Report

Name:

Ziad Mahmoud SaadEldeen

Report:

Collision Avoidance Project

My profile:

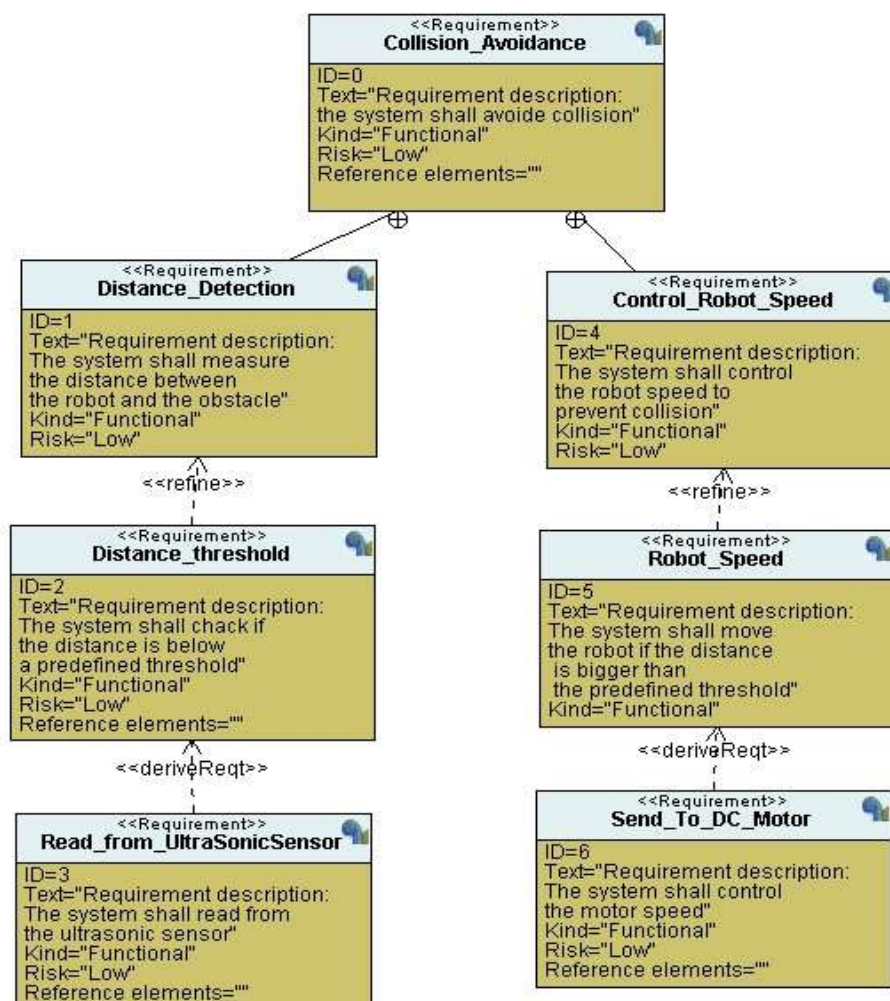