BUG 0 ALGORITHM

Task: Implement a robot navigation simulation using the **Bug 0 algorithm**.

Environment: A 2D map containing static obstacles (black regions in the provided image).
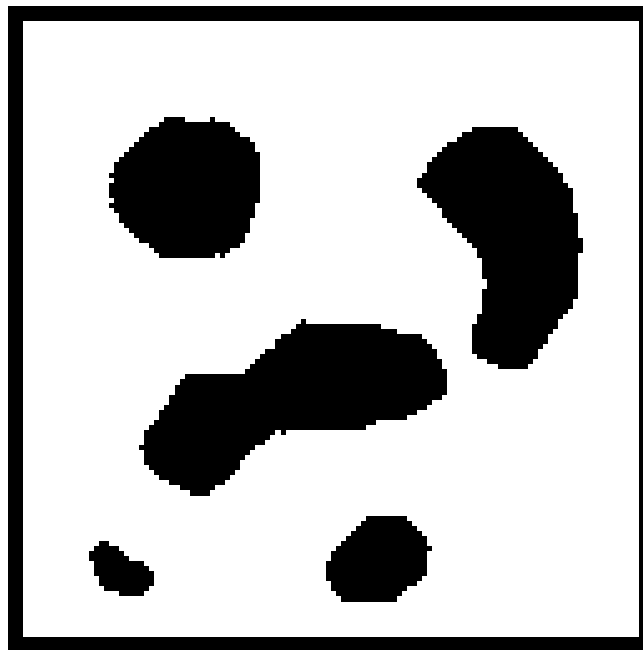
Scenario:

- **Start Position:** Coordinates (10, 10).
- **Goal Position:** Coordinates (90, 80).
- **Robot Capabilities:** The robot knows its current position and the goal position. It has sensors to detect obstacles immediately in its path.

Algorithm (Bug 0 Rules):

1. **Goal Seeking:** The robot moves directly towards the goal in a straight line.
2. **Obstacle Encounter:** If an obstacle blocks the straight path, the robot switches to "Wall Following" mode.
3. **Wall Following:** The robot follows the boundary of the obstacle (e.g., keeping the wall on its right side).
4. **Leaving Wall:** The robot immediately stops following the wall and reverts to "Goal Seeking" mode as soon as a straight line to the goal is unobstructed by the current obstacle.

Objective: Write a Python script that simulates the robot's movement and visualizes the path taken from Start to Goal.

(x-1,y-1) NW	(x,y-1) N	(x+1,y-1) NE
(x-1,y) W	(x,y) ROBOT	(x+1,y) E
(x-1,y+1) SW	(x,y+1) S	(x+1,y+1) SE