This is a basic python codes notebook, the codes might be similar to many of you guys, just composing them In a single notebook for convenience.. If you guys like this notebook, don't forget to put a star on the repo, and follow on github(https://github.com/amitvsuryavanshi04/SIC_programming_and_coding) to get more stuff

Program 01

```
print("Hello Welcome to the notebook ...")
```

```
Hello Welcome to the notebook ...
```

Program 02

```
#Addition operator
print("Addition of two numbers")
n1 = float(input("Enter the first number: "))
n2 = float(input("Enter the Second number: "))
result = n1 + n2
print(result)
```

```
Addition of two numbers
Enter the first number: 11
Enter the Second number: 34
45.0
```

```
#Division operator
print("Division of two numbers")
n1 = float(input("Enter the first number: "))
n2 = float(input("Enter the Second number: "))
result = n1 / n2
print(result)
```

```
Division of two numbers
Enter the first number: 45
Enter the Second number: 9
5.0
```

Prorgam 03 program to find the area of a triangle

```
#inputs given are base and height by the user for the
#calculation of area of the triangle
base = float(input("Enter the length of the base of the triangle: "))
height = float(input("Enter the length of the height of the triangle: "))
area = 0.5 * base * height
print("The area of the triangle is: ", area)
#the above statement displays the result
```

```
Enter the length of the base of the triangle: 45
Enter the length of the height of the triangle: 20
The area of the triangle is:  450.0
```

Program 04 code to swap two variables

```
#put the two numbers to be swaped
num1 = input("Enter first number: ")
num2 = input("Enter second number: ")
#display the original numbers
print(f"Original values: num1 = {num1}, num2 = {num2}")
temp = num1
num1 = num2
num2 = temp
print(f"Swapped values are : num1 = {num1} , num2 = {num2}")
```

```
Enter first number: 1111
Enter second number: 2222
Original values: num1 = 1111, num2 = 2222
Swapped values are : num1 = 2222 , num2 = 1111
```

Program 05 code to generate random number

```
#code for generating a random number
import random
print(f"Random number: {random.randint(1,100)}") #prints random
#value between 1 and 100
```

```
Random number: 45
```

Progarm 06 program to convert kilometers to miles

```
km = float(input("Enter the distance in km: "))
miles = km * 0.621371
print(f"The distance in miles is: {miles}")
```

```
Enter the distance in km: 100
The distance in miles is: 62.137100000000004
```

Program 07 program to convert celsius to fahrenheit

```
cel = float(input("Enter the temperature in celsius: "))
far = (cel * 1.8) + 32
print(f"The temperature in fahrenheit is: {far}")
```

```
Enter the temperature in celsius: 27
The temperature in fahrenheit is: 80.6
```

Program 08 code to display calender

```
import calendar
year = int(input("Enter the year: "))
month = int(input("Enter the month: "))
print(calendar.month(year,month))
```

```
Enter the year: 2025
Enter the month: 5
      May 2025
Mo Tu We Th Fr Sa Su
          1  2  3  4
 5  6  7  8  9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30 31
```

Program 09 Code to solve a quadratic equation , considering the standard form of the quadratic equation :

$$ax^2 + bx + c = 0$$

$$a, b, c \in \mathbb{R}$$

$$a \neq 0$$

```
import math
# Input coefficients
a = float(input("Enter coefficient a: "))
b = float(input("Enter coefficient b: "))
c = float(input("Enter coefficient c: "))
# Calculate the discriminant
discriminant = b**2 - 4*a*c
# Check if the discriminant is positive, negative, or zero
if discriminant > 0:
 # Two real and distinct roots
 root1 = (-b + math.sqrt(discriminant)) / (2*a)
 root2 = (-b - math.sqrt(discriminant)) / (2*a)
 print(f"Root 1: {root1}")
 print(f"Root 2: {root2}")
elif discriminant == 0:
 # One real root (repeated)
 root = -b / (2*a)
 print(f"Root: {root}")
else:
 # Complex roots
 real_part = -b / (2*a)
 imaginary_part = math.sqrt(abs(discriminant)) / (2*a)
 print(f"Root 1: {real_part} + {imaginary_part}i")
 print(f"Root 2: {real_part} - {imaginary_part}i")
```

```
Enter coefficient a: 1
Enter coefficient b: 4
Enter coefficient c: 8
Root 1: -2.0 + 2.0i
Root 2: -2.0 - 2.0i
```

Program 10 code for swapping two variables without temp variable

```
a = 5
b = 10
# Swapping without a temporary variable
print("Before swapping:")
print("a =", a)
print("b =", b)
a, b = b, a
print("After swapping:")
print("a =", a)
print("b =", b)
```

```
Before swapping:
a = 5
b = 10
After swapping:
a = 10
b = 5
```