

Zoya Zahra_Week1_Task1

NumPy Task 1:

Task:

Create a 6×6 NumPy array with values from 1 to 36.

Then, do the following:

- Replace all even numbers with 0
- Calculate the sum of each **row**
- Return the row index with the **maximum sum**

NumPy Task 2:

Task:

Generate a 4×5 array with **random integers from 10 to 99**.

For each row:

- Sort the row in **descending order**
- Then extract and print the **2nd largest element** from each row

Pandas Task 1:

Task:

Create the following DataFrame:

```
data = {  
    'Department': ['HR', 'IT', 'HR', 'Finance', 'IT', 'Finance'],  
    'Employee': ['Alice', 'Bob', 'Charlie', 'David', 'Eve', 'Frank'],  
    'Salary': [50000, 60000, 52000, 58000, 61000, 57000]  
}
```

Now perform the following:

- Group by Department and find the **average salary**
- Return the **name(s)** of the employee(s) who **earn more than their department average**

Pandas Task 2:

Task:

Create a DataFrame:

```
data = {  
    'Student': ['Alex', 'Beth', 'Cody', 'Dana'],  
    'Math': [80, 45, 67, 90],  
    'Science': [75, 88, 45, 95]  
}
```

Now:

- Add a column "Passed" which is **True** only if both Math and Science scores are **>= 60**
- Then filter the DataFrame to show only students who **failed at least one subject** but still scored **above 50 in total**