Task – 9

```
# 1. Write a program to loop through a list of numbers and add +2 to every
value to elements in list
my_list = [2, 5, 7, 9]
for i in range(0, len(my_list)):
    my_list[i] = my_list[i] + 2
print(my_list)
```

output : -

```
[4, 7, 9, 11]
```

```
# 2. Write a program to get the pattern
for i in range(5, 0, -1):
    for j in range(i, 0, -1):
        print(j, end="")
    print()
```

output : -

```
54321
4321
321
21
1
```

```
# 3. Python Program to Print the Fibonacci sequence

nterms = int(input("How many terms? "))

# first two terms
n1 = 0
n2 =  1
count = 0

# check if the number of terms is valid
if nterms <= 0:
   print("Please enter a positive integer")

else:
   print("Fibonacci sequence:")
```

```
  while count < nterms:
      print(n1)
      nth = n1 + n2
      # update values
      n1 = n2
      n2 = nth
      count += 1
```

output : -

```
How many terms? 7
Fibonacci sequence:
0
1
1
2
3
5
8
```

```
# 4. Explain Armstrong number and write a code with a function
print("A number is called Armstrong number if it is equal to the sum of the cubesof its
 own digits.")
print("For example:- 153 is an Armstrong number since,")
print("153 = 1*1*1 + 5*5*5 + 3*3*3")
def armstrong(n):
    sum = 0
    temp = n
    while temp>0:
        digit = temp%10
        sum += digit**3
        temp //= 10
    if n == sum:
        print(n,"is an Armstrong number.")
    else:
        print(n,"is not an Armstrong number.")
B = int(input("Enter  the number you want to check if it's Armstrong number: "))
armstrong(B)
```

output : -

```
A number is called Armstrong number if it is equal to the sum of the cubesof its own digits.
For example:- 153 is an Armstrong number since,
153 = 1*1*1 + 5*5*5 + 3*3*3
Enter the number you want to check if it's Armstrong number: 467
467 is not an Armstrong number.
```

```
# 5. Write a program to print the multiplication table of 9
```

```
num = 9

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

output :

```
9 x 1 = 9
9 x 2 = 18
9 x 3 = 27
9 x 4 = 36
9 x 5 = 45
9 x 6 = 54
9 x 7 = 63
9 x 8 = 72
9 x 9 = 81
9 x 10 = 90
```

```
# 6. Check if a program is negative or positive
number = int(input("Enter a number: "))
if number<0:
 print("Your number is Negative.")
elif number == 0:
 print("Zero is neither Negative nor Positive number.")
else:
 print("Your number is Positive.")
```

output :

```
Enter a number: 6
Your number is Positive.
```

```
# 7. Write a program to convert the number of days to ages
days = int(input("Enter days : "))
ages = days / 365
print("age is : ", ages, "years")
```

output :

```
Enter days : 3285
age is :  9.0 years
```

```
# 8. Solve Trigonometry problem using math function write a program to solve
 using math function
```

```
import math
print(math.sin(math.pi/6))
print(math.cos(math.pi/6))
print(math.tan(math.pi/6))
a = int(input("Enter one side's length of pythagoras triangle: "))
b = int(input("Enter second side's length of pythagoras triangle: "))
print("The value of hypotenuse of",a,"and",b,"is :",math.hypot(a,b))
print("The converted value from degrees to radians is: ",math.radians(60))
print("The converted value from radians to degrees is: ",math.degrees(math.pi/2))
```

output :

```
0.49999999999999994
0.8660254037844387
0.5773502691896257
Enter one side's length of pythagoras triangle: 5
Enter second side's length of pythagoras triangle: 12
The value of hypotenuse of 5 and 12 is : 13.0
The converted value from degrees to radians is:  1.0471975511965976
The converted value from radians to degrees is:  90.0
```

```
# 9. Create a calculator only on a code level by using if condition (Basic
    arithmetic calculation)
print("Choose arithmetic operation you want to perform.")
print("1.Add\n2.Subtract\n3.Multiply\n4.Divide")
choice = int(input("Enter your choice(1 to 4): "))

a = int(input("Enter first number: "))
b = int(input("Enter second number: "))
if choice == 1:
   print("Result is: ", a + b)
elif choice == 2:
   print("Result is: ", a - b)
elif choice == 3:
   print("Result is: ", a * b)
elif choice == 4:
   print("Result is: ", a / b)
else:
   print("Invalid choice! Please try again.")
```

output :

```
Choose arithmetic operation you want to perform.
1.Add
2.Subtract
3.Multiply
4.Divide
Enter your choice(1 to 4): 2
Enter first number: 6
Enter second number: 3
Result is:  3
```