

Experiment 4: Loops

1. Find a factorial of given number.

```
In [8]: def factorial(num):
        if num==0 or num==1:
            return 1
        else:
            return num*factorial(num-1)

        num=int(input("Enter the number "))

        if num>=0:
            print(f"The factorial for {num} is {factorial(num)}")
        else:
            print("Factorial of the negatice number is not possible")
```

The factorial for 5 is 120

2. Find whether the given number is Armstrong number.

```
In [12]: num =int(input("Enter a number: "))

        original = num
        num_digits = len(str(num))
        sum = 0

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

        if sum == original:
            print(f"{original} is an Armstrong number")
        else:
            print(f"{original} is not an Armstrong number")
```

153 is an Armstrong number

3. Print Fibonacci series up to given term.

```
In [13]: num = int(input("Enter number of terms: "))

        a = 0
        b = 1

        if num <= 0:
            print("Please enter a positive number")
        elif num == 1:
            print(a)
        else:
            print("Fibonacci Series:")
            print(a, b, end=" ")
            for i in range(2, num):
                c = a + b
                print(c, end=" ")
                a = b
                b = c
```

Fibonacci Series:
0 1 1 2 3 5 8

4. Write a program to find if given number is prime number or not.

```
In [15]: num = int(input("Enter a number: "))

if num <= 1:
    print("Not a prime number")
else:
    for i in range(2, num):
        if num % i == 0:
            print("Not a prime number")
            break
    else:
        print("Prime number")
```

Prime number

main PYTHON / LAB / Lab_B1_590021239_27-01-2026-Exp-4.ipynb

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Preview Code Blame



```
original = num
reverse = 0

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

if original == reverse:
    print("Palindrome number")
else:
    print("Not a palindrome number")
```

Palindrome number

6. Write a program to print sum of digits.

```
In [20]: num = int(input("Enter a number: "))

sum = 0

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

print("Sum of digits:", sum)
```

Sum of digits: 33

7. Count and print all numbers divisible by 5 or 7 between 1 to 100.

```
In [19]: count = 0

for i in range(1, 101):
    if i % 5 == 0 or i % 7 == 0:
        print(i, end=" ")
        count += 1

print("\nTotal count:", count)
```

5 7 10 14 15 20 21 25 28 30 35 40 42 45 49 50 55 56 60 63 65 70 75 77 80 84 85 90 91 95 98 100
Total count: 32

8. Convert all lower cases to upper case in a string.

```
In [18]: text = input("Enter a string: ")

print("Uppercase:", text.upper())
```

Uppercase: PYTHON

9. Print all prime numbers between 1 and 100.

```
In [17]: for num in range(2, 101):
          for i in range(2, num):
              if num % i == 0:
                  break
          else:
              print(num, end=" ")
```

2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97

10. Print the table for a given number: 5 * 1 = 5

```
In [16]: num = int(input("Enter a number: "))

for i in range(1, 11):
    print(f"{num} * {i} = {num * i}")
```

17 * 1 = 17
17 * 2 = 34
17 * 3 = 51
17 * 4 = 68
17 * 5 = 85
17 * 6 = 102
17 * 7 = 119
17 * 8 = 136
17 * 9 = 153
17 * 10 = 170
