

## Question 02:

### Code :

```
import numpy as np
import pandas as pd

data = np.genfromtxt('Company_Expense.csv', delimiter=',', skip_header=1)
data_sliced = data[:, 2:]

highest_salary = np.max(data[:, 2]) # Adjust index if needed
print(f"Highest Salary Expense: {highest_salary}")

average_marketing_cost = np.mean(data[:, 4]) # Adjust index if needed
print(f"Average Marketing Expense: {average_marketing_cost}")

total_expenses = np.sum(data_sliced, axis=1)

data_with_total = np.column_stack((data, total_expenses)) # Add total expenses column
np.savetxt('Company_Expense_with_Total.csv', data_with_total, delimiter=',', fmt='%f',
header='Serial,Year,Salary,Marketing,....,Total Expenses', comments='')

print("Updated data with Total Expenses:")
print(data_with_total[:5])
```

### Output:

Highest Salary Expense: 4898124.0

Average Marketing Expense: 85718.18181818182

Updated data with Total Expenses:

```
[[ nan 2.023000e+03 4.403364e+06 2.670000e+06 1.068000e+05
  4.450000e+05 6.230000e+04 2.670000e+04 7.714164e+06]
 [ nan 2.023000e+03 3.908604e+06 2.370000e+06 9.480000e+04
  3.950000e+05 5.530000e+04 2.370000e+04 6.847404e+06]
 [ nan 2.023000e+03 2.869608e+06 1.740000e+06 6.960000e+04
  2.900000e+05 4.060000e+04 1.740000e+04 5.027208e+06]
 [ nan 2.023000e+03 3.611748e+06 2.190000e+06 8.760000e+04
```

3.650000e+05 5.110000e+04 2.190000e+04 6.327348e+06]

[ nan 2.023000e+03 3.685962e+06 2.235000e+06 8.940000e+04

3.725000e+05 5.215000e+04 2.235000e+04 6.457362e+06]]