Week 10

1. Write a simple shell script to display "Hello, World!" on the terminal.

echo "Hello, World!"

```
hammadxjaved@INBook-X1:/mnt/e/linux-week/week-10$ ./Q1.sh
Hello, World!
```

2. Write a shell script to accept user input and display it.

echo "Enter your input:"

read user_input

echo "You entered: $user_input"

```
hammadxjaved@INBook-X1:/mnt/e/linux-week/week-10$ ./Q2.sh
Enter your input:
23
You entered: 23
hammadxjaved@INBook-X1:/mnt/e/linux-week/week-10$
```

3. Write a shell script to demonstrate the use of variables.

name="Alice"

age=25

echo "Name: $name"

echo "Age: $age"

```
hammadxjaved@INBook-X1:/mnt/e/linux-week/week-10$ ./Q3.sh
Name: Alice
Age: 25
hammadxjaved@INBook-X1:/mnt/e/linux-week/week-10$
```

4. Write a shell script to perform basic arithmetic operations.

```
echo "Enter the first number:"
read num1
echo "Enter the second number:"
read num2

sum=$((num1 + num2))
diff=$((num1 - num2))
prod=$((num1 * num2))
quot=$((num1 / num2))
mod=$((num1 % num2))

echo "Sum: $sum"
echo "Difference: $diff"
echo "Product: $prod"
echo "Quotient: $quot"
echo "Modulus: $mod"
```

```
hammadxjaved@INBook-X1:/mnt/e/linux-week/week-10$ ./Q4.sh
Enter the first number:
12
Enter the second number:
5
Sum: 17
Difference: 7
Product: 60
Quotient: 2
Modulus: 2
hammadxjaved@INBook-X1:/mnt/e/linux-week/week-10$
```

5. Write a program in python to find word/s having maximum number of instances in a given file and replace all its occurrences with “Aligarh”.

```
def replace_max_word(file_path):
    with open(file_path, 'r') as file:
        content = file.read().lower()

    word_count = {}
    words = content.split()

    for word in words:
        word_count[word] = word_count.get(word, 0) + 1

    max_word = max(word_count, key=word_count.get)
    print(f"Most frequent word: {max_word} (occurrences: {word_count[max_word]})")

    updated_content = content.replace(max_word+' ', 'Aligarh ')
    updated_content = content.replace(' '+max_word, ' Aligarh')

    with open('updated_file.txt', 'w') as file:
        file.write(updated_content)

replace_max_word('example.txt')
```

```
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-10/Q5.py"
Most frequent word: a (occurrences: 2)
PS C:\Users\Hammad\OneDrive - myamu.ac.in\Desktop\MCA\MCA III\CAMS3P01 Laboratory Course-III (Min
i Project)\Weeks\MCA-III LAB>
```

updated_file.txt

```
1   write Aligarh program in python to find word/s having maximum number of instances in Aligarh file
```

6. Consider two files that contain information about Employees and Departments in the following parameters: Employee (Name, EId, Salary, DID), Department (DID, DName, DLocation). Write a Python program to merge the content of both the file in following format.: Emp_Dep(Ename, Eid, Esalary, EDID, DName,Dlocation) (Note: Merging should follow the condition-DID of Employee file should be equal to Department ID of department file)

```
import pandas as pd

employee_df = pd.read_csv('Week-10\employees.csv')

department_df = pd.read_csv('Week-10\departments.csv')


merged_df = pd.merge(employee_df, department_df, on='DID', how='inner')


merged_df = merged_df.rename(columns={
   'Name': 'Ename',
   'EId': 'Eid',
   'Salary': 'Esalary',
   'DID': 'EDID',
   'DName': 'DName',
   'DLocation': 'DLocation'
})

print(merged_df)

merged_df.to_csv('Emp_Dep.csv', index=False)
```

```
e "c:/Users/Hammad/OneDrive - myamu.ac.in/Desktop/MCA/MCA III/CAMS3P01 Laboratory Course-III (Min
i Project)/Weeks/MCA-III_LAB/Week-10/Q6.py"
c:\Users\Hammad\OneDrive - myamu.ac.in\Desktop\MCA\MCA III\CAMS3P01 Laboratory Course-III (Mini P
roject)\Weeks\MCA-III_LAB\Week-10\Q6.py:2: SyntaxWarning: invalid escape sequence '\e'
  employee_df = pd.read_csv('Week-10\employees.csv')
c:\Users\Hammad\OneDrive - myamu.ac.in\Desktop\MCA\MCA III\CAMS3P01 Laboratory Course-III (Mini P
roject)\Weeks\MCA-III_LAB\Week-10\Q6.py:3: SyntaxWarning: invalid escape sequence '\d'
  department_df = pd.read_csv('Week-10\departments.csv')
     Ename  Eid  Esalary  EDID    DName   DLocation
0    Alice  101    60000     1       HR  Building A
1      Bob  102    50000     2  Finance  Building B
2  Charlie  103    70000     1       HR  Building A
3    David  104    45000     3       IT  Building C
4      Eve  105    80000     2  Finance  Building B
PS C:\Users\Hammad\OneDrive - myamu.ac.in\Desktop\MCA\MCA III\CAMS3P01 Laboratory Course-III (Min
i Project)\Weeks\MCA-III_LAB>
```