



ARTIFICIAL INTELLIGENCE LAB

BSCYS-3rd Semester

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Lab Report # 1

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BS CYBER SECURITY PROGRAM

TASK 1:

Code:

```
... multiplication_table.py X
C: > Users > FAIZAN COMPUTER > multiplication_table.py > 6 num
1 num = int(input("Enter a number: "))
2
3 for i in range(1, 11):
4     print(num, "x", i, "=", num * i)
5
```

Output:

```
... PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
6 x 8 = 48
6 x 9 = 54
6 x 10 = 60
PS C:\Users\FAIZAN COMPUTER>
```

Task 2:

Code:

```
... multiplication_table.py prime_number_check.py X
C: > Users > FAIZAN COMPUTER > prime_number_check.py > ...
1 num = int(input("Enter a number: "))
2
3 if num > 1:
4     for i in range(2, num):
5         if num % i == 0:
6             print(num, "is not a Prime Number")
7             break
8         else:
9             print(num, "is a Prime Number")
10 else:
11     print(num, "is not a Prime Number")
12
```

Output:

```
/python.exe" "c:/Users/FAIZAN COMPUTER/prime_number_check.py"
Enter a number: 7
7 is a Prime Number
PS C:\Users\FAIZAN COMPUTER> 
```

Task 3(a) Print numbers from 1 to 10

Code:

```
... multiplication_table.py prime_number_check.py while_1_to_10.py X
C: > Users > FAIZAN COMPUTER > while_1_to_10.py > ...
1 i = 1
2 while i <= 10:
3     print(i)
4     i += 1
5
```

Output:

```
8
9
10
PS C:\Users\FAIZAN COMPUTER>
```

Task 3(b) Print even numbers between 1 and 20

Code:

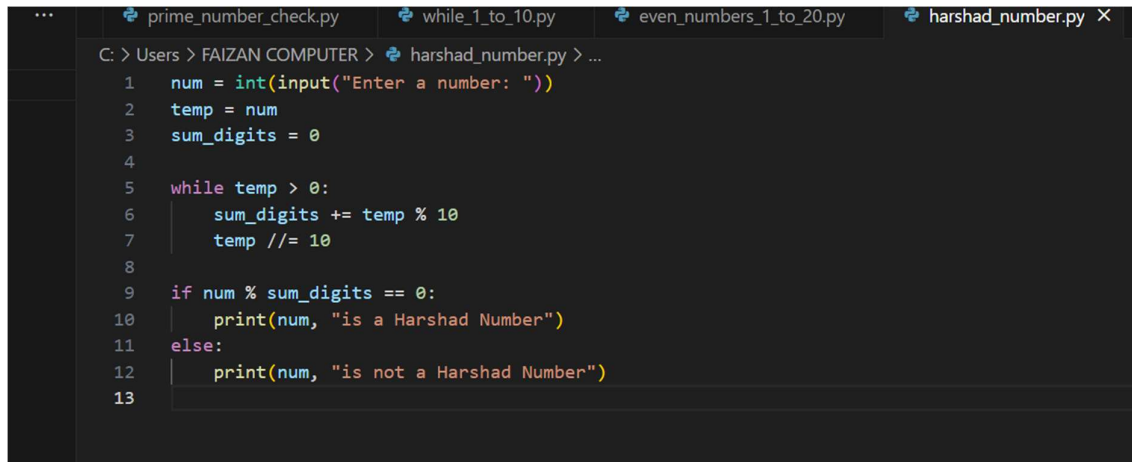
```
... multiplication_table.py × prime_number_check.py while_1_to_10.py even_numbers_1_to_20.py ● ▾ □ ...
C: > Users > FAIZAN COMPUTER > even_numbers_1_to_20.py > ...
1 i = 2
2 while i <= 20:
3     print(i)
4     i += 2
5
```

Output:

```
... PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
16
18
20
PS C:\Users\FAIZAN COMPUTER>
```

Task 4:

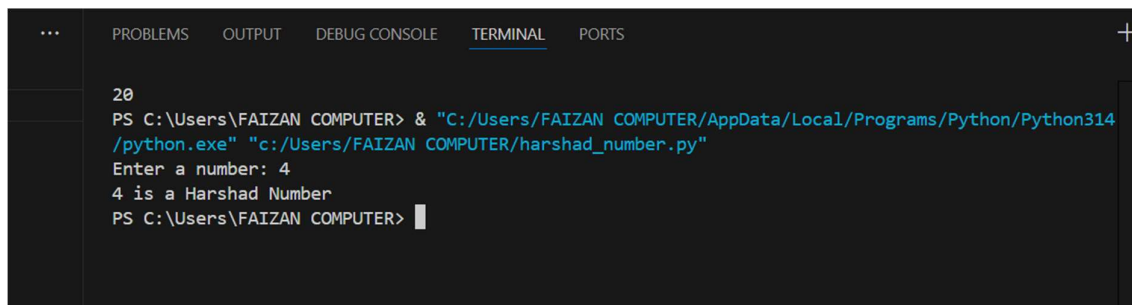
Code:



The screenshot shows the Visual Studio Code editor with four Python files open in the top bar: prime_number_check.py, while_1_to_10.py, even_numbers_1_to_20.py, and harshad_number.py. The harshad_number.py file is active and displays the following code:

```
C: > Users > FAIZAN COMPUTER > harshad_number.py > ...
1  num = int(input("Enter a number: "))
2  temp = num
3  sum_digits = 0
4
5  while temp > 0:
6      sum_digits += temp % 10
7      temp //= 10
8
9  if num % sum_digits == 0:
10     print(num, "is a Harshad Number")
11 else:
12     print(num, "is not a Harshad Number")
13
```

Output:



The screenshot shows the VS Code interface with the TERMINAL tab selected. The terminal output is as follows:

```
20
PS C:\Users\FAIZAN COMPUTER> & "C:/Users/FAIZAN COMPUTER/AppData/Local/Programs/Python/Python314/python.exe" "c:/Users/FAIZAN COMPUTER/harshad_number.py"
Enter a number: 4
4 is a Harshad Number
PS C:\Users\FAIZAN COMPUTER> |
```

Overall conclusion.

In these programs, the multiplication table code prints the table of a user-given number using a for loop, the prime number program checks whether a number has any factors other than 1 and itself, the while loop programs demonstrate looping by printing numbers from 1 to 10 and even numbers from 1 to 20, and the Harshad number program checks if a number is divisible by the sum of its digits. Each code is saved in a separate Python file in VS Code for better organization and clarity, and together they demonstrate the use of loops, conditional statements, user input, and basic number logic in Python.