



# ARTIFICIAL INTELLIGENCE AND PROGRAMMING ROBOT

PRACTICAL NO 3

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## Practical No. 3.A

### Aim:

Write a program to create a robot that moves in a square using a while loop.

### Theory:

A gear is a wheel with evenly sized and spaced teeth machined or formed around its perimeter. Gears are used in rotating machinery not only to transmit motion from one point to another, but also for the mechanical advantage they offer. Two or more gears transmitting motion from one shaft to another is called a gear train, and gearing is a system of wheels or cylinders with meshing teeth. Gearing is chiefly used to transmit rotating motion but can also be adapted to translate reciprocating motion into rotating motion and vice versa.

We use a while loop to continuously turn 90 degree after moving forward to move in a square path.

### Code:

```
package squarewithwhile;

import ch.aplu.robotsim.*;

public class SquareWithWhile {

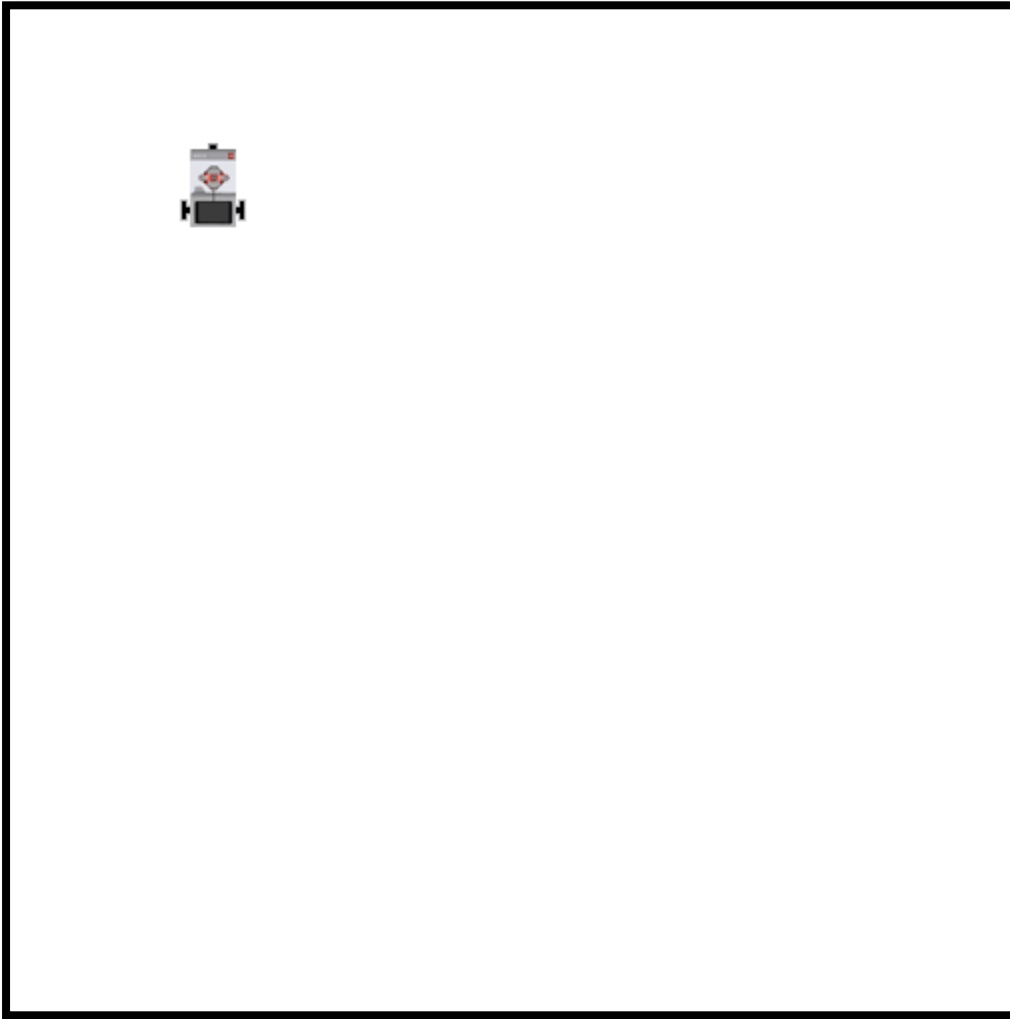
    static {
        RobotContext.setStartDirection(90);
        RobotContext.setStartPosition(100, 100);
    }

    public SquareWithWhile() {

        LegoRobot robot = new LegoRobot();
        Gear gear = new Gear();
        robot.addPart(gear);
        gear.setSpeed(100);
        while (true) {
            gear.forward(1000);
            gear.left(90);
        }
    }

    public static void main(String[] args) {
        new SquareWithWhile();
    }
}
```

**Output:**



**Conclusion:**

We successfully used gear and a while loop to simulate movement in a square path.

## Practical No. 3.B

### Aim:

Write a program to create a robot that moves in a square using a for loop.

### Theory:

A gear is a wheel with evenly sized and spaced teeth machined or formed around its perimeter. Gears are used in rotating machinery not only to transmit motion from one point to another, but also for the mechanical advantage they offer. Two or more gears transmitting motion from one shaft to another is called a gear train, and gearing is a system of wheels or cylinders with meshing teeth. Gearing is chiefly used to transmit rotating motion but can also be adapted to translate reciprocating motion into rotating motion and vice versa.

We use a for loop to continuously turn 90 degree after moving forward to move in a square path.

### Code:

```
package stepswithfor;

import ch.aplu.robotsim.*;

public class StepsWithFor {

    static {
        RobotContext.setStartDirection(90);
        RobotContext.setStartPosition(100, 100);
    }

    public StepsWithFor() {

        LegoRobot robot = new LegoRobot();
        Gear gear = new Gear();
        robot.addPart(gear);
        gear.setSpeed(100);
        for (int i = 1; i <= 4; i++) {
            gear.forward(1000);
            gear.left(90);
        }
        Tools.delay(2000);
        robot.exit();
    }
}
```

```
}  
public static void main(String[] args) {  
    new StepsWithFor();  
}  
}
```

**Output:**



**Conclusion:**

We successfully used gear and a for loop to simulate movement in a square path.