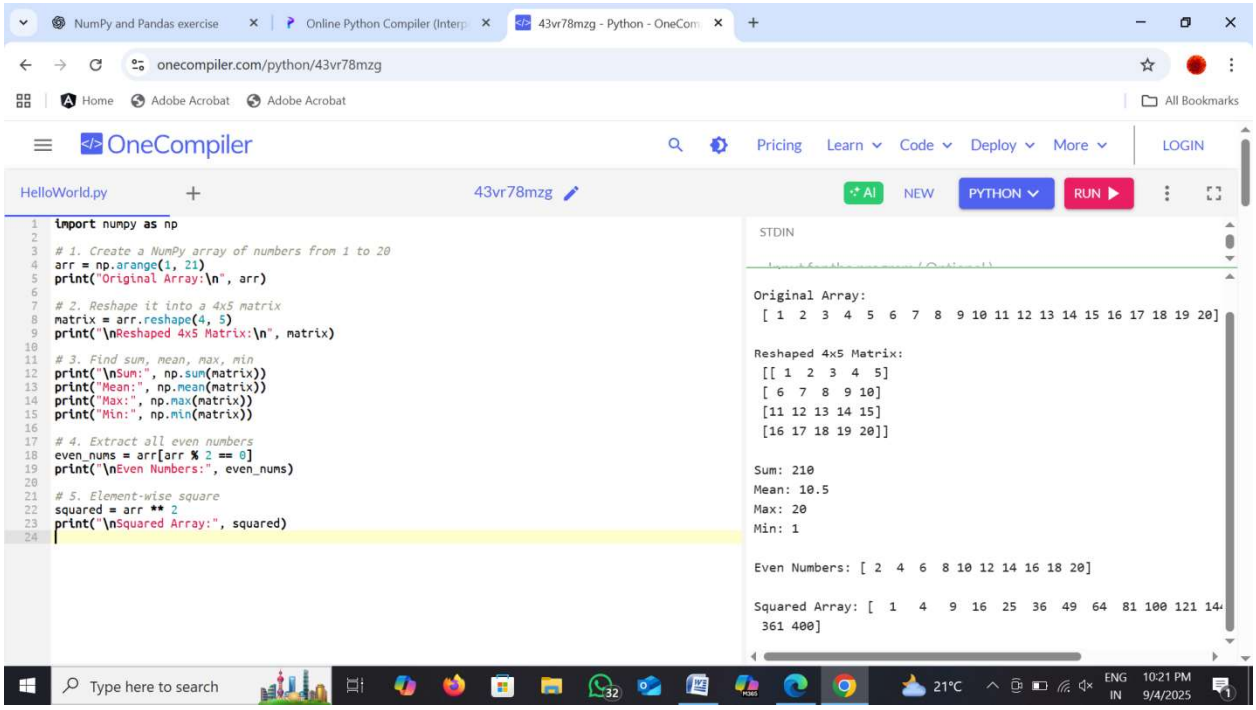
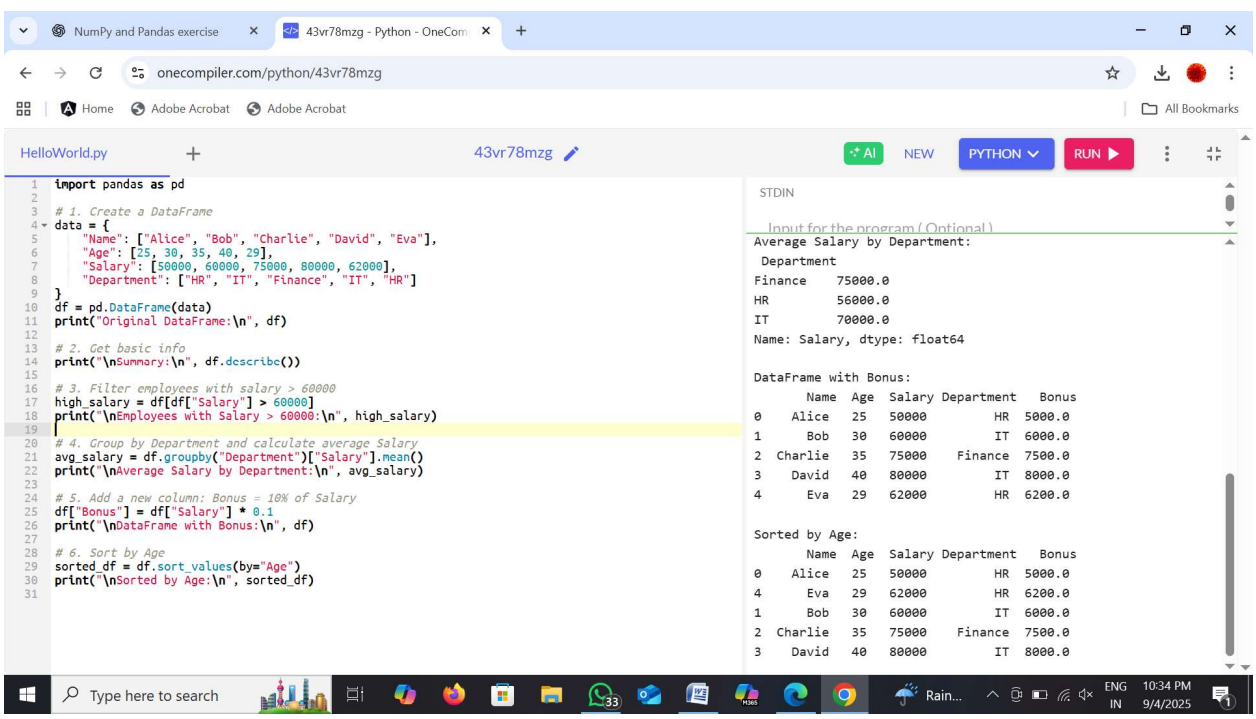
Week 3: NumPy and Pandas for Data

Hands-On: Perform operations with NumPy and manipulate datasets with Pandas.



Client Project: Clean and aggregate a dataset (e.g., remove missing values, calculate averages).



Output:

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Original DataFrame:
       Name  Age  Salary Department
0    Alice   25   50000         HR
1      Bob   30   60000         IT
2  Charlie   35   75000    Finance
3    David   40   80000         IT
4      Eva   29   62000         HR

Summary:
             Age        Salary
count   5.00000      5.000000
mean   31.80000  65400.000000
std     5.80517  12074.767078
min    25.00000  50000.000000
25%    29.00000  60000.000000
50%    30.00000  62000.000000
75%    35.00000  75000.000000
max    40.00000  80000.000000

Employees with Salary > 60000:
       Name  Age  Salary Department
2  Charlie   35   75000    Finance
3    David   40   80000         IT
4      Eva   29   62000         HR

Average Salary by Department:
 Department
Finance    75000.0
HR         56000.0
IT         70000.0
Name: Salary, dtype: float64

DataFrame with Bonus:
       Name  Age  Salary Department   Bonus
0    Alice   25   50000         HR  5000.0
1      Bob   30   60000         IT  6000.0
2  Charlie   35   75000    Finance  7500.0
3    David   40   80000         IT  8000.0
4      Eva   29   62000         HR  6200.0

Sorted by Age:
       Name  Age  Salary Department   Bonus
0    Alice   25   50000         HR  5000.0
4      Eva   29   62000         HR  6200.0
1      Bob   30   60000         IT  6000.0
2  Charlie   35   75000    Finance  7500.0
3    David   40   80000         IT  8000.0
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