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Data Science latest assignments - 16 Aug 2025

**Assignment 1: Basics of Python**

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## ✓ PYTHON PROGRAMMING ASSIGNMENT

### BASICS OF PYTHON

#### Prime Numbers

```
num = int(input("Enter a number:"))
if num > 1:
    for i in range(2, int(num**0.5) + 1):
        if num % i == 0:
            print(num, "is not a prime number")
            break
    else:
        print(num, "is a prime number")
else:
    print(num, "is not a prime number")
```

```
Enter a number:23
23 is a prime number
```

#### Product of random numbers

```
import random
r1 = random.randint(1,100)
r2 = random.randint(1,100)
print(r1)
print(r2)
num1 = int(input("Guess the product of r1 and r2:"))
product = r1 * r2
if (num1 == product):
    print("Correct")
else:
    print("Incorrect")
```

```
81
7
Guess the product of r1 and r2:567
Correct
```

#### Squares of Even/Odd numbers

```
for i in range(100,201):
    if i % 2 == 0:
        print(i,"** 2 =", i**2, end = ", ")
```

```
100 ** 2 = 10000, 102 ** 2 = 10404, 104 ** 2 = 10816, 106 ** 2 = 11236, 108 ** 2 = 11664, 110 ** 2 = 12100, 112 ** 2 = 12544
```

#### Hospital Billing System

✓ Problem Statement (Question): Hospital Billing System

A hospital charges its patients based on the following:

- Room charges per day: ₹2,000
- Doctor consultation fee (flat): ₹1,500
- Lab test charges: Based on the number of tests taken. Each test costs ₹300
- Medicine charges: Total cost of medicines provided

- Discount: If the total bill (before discount) exceeds ₹10,000, a 10% discount is applied

Write a Python program to calculate the final bill for a patient who:

- Stayed for 4 days
- Had 3 lab tests
- Had medicine charges of ₹2,400

```
#Hospital Billing System
#Number of days patient stayed in hospital = days
days = int(input("Number days stayed in hospital:"))
medicine_charges = int(input("Medicine charges:"))
lab_tests = int(input("Number of lab tests taken:"))
#doctor consultation fee doc_fee
day_charge = 2000
doc_fee = 1500
test_cost = 300
final_bill = (days * day_charge) + doc_fee + (lab_tests * test_cost) + medicine_charges
if final_bill > 10000:
    final_bill = final_bill - (final_bill * 0.1)
    print("Final Bill after 10% discount:", final_bill)
else:
    print("Final Bill:", final_bill)
```

```
Number days stayed in hospital:4
Medicine charges:2400
Number of lab tests taken:3
Final Bill after 10% discount: 11520.0
```