**ziadmahmoud55500@gmail.com (learn-in-depth.com)**
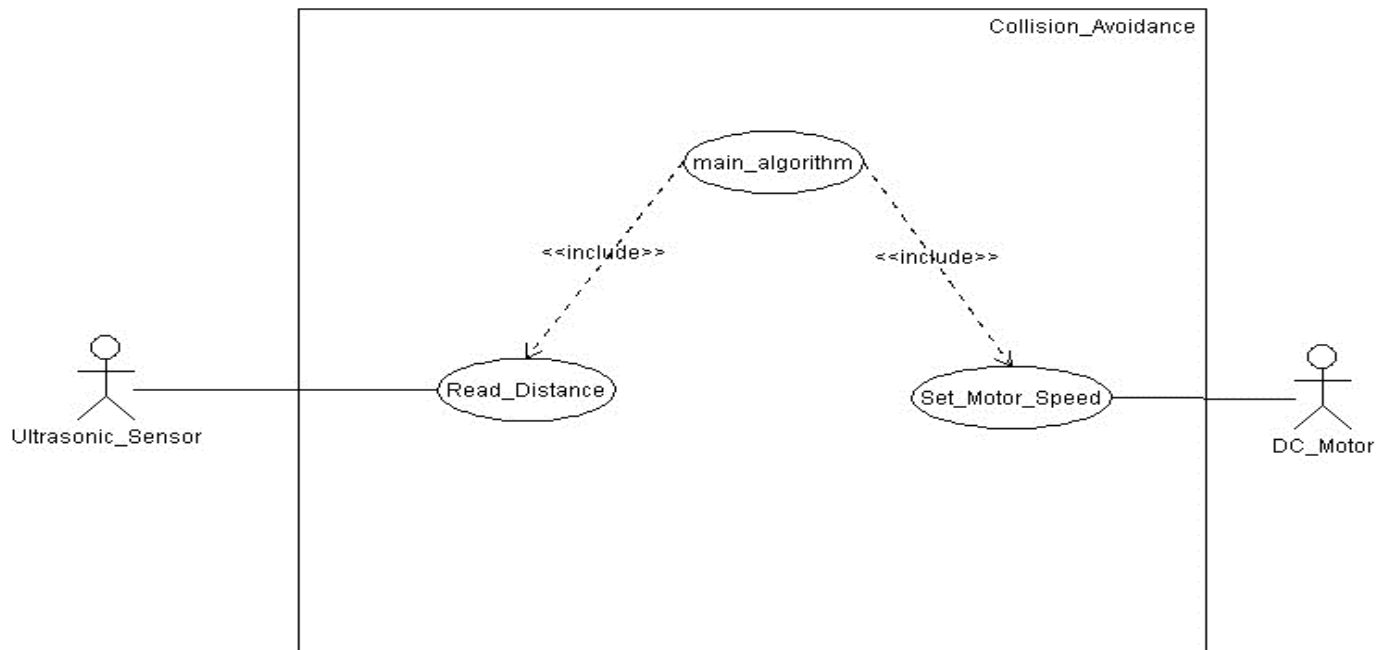
Content :

