Programming Assignment_4

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1. Write a Python Program to Find the Factorial of a Number?

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```python
[2]: num = int(input("Enter a number: "))
     fact = 1

     if num < 0:
         print("Sorry, factorial does not exist for negative numbers")
     elif num == 0:
         print("The factorial of 0 is 1")
     else:
         for i in range(1,num + 1):
             fact = fact*i ## 1*2*3*4....
         print("The factorial of",num,"is",fact)
```

```
Enter a number:  5
The factorial of 5 is 120
```

2. Write a Python Program to Display the multiplication Table?

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```python
[5]: num = int(input("Display multiplication table of = "))

     for i in range(1, 11):
         print(num, 'x', i, '=', num*i)
```

```
Display multiplication table of =  5
5 x 1 = 5
5 x 2 = 10
5 x 3 = 15
5 x 4 = 20
5 x 5 = 25
5 x 6 = 30
5 x 7 = 35
5 x 8 = 40
5 x 9 = 45
5 x 10 = 50
```

3. Write a Python Program to Print the Fibonacci sequence?

```python
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```

```python
[2]:  num = int(input("Enter the Range want to see : "))

      # Initializing First and Second Values
      i = 0
      n1 = 0
      n2 = 1
      if num <= 0:
          print("Please enter a positive integer")
      # if there is only one term, return n1
      elif num == 1:
          print("Fibonacci sequence upto", num ,":", n1)
      else:
          print("Fibonacci sequence:")
          while i < num:
              print(n1) ## 1st = 0, 1
              nth = n1 + n2
              n1 = n2
              n2 = nth
              i += 1
```

```
Enter the Range want to see :  7
Fibonacci sequence:
0
1
1
2
3
5
8
```

4. Write a Python Program to Check Armstrong Number?

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```python
#Armstrong number of 3 digits, the sum of cubes of each digit is equal to the number itself.
num = int(input("Enter a number: "))

order = len(str(num))
sum = 0
temp = num
while temp > 0:
    digit = temp % 10   #last digit
    sum = sum + digit ** order
    temp = temp//10 #(floor div)

if num == sum:
    print(num,"is an Armstrong number")
else:
    print(num,"is not an Armstrong number")
```

```
Enter a number:  407
407 is an Armstrong number
```

5. Write a Python Program to Find Armstrong Number in an Interval?

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```python
lower = 100
upper = 2000

print('Armstrong numbers are :')

for num in range(lower, upper + 1):
    order = len(str(num))
    sum = 0
    temp = num
    while temp > 0:
        digit = temp % 10
        sum += digit ** order
        temp //= 10
    if num == sum:
        print(num)
```

```
Armstrong numbers are :
153
370
371
407
1634
```

6. Write a Python Program to Find the Sum of Natural Numbers?

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```python
[17]: num = int(input("Enter the Range want to sum : ")) ## upto range

if num < 0:
    print("Enter a positive number")
else:
    sum = 0
    #while loop iterate until zero
    while(num > 0):
        sum += num
        num -= 1
    print("The sum is", sum)
```

```
Enter the Range want to sum :  5
The sum is 15
```