)
-- Scores for each subjects are given
-- Scores for each subject is multiplied with it's weight
-- Then multiplied results are added
-- Then the addition result is divided with the total summation of
weights
```

```
import pandas as pd
score = pd.DataFrame(data = [['joy',1,34],['joy',2,45],['joy',3,46]],
                     columns = ['name','weight','score'])

score.head()
```

```
  name  weight  score
0  joy       1     34
1  joy       2     45
2  joy       3     46
```

```
# Scores multiplied with weights
summation = sum(score['weight']*score['score'])
print(f'summation of each score with its weight is {summation}')
```

```
summation of each score with its weight is 262
```

```
# Summation of weight data points
w_sum = sum(score['weight'])
print(f'summation of  weights are {w_sum}')
```

```
summation of  weights are 6
```

```
# Let's divide and find weighted average
print(f'the weighted average is {summation/w_sum}')
```

```
the weighted average is 43.666666666666664
```

```
# Normal mean/average of score is
print(f'the normal mean average score is {score["score"].mean()}')
```

```
the normal mean average score is 41.666666666666664
```