**NAME:** Sriyansh

**Roll No.:** 25901336

**Course Code:** AI-503

**Course:** Computer Programming with Python

# Assignment-2

## 1.Positive or Negative

Write a program to check whether a given number is positive, negative, or zero.

```
number = float(input("Enter a number: "))

if number > 0:
    print("The number is positive.")
elif number < 0:
    print("The number is negative.")
else:
    print("The number is zero.")

# --- LOGIC ---
# The code takes a number as input from the user and checks if it is positive, negative, or zero.
# It uses if-elif-else statements:
# - If the number is greater than 0, it prints "The number is positive."
# - If the number is less than 0, it prints "The number is negative."
# - If the number is equal to 0, it prints "The number is zero."
```

```
The number is negative.
```

## 2.Even or Odd

Write a program to check whether a given integer is even or odd.

```
num = int(input("Enter an integer: "))
if num % 2 == 0:
    print("The number is even.")
else:
    print("The number is odd.")

# --- LOGIC ---
# The code takes an integer input from the user and checks if it is even or odd.
# It uses the modulo operator (%) to check the remainder when the number is divided by 2:
# - If the remainder is 0, the number is even.
# - Otherwise, the number is odd.
# The result is printed accordingly.
```

```
The number is even.
```

## 3. Largest of Two Numbers

Write a program to input two numbers and print which one is larger.

```
a = float(input("Enter first number: "))
b = float(input("Enter second number: "))

if a > b:
    print(f"{a} is larger than {b}.")
elif b > a:
    print(f"{b} is larger than {a}.")
else:
    print("Both numbers are equal.")


# --- LOGIC ---
# The code takes two numbers as input from the user and compares them.
# It uses if-elif-else statements:
# - If the first number is greater than the second, it prints that the first is larger.
```

```
# - If the second number is greater than the first, it prints that the second is larger.
# - If both numbers are equal, it prints that both are equal.
```

```
Both numbers are equal.
```

## 4.**Absolute Value**

Write a program to find the absolute value of a given number without using the abs() function.

```
user_input = float(input("Enter a number: "))
if user_input < 0:
    absolute_value = -user_input
else:
    absolute_value = user_input
print(f"The absolute value is {absolute_value}.")

# --- LOGIC ---
# The code takes a number as input from the user and calculates its absolute value.
# It checks if the number is negative:
# - If it is negative, it multiplies the number by -1 to make it positive.
# - If it is not negative, it keeps the number as is.
# Finally, it prints the absolute value.
```

```
The absolute value is 5.0.
```

## 5.**Eligibility for Voting**

Write a program to check whether a person is eligible to vote or not. (A person is eligible if their age is 18 or above).

Write a program that takes marks as input and prints:

- 'Pass' if marks are 40 or above
- 'Fail' if marks are less than 40

```
marks = float(input("Enter your marks: "))
if marks >= 40:
    print("Pass")
```

```
age = int(input("Enter your age: "))
if age >= 18:
    print("You are eligible to vote.")
else:
    print("You are not eligible to vote.")

# --- LOGIC ---
# The code takes the user's age as input and checks if they are eligible to vote.
# It uses an if-else statement:
# - If the age is 18 or older, it prints "You are eligible to vote."
# - If the age is less than 18, it prints "You are not eligible to vote."
```

```
You are eligible to vote.
```

## 6.**Leap Year Check**

Write a program to check whether a given year is a leap year or not. (Hint: A leap year is divisible by 4, but not by 100 unless also divisible by 400).

```
year = int(input("Enter a year: "))
if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
    print(f"{year} is a leap year.")
else:
    print(f"{year} is not a leap year.")

# --- LOGIC ---
# The code takes a year as input from the user and checks if it is a leap year.
# It uses the following rules to determine if a year is a leap year:
# - A year is a leap year if it is divisible by 4.
# - However, if the year is divisible by 100, it is not a leap year, unless it is also divisible by 400.
```

```
1200 is a leap year.
```

## 7.Grade Calculation

```
else:
    print("Fail")

# --- LOGIC ---
# The code takes the user's marks as input and checks if they have passed or failed.
# It uses an if-else statement:
# - If the marks are 40 or above, it prints "Pass."
# - If the marks are below 40, it prints "Fail."
```

```
Fail
```

## 8.Multiple of 5

Write a program to check whether a given number is a multiple of 5.

```
num = int(input("Enter an integer: "))
if num % 5 == 0:
    print(f"{num} is a multiple of 5.")
else:
    print(f"{num} is not a multiple of 5.")

# --- LOGIC ---
# The code takes an integer input from the user and checks if it is a multiple of 5.
# It uses the modulo operator (%) to check the remainder when the number is divided by 5:
# - If the remainder is 0, the number is a multiple of 5.
# - Otherwise, it is not a multiple of 5.
```

```
6 is not a multiple of 5.
```

## 9.Character Case Check

Write a program to input a character and check whether it is an uppercase letter, lowercase letter, or not a letter.

```
char = input("Enter a character: ")

if len(char) == 1:
    if char.isupper():
        print("Uppercase letter")
    elif char.islower():
        print("Lowercase letter")
    else:
        print("Not a letter")
else:
    print("Please enter a single character.")

# --- LOGIC ---
# The code takes a single character as input from the user and checks if it is an uppercase letter, a lowercase letter, or not a l
# It first checks if the input length is 1:
# - If it is, it then checks if the character is uppercase using isupper() method.
# - If it is not uppercase, it checks if it is lowercase using islower() method.
# - If it is neither, it prints "Not a letter."
```

```
Not a letter
```

## 10.Discount Calculator

Write a program that calculates the discount:

- If purchase amount is greater than or equal to 1000, apply a 10% discount.
- Otherwise, no discount. Finally, print the final bill amount.

```
purchase_amount = float(input("Enter the purchase amount: "))
if purchase_amount >= 1000:
    discount = purchase_amount * 0.10
else:
    discount = 0
final_amount = purchase_amount - discount
print(f"Final bill amount: {final_amount}")

# --- LOGIC ---
# The code takes the purchase amount as input from the user and calculates the final bill amount after applying a discount if appl
# It checks if the purchase amount is 1000 or more:
```

```
# - If it is, it applies a 10% discount.
# - If it is less than 1000, no discount is applied.
```

```
Final bill amount: 2700.0
```