Assignment (Integers & Floats)

Assignment 1 – Integers & Floats (Full Day)

Level 1 – Basics (Warm-Up)

1. Store your age in a variable and print it.

2. Store the price of an item (float) and print it.

3. Add, subtract, multiply, and divide two integers.

4. Divide two integers and show:

   - Normal division (`/`)

   - Floor division (`//`)

   - Modulus (`%`)

5. Multiply a float by an integer and print the result.

6. Use `type()` to check the data type of each result.

Level 2 – Operations

1. Write a program to convert temperature from Celsius to Fahrenheit.

2. Given a circle's radius, calculate **area** and **circumference**.

3. Use `abs()` to find the absolute difference between two numbers.

4. Use `round()` to round 3.14159 to:

   - 2 decimal places

   - No decimal places

5. Show the effect of floor division with:

   - Two positive integers

   - Two negative integers

   - A positive and a negative integer

Level 3 – Type Casting & Built-ins

1. Convert a float to an integer (and observe truncation).

2. Convert a string `"25.5"` to a float and add 10 to it.

3. Use `max()` and `min()` to find the largest and smallest of three numbers.

4. Use `sum()` to add a list of integers.

5. Generate a random integer between 1 and 100 (use `random.randint()`).

Level 4 – Challenge Problems

1. Create a program to check if a number is **even or odd**.

2. Calculate **compound interest** for a given principal, rate, and time.

3. Convert seconds into hours, minutes, and seconds format.

4. Find the distance between two points `(x1, y1)` and `(x2, y2)` using the distance formula.