Case study:

- Collision avoiding robot:
    - When the distance between the obstacle and the robot is less than 50 cm the robot stops.

- The following assumptions have been made:
    - The controller set up and shutdown procedures are not modeled.
    - The controller maintenance is not modeled.
    - Ultrasonic sensor never fails.
    - Motor never fails.
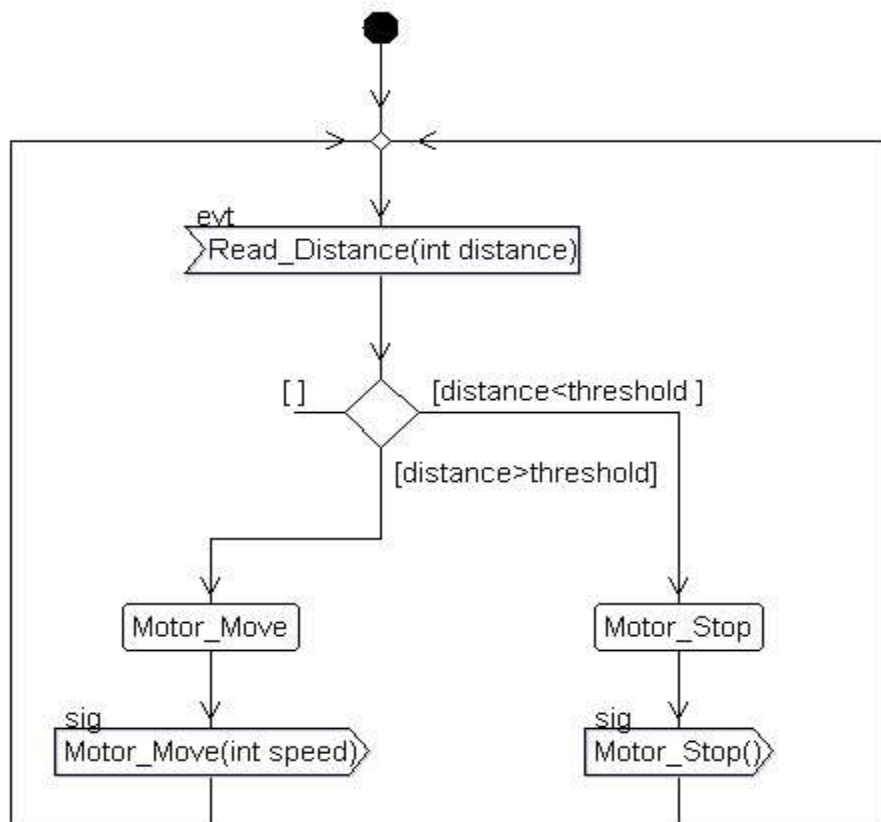   - The controller never faces power cut.
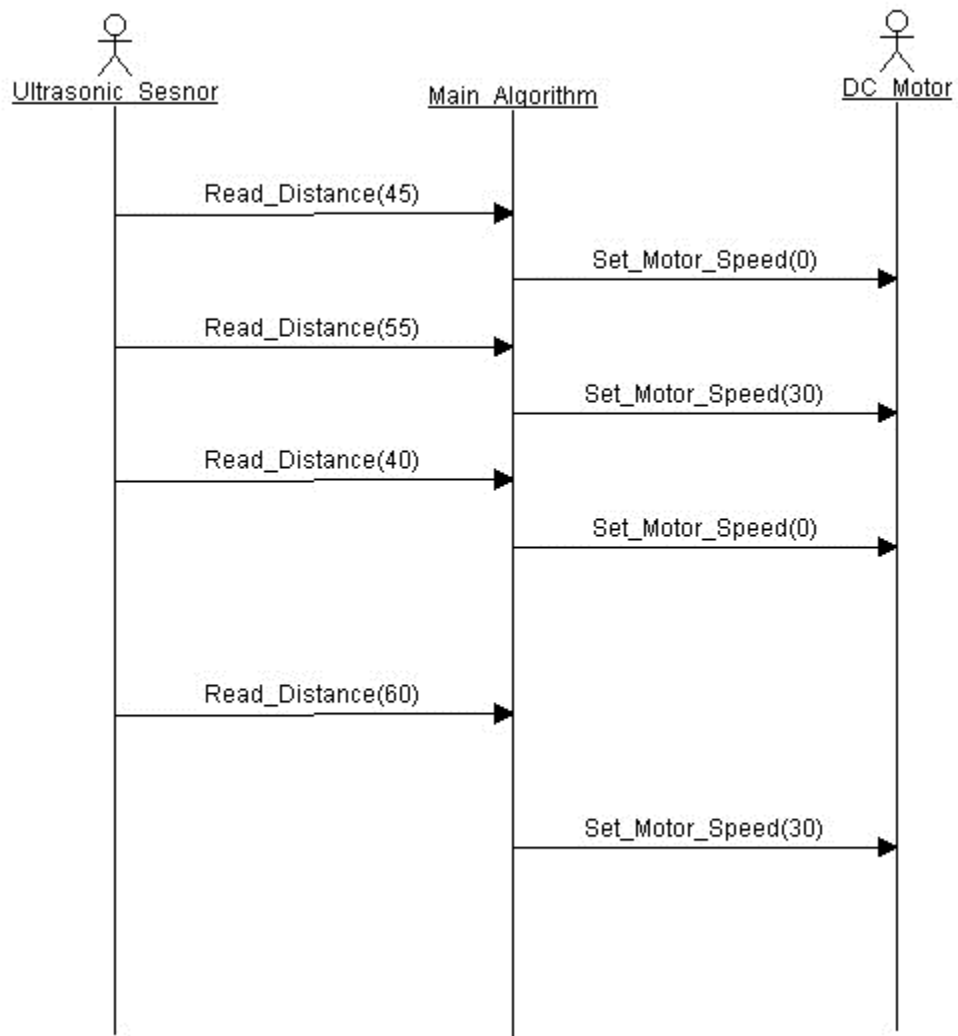
Requirements:
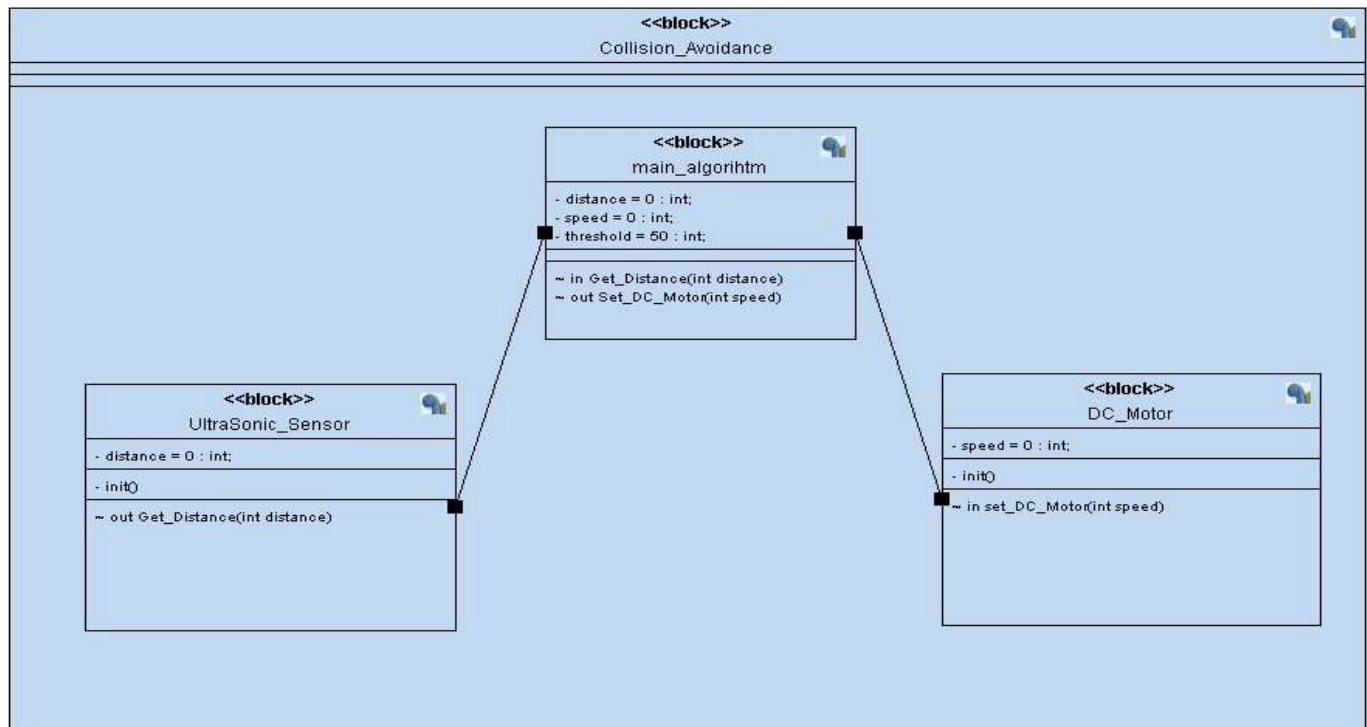
System analysis:

