

Day-3 (Assignment)

1. Write a Python program to find the maximum between three numbers using nested if else. Also, include the situation of whether any two values or all three values are equal or not.
2. Write a Python program to check whether a given year is a leap year or not.
3. Write a Python program to calculate the roots of a quadratic equation $ax^2 + bx + c = 0$, for all possible combinations of a, b, and c.
4. Write a Python program to enter the marks of a student in four subjects. Then calculate the total and aggregate, and display the grade obtained by the student.
If the student scores an aggregate number $\geq 75\%$, then the grade is Distinction.
If the aggregate is $60 \geq$ and < 75 , then the grade is First Division.
If the aggregate is $50 \geq$ and < 60 , then the grade is Second division.
If the aggregate is $40 \geq$ and < 50 , then the grade is Third Division.
Else the grade is Fail.
5. Write a Python program to calculate the factorial of a given integer number using if-else.
6. Write a Python program to find whether the given number is an Armstrong number or not.
7. Write a Python program to check whether a number is a Palindrome or not.
8. Write a Python program to sum the series- $\frac{1}{1^2} + \frac{1}{2^2} + \dots + \frac{1}{n^2}$.
9. Write a Python program to print the following pattern.

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

10. Write a Python program to print the following pattern.

```
*****
*****
***
**
*
```

Practice:

1. Write a Python program to take input from the user and then check whether it is a number or a character. If it is a character, determine whether it is in uppercase or lowercase.
2. A store charges Rs120 per item if you buy less than 10 items. If you buy between 10 and 99 items, the cost is Rs100 per item. If you buy 100 or more items, the cost is Rs70 per item. Write a Python program that asks the user how many items they are buying and prints the total cost.
3. Write a Python program to find whether the given number is a Strong number or not.
4. Write a Python program to display first n Fibonacci terms using if-else.
5. Write a Python program to print the following patterns:-

```
      *
     * *
    * * *
   * * * *
  * * * * *
 * * * * *
```

```
A
B A
C B A
D C B A
E D C B A
```

```
* * * * *
 * * * * *
  * * * *
   * * *
    * *
     *
```