Assignment - 11 Full Stack Web Development using Python MySirG

loops

1. Write a python script to calculate sum of first N natural numbers

def sum\_of\_natural\_numbers\_while(n):  
 sum = 0  
 count = 1  
 while count <= n:  
 sum += count  
 count += 1  
 return sum  
n = 10  
result = sum\_of\_natural\_numbers\_while(n)  
print("Sum of the first", n, "natural numbers (while loop):", result)

2. Write a python script to calculate sum of squares of first N natural numbers

def sum\_of\_squares\_numbers\_while(n):  
 sum = 0  
 count = 1  
 while count <= n\*\*2:  
 sum += count  
 count += 1  
 return sum  
n = 10  
result = sum\_of\_squares\_numbers\_while(n)  
print("Sum of the first", n, "squares (while loop):", result)

3. Write a python script to calculate sum of cubes of first N natural numbers

def sum\_of\_squares\_numbers\_while(n):  
 sum = 0  
 count = 1  
 while count <= n\*\*2\*2:  
 sum += count  
 count += 1  
 return sum  
n = 10  
result = sum\_of\_squares\_numbers\_while(n)  
print("Sum of the first", n, "squares (while loop):", result)

4. Write a python script to calculate sum of first N odd natural numbers

def sum\_of\_odd\_numbers\_while(n):  
 sum = 0  
 count = 2  
 while count <= n:  
 sum += count  
 count += 1  
 return sum  
n = 4  
result = sum\_of\_odd\_numbers\_while(n)  
print("Sum of the first", n, "squares (while loop):", result)

5. Write a python script to calculate sum of first N even natural numbers

def sum\_of\_odd\_numbers\_while(n):  
 sum = 0  
 count = 1  
 while count <= n:  
 sum += count  
 count += 1  
 return sum  
n = 4  
result = sum\_of\_odd\_numbers\_while(n)  
print("Sum of the first", n, "squares (while loop):", result)

6. Write a python script to calculate factorial of a given number

from math import factorial  
  
def fact(n):  
 fact\_value = factorial(n)  
 return fact\_value  
  
# Test the function  
n = 4  
result = fact(n)  
print("Factorial of", n, "is:", result)

7. Write a python script to count digits in a given number

def count\_digits(number):  
 count = 0  
 if number == 0:  
 return 1  
 while number != 0:  
 number //= 10  
 count += 1  
 return count  
  
# Test the function  
num = 12345  
digit\_count = count\_digits(num)  
print("Number of digits in", num, "is:", digit\_count)

8. Write a python script to calculate sum of digits of a given number

def sum\_of\_digits(number):  
 total\_sum = 0  
 num = abs(number) # Convert to positive number to handle negative input  
  
 while num > 0:  
 digit = num % 10 # Extract the last digit  
 total\_sum += digit # Add the digit to the total sum  
 num //= 10 # Remove the last digit from the number  
  
 return total\_sum  
  
# Test the function  
num = 12345  
digit\_sum = sum\_of\_digits(num)  
print("Sum of digits in", num, "is:", digit\_sum)

9. Write a python script to print binary equivalent of a given decimal number. (do not

use bin() method)

def decimal\_to\_binary(decimal):  
 binary = ""  
  
 if decimal == 0:  
 binary = "0"  
 else:  
 while decimal > 0:  
 binary = str(decimal % 2) + binary  
 decimal //= 2  
  
 return binary  
  
# Test the function  
decimal\_num = 42  
binary\_num = decimal\_to\_binary(decimal\_num)  
print("Binary equivalent of", decimal\_num, "is:", binary\_num)