Python Programming - 2101CS405

Lab - 2

In [ ]:
```python
num = int(input("Enter a number: "))
if num > 0:
    print(f"{num} is a positive number")
elif num < 0:
    print(f"{num} is a negative number")
else:
    print(f"{num} is 0")

num1 = int(input("Enter first number: "))
num2 = int(input("Enter second number: "))
if num1 > num2:
    print(f"{num1} is larger")
else:
    print(f"{num2} is larger")


print(f"Larger number is {num1 if num1 > num2 else num2}")  # <-- ternarary


a=int(input("Enter a number"))
if(a>0):
    print("yes")
elif(a==0):
    print("0")
else:
    print("No")
# && -> and(python)    || -> or(python)
print("Yes") if(a>0) else print("NO") # <-- ternarary operator
```

if..else..

01) WAP to check whether the given number is positive or negative.

In [1]:

```
Enter a number: 50
50 is a positive number
```

02) WAP to check whether the given number is odd or even
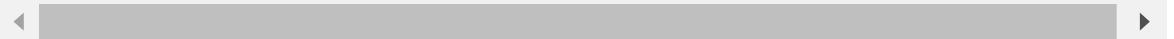
In [3]:

```
Enter a number: 5
5 is odd
```

03) WAP to find out largest number from given two numbers using simple if and ternary operator.

In [5]:

```
Enter first number: 7
Enter second number: 9
9 is larger
Larger number is 9
```

04) WAP to find out largest number from given three numbers.

In [6]:

```
Enter first number: 4
Enter second number: 6
Enter third number: 1
6 is the largest number
```

05) WAP to check whether the given year is leap year or not.

[If a year can be divisible by 4 but not divisible by 100 then it is leap year but if it is divisible by 400 then it is leap year]

In [9]:

```
Enter a year: 1900
1900 is not a leap year
```

In [2]:

```
Enter a year: 2000
2000 is a leap year
```

06) WAP in python to display the name of the day according to the number given by the user

In [25]:

```
Enter a number : 8
Monday
```

07) WAP to implement simple calculator which performs (add,sub,mul,div) of two no. based on user input.

In [21]:

```
Enter first number: 2
Enter second number: 6
Select your operation:
1. Addition(+)
2. Subtraction(-)
3. Multiplication(*)
4. Division(/)
Enter your choice: 2
Result: -4.0
```

08) WAP to calculate electricity bill based on following criteria. Which takes the unit from the user.

a. First 1 to 50 units – Rs. 2.60/unit

b. Next 50 to 100 units – Rs. 3.25/unit

c. Next 100 to 200 units – Rs. 5.26/unit

d. above 200 units – Rs. 8.45/unit

In [3]:

```
Enter the number of units consumed: 234
electricity bill is Rs. 1105.80
```

01) WAP to read marks of five subjects. Calculate percentage and print class accordingly.

Fail below 35

Pass Class between 35 to 45

Second Class

between 45 to 60

First Class between 60 to 70

Distinction if more than 70

In [11]:

```
Enter marks in physics: 50
Enter marks in chemistry: 50
Enter marks in mathematics: 50
Enter marks in computer: 50
Enter marks in english: 50
Percentage: 50.00%
Second Class
```

02) WAP to find out the Maximum and Minimum number from given 4 numbers.

In [12]:]

```
Enter first number: 5
Enter second number: 8
Enter third number: 6
Enter fourth number: 1
8 is the largest number
1 is the smallest number
```

03) WAP to input an integer number and check the last digit of number is even or odd.

In [22]:

```
Enter an integer number: 56
The last digit of 56 is even
```

04) WAP to determine the roots of the equation ax2+bx+c=0.

$$\text{root1} = \frac{-b + \sqrt{(b^2 - 4ac)}}{2a}$$

If the discriminant > 0,
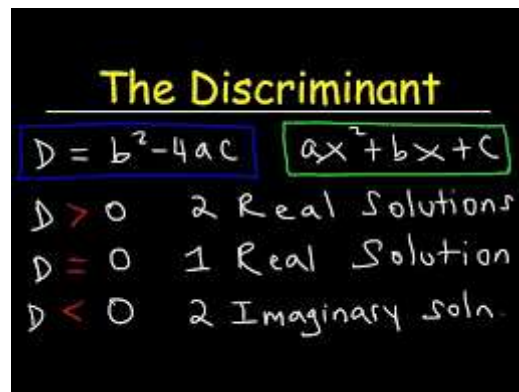
$$\text{root2} = \frac{-b - \sqrt{(b^2 - 4ac)}}{2a}$$

If the discriminant = 0, $\text{root1} = \text{root2} = \dfrac{-b}{2a}$

$$\text{root1} = \frac{-b}{2a} + \frac{i \sqrt{-(b^2 - 4ac)}}{2a}$$

If the discriminant < 0,

$$\text{root2} = \frac{-b}{2a} - \frac{i \sqrt{-(b^2 - 4ac)}}{2a}$$

The Discriminant

$D = b^2 - 4ac$ $ax^2 + bx + C$

$D > 0$ 2 Real Solutions
$D = 0$ 1 Real Solution
$D < 0$ 2 Imaginary soln.

In [16]:

```
Enter the coefficient of x^2: 1
Enter the coefficient of x: 3
Enter the constant term: 2
two real roots.
The roots are -1.00 and -2.00
```

In [7]:

```
Enter the coefficient of x^2: 1
Enter the coefficient of x: 4
Enter the constant term: 5
no real roots.
The roots are -2+1i and -2-1i
```