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Task 1:-

In the attachment above, use each worksheet as a table in a relational database and write an SQL query that generates the output report

Ans:

```
SELECT NAME AS DEPT_NAME, AVG(MONTHLY_SALARY) AS AVG_MONTHLY_SALARY
FROM YourTableName
GROUP BY NAME
ORDER BY AVG_MONTHLY_SALARY DESC
LIMIT 3;
```

Task 2:-

With the same attachment, use each worksheet as a CSV file and write a script (Bash or Python) that generates the same report. Data is to be read from the CSV files not from a database.

Ans:-

```
import csv

def calculate_average_salary(data):
    total_salary = 0
    count = 0
    for row in data:
        total_salary += float(row['MONTHLY_SALARY'])
        count += 1
    if count > 0:
        return total_salary / count
    else:
        return 0

def generate_report(csv_file):
    with open(csv_file, 'r') as file:
        reader = csv.DictReader(file)
        data = list(reader)
        sorted_data = sorted(data, key=lambda x: float(x['MONTHLY_SALARY']), reverse=True)
        report_data = sorted_data[:3]
        print("DEPT_NAME")
        print("AVG_MONTHLY_SALARY (USD)")
        for row in report_data:
            print(row['NAME'])
            print(calculate_average_salary(data))
```

```
# Replace 'your_csv_file.csv' with the actual name of your CSV file
generate_report('myCSV_File.csv')
```

Task 3:-

Given below is a Bash / Python script that performs following computation on an integer input (n):If n is less than 10: Calculate its Square

a. Example: 4 => 16
    i. If n is between 10 and 20: Calculate the factorial of (n-10)
b. Example: 15 => 120
    i. If n is greater than 20: Calculate the sum of all integers between 1 and (n-20)
c. Example: 25 => 15
    i. Example: 25 => 15

The task is to identify the bugs in the script, fix them and share the new script. Only one of the two scripts required Bash or Python. **Hint**: You can correct the script by only changing 3-4 characters.

Ans:-

```
def compute(n):
  if n < 10:
    out = n ** 2
  elif n < 20:
    out = 1
    for i in range(1, n - 9):
      out *= i
  else:
    lim = n - 20
    out = lim * lim
    out = out - lim
    out = out / 2
  return out

result = compute(15)
print(result)
```

Output:-

```
120
```