```python
# 📝 Python Assignment – 01
# Topics: Variables, Data Types & Operators

# ------------------------------------------
# Q1: Variables & Data Types
# ------------------------------------------

# Creating variables
name = "Abdul Rehman"   # full name
age = 17                # age
is_student = True       # boolean value

# Printing all variables in one line
print("Name:", name, "| Age:", age, "| Student:", is_student)

# Printing data types of each variable
print("Data type of name:", type(name))
print("Data type of age:", type(age))
print("Data type of is_student:", type(is_student))


# ------------------------------------------
# Q2: Arithmetic Operators
# ------------------------------------------

x = 20
y = 6

print("\nArithmetic Operations:")
print("Addition:", x + y)
print("Subtraction:", x - y)
print("Multiplication:", x * y)
print("Division:", x / y)          # normal division
print("Floor Division:", x // y)   # division without decimals
print("Modulus:", x % y)           # remainder
print("Exponent:", x ** y)         # power (x^y)


# ------------------------------------------
# Q3: Assignment Operators
# ------------------------------------------

num = 10
num += 5    # add 5
num *= 2    # multiply by 2
num -= 4    # subtract 4

print("\nFinal value of num:", num)


# ------------------------------------------
# Q4: Comparison Operators
# ------------------------------------------

a = 15
b = 12

print("\nComparison Results:")
print("a > b:", a > b)
```

```
print("a < b:", a < b)
print("a == b:", a == b)
print("a != b:", a != b)
print("a >= b:", a >= b)
print("a <= b:", a <= b)


# ------------------------------------------
# Q5: Logical Operators
# ------------------------------------------

p = True
q = False

print("\nLogical Operations:")
print("p and q:", p and q)
print("p or q:", p or q)
print("not p:", not p)
print("not q:", not q)


# ------------------------------------------
# Q6: Real-Life Example
# ------------------------------------------

price_per_notebook = 80
quantity = 7
total_price = price_per_notebook * quantity

money = 600

print("\nReal-Life Example:")
print("Total price of 7 notebooks:", total_price, "rupees")

if money >= total_price:
    print("You have enough money to buy the notebooks.")
else:
    print("You do NOT have enough money to buy the notebooks.")


# ------------------------------------------
# Q7: Bonus (Optional)
# ------------------------------------------

# Taking user input
num1 = int(input("\nEnter first number: "))
num2 = int(input("Enter second number: "))

# Printing sum
print("Sum of numbers:", num1 + num2)

# Checking comparison
if num1 > num2:
    print("First number is greater than second number.")
else:
    print("First number is NOT greater than second number.")
```

```
Name: Abdul Rehman | Age: 17 | Student: True
Data type of name: <class 'str'>
Data type of age: <class 'int'>
```

```
Data type of is_student: <class 'bool'>

Arithmetic Operations:
Addition: 26
Subtraction: 14
Multiplication: 120
Division: 3.3333333333333335
Floor Division: 3
Modulus: 2
Exponent: 64000000

Final value of num: 26

Comparison Results:
a > b: True
a < b: False
a == b: False
a != b: True
a >= b: True
a <= b: False

Logical Operations:
p and q: False
p or q: True
not p: False
not q: True

Real-Life Example:
Total price of 7 notebooks: 560 rupees
You have enough money to buy the notebooks.

Enter first number: 20
Enter second number: 40
Sum of numbers: 60
First number is NOT greater than second number.
```

Could not connect to the reCAPTCHA service. Please check your internet connection and reload to get a reCAPTCHA challenge.