

Experiment - 3.1.2. Celsius to Fahrenheit

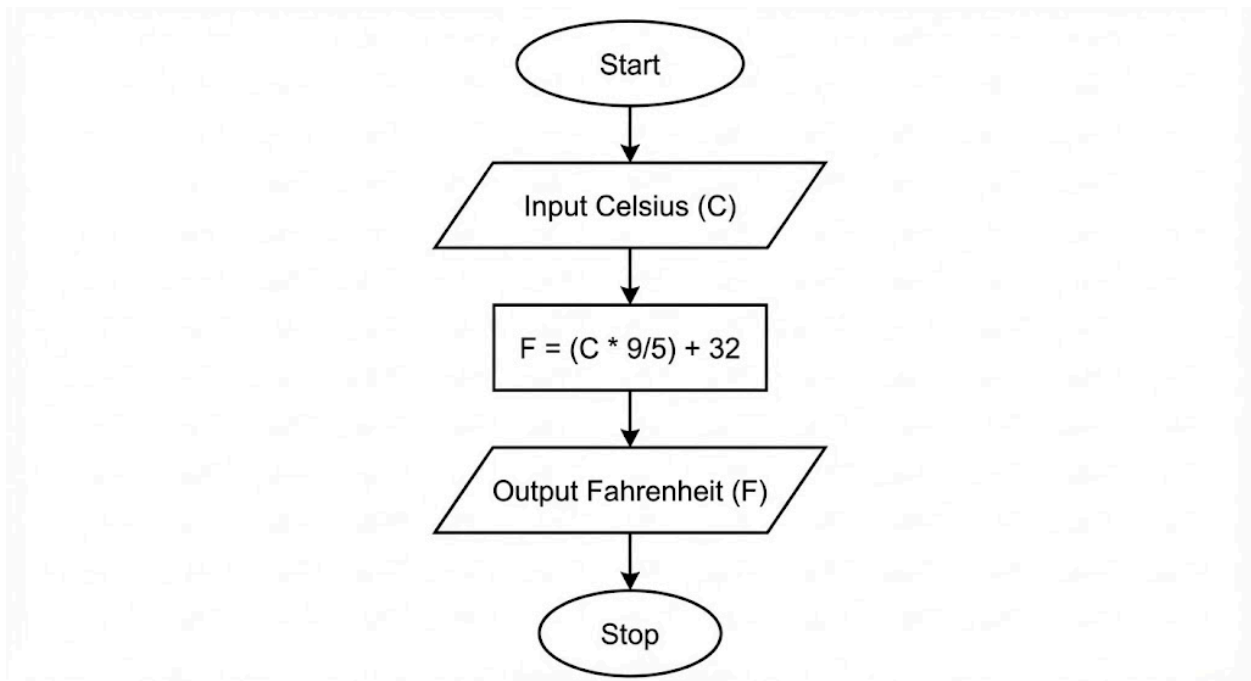
1. Aim

To design and implement a Python program that converts temperature from Celsius to Fahrenheit. The program accepts a floating-point value representing Celsius and applies the formula $Fahrenheit = (Celsius \times \frac{9}{5}) + 32$, displaying the result formatted to two decimal places.

2. Pseudocode

1. **START**
2. **READ** the input value as a float and store it in variable a (Celsius).
3. **CALCULATE** the Fahrenheit value using the formula: $b = a * (9/5) + 32$.
4. **STORE** the result in variable b.
5. **FORMAT** the value of b to 2 decimal places.
6. **PRINT** the formatted result.
7. **END**

3. Flowchart



4. Python Program

```
# Program to convert Celsius to Fahrenheit
# Input: Celsius value as a float
# Output: Fahrenheit value formatted to 2 decimal places
```

```
# Taking Celsius input from the user
a = float(input(""))
```

```
# Applying the conversion formula
b = a * (9/5) + 32
```

```
# Displaying the result formatted to 2 decimal places
print(f"{b:.2f}")
```

5. Experiment Screenshot

The screenshot displays the CODETANTRA web-based IDE interface. On the left, a problem titled "3.1.2. Celsius to Fahrenheit" is shown, including the formula $Fahrenheit = (Celsius \times \frac{9}{5}) + 32$ and input/output specifications. The main editor on the right contains the following Python code:

```
1 a = float(input(""))
2 b = a*(9/5) + 32
3 print(f"{b:.2f}")
4
```

Below the code editor, the execution results are displayed:

- Average time: 0.002 s (2.38 ms)
- Maximum time: 0.004 s (4.00 ms)
- 4 out of 4 shown test case(s) passed
- 4 out of 4 hidden test case(s) passed

A detailed view of "Test case 1" shows the expected output as 32.00 and the actual output as 32.00, both formatted to two decimal places. The interface includes a "Submit" button at the top right and a "Test cases" tab at the bottom.