PYTHON LAB 7:

FOR LOOP

SUMANTH S

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1 . Print the first 10 natural numbers using for loop

```
number = 10 # assigning a value to variable number
for number in range (1,11): # using for loop for iteration from 1 to n-1
  print(number, end =" ") # displaying the number from 1 to 10
```

OUTPUT:

```
1 2 3 4 5 6 7 8 9 10
```

2. Python program to check if the given string is a palindrome

```
a = input("Enter the String :")  #taking String from user
rev = str(a)[::-1] # string function to reverse the string
if a == rev:            # checking the condition number is equals to reverse
    print("The given String ",a ," is palindrome") # If condition is true then Displaying it is palindrome
else:
   print("The given String ",a , " is Not palindrome") # If condition is false then Displaying it is not palindrome
```

OUTPUT:

```
Enter the String: SUMMUS
The given String SUMMUS is palindrome

Enter the String: ABBAC
The given String ABBAC is Not palindrome
```

3. Python program to check if a given number is an Armstrong number

```
num = 153  #taking num value
s = num  # assigning input value to the s variable
b = len(str(num)) # converting the number into string using string function
sum1 = 0 #initializing 0 to sum1
while num != 0: #while loop for iteration
    rem = num % 10 # modulo the number by 10 and store in rem variable
    sum1 +=(rem**b) # Cubing the rem with length of the number
    num = num//10 # number is dividing by 10
if s == sum1: # checking num is equals to sum
    print("The given number", s, "is armstrong number")
else:
    print("The given number", s, "is not armstrong number")
```

OUTPUT:

```
The given number 153 is armstrong number

n = 143

The given number 143 is not armstrong number
```

4. Python program to get the Fibonacci series between 0 to 50

```
fibo = [0, 1] # Initializing the first two Fibonacci numbers
# Generate Fibonacci numbers using a for loop from 0 to 50
for i in range(2, 50):
    fib = fibo[i - 1] + fibo[i - 2]
    if fib > 50:
        break
    fibo.append(fib)
print("Fibonacci series between 0 and 50:")
print(fibo) # displaying the Fibonacci series
```

OUTPUT:

```
Fibonacci series between 0 and 50:
[0, 1, 1, 2, 3, 5, 8, 13, 21, 34]
```

5. Python program to check the validity of password input by users

```
password = input("Enter your password: ")# taking password input from the user
is_valid = True
if len(password) < 8:# Check the length of the password
    is_valid = False
    print("Password must be at least 8 characters long.")
if not any(char.isupper() for char in password):# Check if the password contains at least one uppercase letter
    is_valid = False
    print("Password must contain at least one uppercase letter.")
if not any(char.islower() for char in password):# Check if the password contains at least one lowercase letter
    is_valid = False
    print("Password must contain at least one lowercase letter.")
if not any(char.isdigit() for char in password):# Check if the password contains at least one digit
    is_valid = False
    print("Password must contain at least one digit.")
special_characters = "!@#$%^&*()-_+=<>?/\\"# Check if the password contains at least one special character
if not any(char in special_characters for char in password):
    is_valid = False
    print("Password must contain at least one special character.")
if is_valid:
    print("Entered password is Valid")
else:
    print("Entered password is Invalid ")
```

OUTPUT:

```
Enter your password: Sumanth@17
Entered password is Valid
```