Fourth Industrial Revolution (4IR) Summer School

Python **P**rogramming – **D**ay **2** exercises

Conditional statements

Question 1 [Positive or negative number]

Write a Python program to check wither the entered number is positive, negative or zero.

```
Enter any number: 80
Number is POSITIVE
```

Question 2 [Even or Odd number]

Write a Python Program to read a number from the user and then check whether the given number is even or odd.

```
Enter any number to check even or odd: 11
Number is Odd
```

Question 3 [Leap year]

Leap year is a special year containing one extra day i.e. total of 366 days in a year. A year is said to be leap year, if the year is exactly divisible by **4** but and not divisible by **100**. Year is also a leap year if it is exactly divisible by **400**.

Write a Python program to check if a given year is leap or not.

```
Input year: 2004
2004 is a leap year
```

Question 4 [Electricity bill]

Write a Python program that reads the total electricity units consumed over a billing cycle and then calculates the total electricity bill according to the following condition:

- For first 50 units Rs. 0.50/unit
- For next 100 units Rs. 0.75/unit
- For next 100 units Rs. 1.20/unit
- For unit above 250 Rs. 1.50/unit

An additional surcharge of 20% is added to the bill.

```
Enter total units consumed: 150
Electricity Bill = SR 120.00
```

Question 5 [Letter grades]

Write a Python program to read a student marks for five subjects Physics, Chemistry, Arts, Mathematics and Computer, then calculates the student overall percentage and grade according to the follwing conditions:

- If percentage >= 90% : Grade A
- If percentage >= 80% : Grade B
- If percentage >= 70% : Grade C
- If percentage >= 60% : Grade D
- If percentage < 60% : Grade F

```
Enter five subjects marks: 95 95 97 98 90
Percentage = 95.00
Grade A
```

Question 6 [Temperature]

Write a complete Python program that prompts the user to input a value of temperature in either Fahrenheit (F) or Celsius (C). If the value entered is in Fahrenheit (F), the program converts it to Celsius (C). Likewise, if the input temperature is in Celsius (C), the program converts it to Fahrenheit (F).

The result is then displayed on the screen. The program must detect the unit of the input value automatically then carries out the conversion.

$$T_C = (T_F - 32)\frac{5}{9}$$

where T_C: Temperature in Celsius, T_F: Temperature in Fahrenheit.

```
Enter the temperature (in C or F):  30.7 C
The temperature you entered equals 87.26 F
```

```
Enter the temperature (in C or F): 90 F
The temperature you entered equals 32.22 C
```