Practice: High-Level Robot Movement Functions

Objective:
In this practice, students will create high-level robot movement functions. These functions abstract low-level motor control and make robot programming easier to read, maintain, and debug.

Part A: Required Functions

Create the following high-level movement functions in your code:

- void move_forward(int speed);
- void move_backward(int speed);
- void turn_left(int speed);
- void turn_right(int speed);
- void stop_robot();

Each function should control the motors appropriately based on the given speed value.

Part B: Demonstration Task

After implementing the functions above, write a demonstration program that performs the following sequence:

1. Move forward with speed of 40 for 2 seconds
2. Turn left for 1 second with speed 30
3. Turn right for 1 second with speed 30
4. Move backward with speed of 40 for 2 seconds
5. Stop for 3 seconds

Part C: Student Tasks

1. Write all required movement functions.
2. Use delay or timer-based logic to control the duration of each movement.
3. Upload and run the program on the robot.
4. Observe the robot behavior and verify that it follows the correct sequence.

Expected Outcome

By the end of this practice, students should be able to:
- Understand the concept of abstraction in robot control
- Write reusable motor control functions
- Control robot movement using time-based logic