Week 7

2. Copy, move, and remove files using cp, mv, and rm commands.

Copy, Move, and Remove Files:

- **cp**: Copy files or directories.

  ```
  cp source_file destination_file
  ```

- **mv**: Move or rename files or directories.

  ```
  mv source_file destination_file
  ```

- **rm**: Remove files or directories.

  ```
  rm file_name
  ```

2. Create and delete directories using mkdir and rmdir.

Create and Delete Directories:

- **mkdir**: Create a new directory.

  ```
  mkdir directory_name
  ```

- **rmdir**: Remove an empty directory.

  ```
  rmdir directory_name
  ```

4. **Change the current working directory using cd and display the present working directory using pwd.**

Change and Display Current Working Directory:

- **cd**: Change the current working directory.

  ```
  cd directory_path
  ```

- **pwd**: Display the present working directory.

  ```
  pwd
  ```

5. Consider two files that contain information about Employees and Departments in the following parameters: Employee (Name, EId, Salary, DID), Department (DID, DName, Location). Write a Python program to find the average salary of each department.

```
import csv

departments = {}

with open('Week-7/department.csv', mode='r') as file:
    reader = csv.reader(file)
    next(reader)  # Skip header
    for row in reader:
        DID, DName, DLocation = row
        departments[DID] = {'DName': DName, 'DLocation': DLocation, 'TotalSalary': 0, 'EmployeeCount': 0}

with open('Week-7/employees.csv', mode='r') as file:
    reader = csv.reader(file)
    next(reader)  # Skip header
    for row in reader:
        Name, EId, Salary, DID = row
        Salary = float(Salary)
        if DID in departments:
            departments[DID]['TotalSalary'] += Salary
            departments[DID]['EmployeeCount'] += 1

for DID, data in departments.items():
    if data['EmployeeCount'] > 0:
        average_salary = data['TotalSalary'] / data['EmployeeCount']
        print(f"Department: {data['DName']}, Location: {data['DLocation']}, Average Salary: {average_salary:.2f}")
    else:
        print(f"Department: {data['DName']}, Location: {data['DLocation']}, Average Salary: N/A")
```

```
PS C:\Users\Hammad\OneDrive - myamu.ac.in\Desktop\MCA\MCA III\CAMS3P01 Laboratory Course-III (Min
i Project)\Weeks\MCA-III_LAB> & C:/Users/Hammad/AppData/Local/Microsoft/WindowsApps/python3.12.ex
e "c:/Users/Hammad/OneDrive - myamu.ac.in/Desktop/MCA/MCA III/CAMS3P01 Laboratory Course-III (Min
i Project)/Weeks/MCA-III_LAB/Week-7/Q5.py"
Department: HR, Location: Building A, Average Salary: 55000.00
Department: IT, Location: Building B, Average Salary: 80000.00
Department: Finance, Location: Building C, Average Salary: 80000.00
PS C:\Users\Hammad\OneDrive - myamu.ac.in\Desktop\MCA\MCA III\CAMS3P01 Laboratory Course-III (Min
i Project)\Weeks\MCA-III_LAB>
```

6. Consider two files having some lines of statements. Write a Python program to swap content present at middle line of first file with the content of last line of the second file. Note: First file contains odd numbers of lines of statement)

```
def read_file(file_path):
    with open(file_path, 'r') as file:
        lines = file.readlines()
    return lines
def write_file(file_path, lines):
    with open(file_path, 'w') as file:
        file.writelines(lines)
def swap_lines(file1, file2):
    lines1 = read_file(file1)
    lines2 = read_file(file2)
    middle_index = len(lines1) // 2
    last_index = len(lines2) - 1
    lines1[middle_index], lines2[last_index] = lines2[last_index], lines1[middle_index]
    write_file(file1, lines1)
    write_file(file2, lines2)
    print("Content swapped Successfully")
file1 = 'Week-7/file1.txt'
file2 = 'Week-7/file2.txt'
swap_lines(file1, file2)
```

```
PS C:\Users\Hammad\OneDrive - myamu.ac.in\Desktop\MCA\MCA III\CAMS3P01 Laboratory Course-III (Min
i Project)\Weeks\MCA-III_LAB> & C:/Users/Hammad/AppData/Local/Microsoft/WindowsApps/python3.12.ex
e "c:/Users/Hammad/OneDrive - myamu.ac.in/Desktop/MCA/MCA III/CAMS3P01 Laboratory Course-III (Min
i Project)/Weeks/MCA-III_LAB/Week-7/Q6.py"
Content swapped Successfully
PS C:\Users\Hammad\OneDrive - myamu.ac.in\Desktop\MCA\MCA III\CAMS3P01 Laboratory Course-III (Min
```

file1.txt

Week-7 > file1.txt

```
1  Line 1: First statement.
2  Line 2: Second statement.
3  Line C: Last statement of file 2.
4  Line 4: Fourth statement.
5  Line 5: Fifth statement.
```

File2.txt

Week-7 > file2.txt

```
1  Line A: First statement of file 2.
2  Line B: Second statement of file 2.
3  Line 3: Third statement.
4
```