use case diagram:

Activity diagram:

Sequence Diagram:

Ultrasonic_Sesnor   Main_Algorithm   DC_Motor

Read_Distance(45)

Set_Motor_Speed(0)

Read_Distance(55)

Set_Motor_Speed(30)

Read_Distance(40)

Set_Motor_Speed(0)

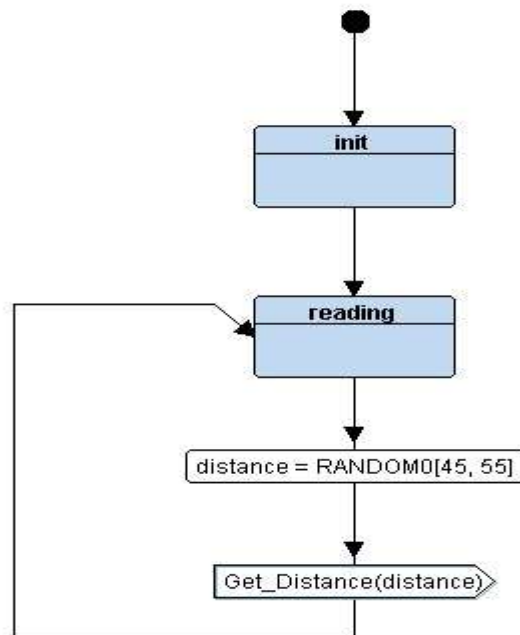Read_Distance(60)

Set_Motor_Speed(30)
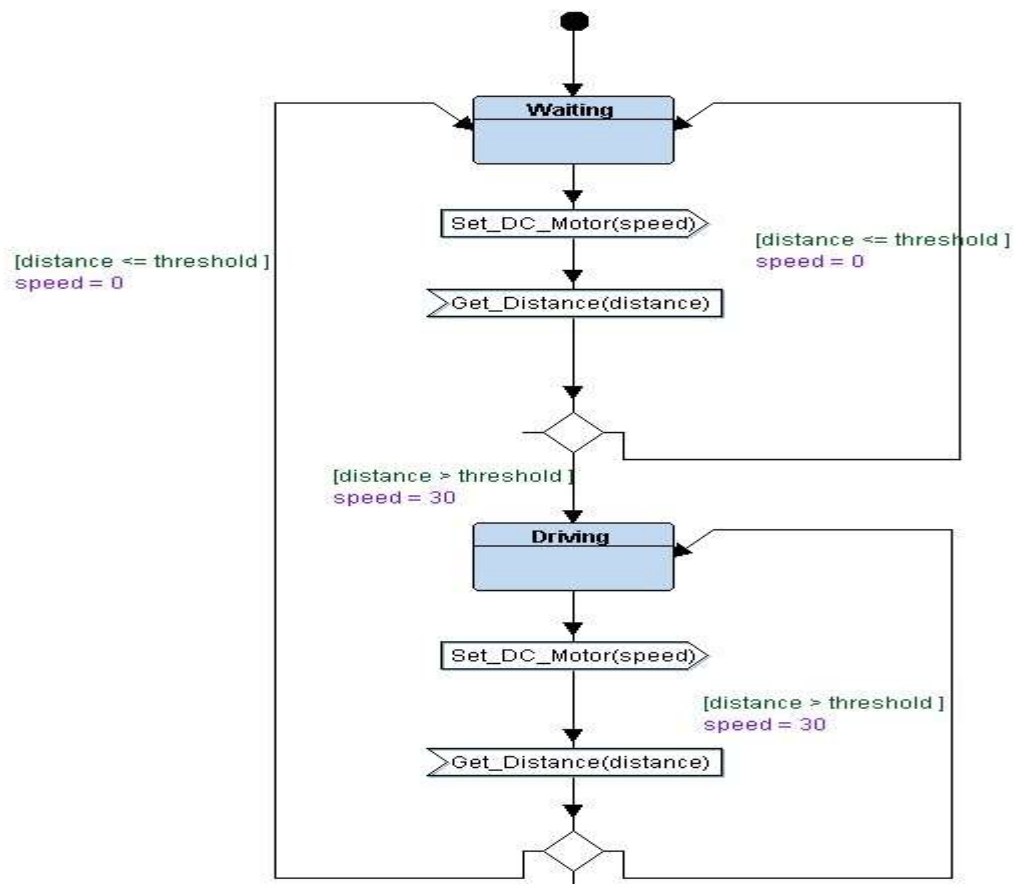
System Design:

Block diagram:

Ultrasonic sensor state machine diagram:

Collision avoidance state machine diagram:

DC motor state machine diagram: