Assignment 1

Python for Data Science

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1. Which of the following is a keyword in Python?
A) true
B) False
C) none
D) var

Answer: B) False

2. What will be the output of the following code?

>   a = 2
>
>   b = 3
>
>   c = 4
>
>   print(a ** b ** c)

A) 4096
B) 2417851639229258349412352
C) 64
D) 512

Answer: B) 2417851639229258349412352

3. Write a Python program that takes marks of 3 subjects, calculates the average, and prints whether the student passed or failed. (Assume pass if average ≥ 40).

Answer:

m1 = int(input("Enter marks in subject 1: "))

m2 = int(input("Enter marks in subject 2: "))

m3 = int(input("Enter marks in subject 3: "))

avg = (m1 + m2 + m3) / 3

print("Average =", avg)

if avg >= 40:

   print("Result: Pass")

else:

   print("Result: Fail")

4. What are bitwise operators in Python? Explain with examples.

Answer:

Bitwise operators work at the binary level.

1. & (AND) → 5 & 3 = 1
   (101 & 011 = 001)

2. | (OR) → 5 | 3 = 7
   (101 | 011 = 111)

3. ^ (XOR) → 5 ^ 3 = 6
   (101 ^ 011 = 110)

4. ~ (NOT) → ~5 = -6

5. << (Left shift) → 5 << 1 = 10

6. >> (Right shift) → 5 >> 1 = 2