Lab Experiments: While Loop:

- AI / ML Lab
- Topic: Python Programming.
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Experiment - 1:

- Write a program to reverse a given integer using a while loop.
- Example: Input: 456, Output: 654

```python
# Program to reverse a number using a while loop

num = int(input("Enter a number: "))

reverse = 0

while num > 0:
    digit = num % 10
    reverse = reverse * 10 + digit
    num //= 10

print("Reversed number is:", reverse)

Enter a number:  1623

Reversed number is: 3261
```

Experiment - 2:

- Write a program to count the number of digits in a given number using a while loop.
- Example: Input: 78945, Output: 5

```python
# Program to count the number of digits using a while loop

num = int(input("Enter a number: "))

count = 0

while num > 0:
    count += 1
    num //= 10

print("Number of digits:", count)

Enter a number:  63527

Number of digits: 5
```

Experiment - 3:

- Write a program to print the multiplication table of a given number using a while loop.
- Example: Input: 7. Output: 7 × 1 = 7 ... 7 × 10 = 70

```python
# Program to print multiplication table using a while loop

num = int(input("Enter a number: "))

i = 1
while i <= 10:
    print(num, "x", i, "=", num * i)
    i += 1

Enter a number:  12

12 x 1 = 12
12 x 2 = 24
12 x 3 = 36
12 x 4 = 48
12 x 5 = 60
12 x 6 = 72
12 x 7 = 84
12 x 8 = 96
12 x 9 = 108
12 x 10 = 120
```

Experiment - 4:

- Write a program to find the sum of the digits of a given number using a while loop.
- Example: Input: 1234, Output: 10

```python
# Program to find the sum of digits using a while loop

num = int(input("Enter a number: "))

sum_digits = 0

while num > 0:
    digit = num % 10
    sum_digits += digit
    num //= 10

print("Sum of digits is:", sum_digits)

Enter a number:  12345

Sum of digits is: 15
```

Experiment - 5:

- Write a program to calculate the factorial of a given number using a while loop.

- Example: Input: 5, Output: 120

```python
# Program to calculate factorial using a while loop

num = int(input("Enter a number: "))

factorial = 1
i = num

while i > 0:
    factorial *= i
    i -= 1

print("Factorial of", num, "is", factorial)
```

```
Enter a number:  5
```

```
Factorial of 5 is 120
```