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Learn-In-Depth Diploma

Unit 4 Lesson 2

**Report About: Collision Avoidance**

Here I did this report about collision avoidance system with two ways:

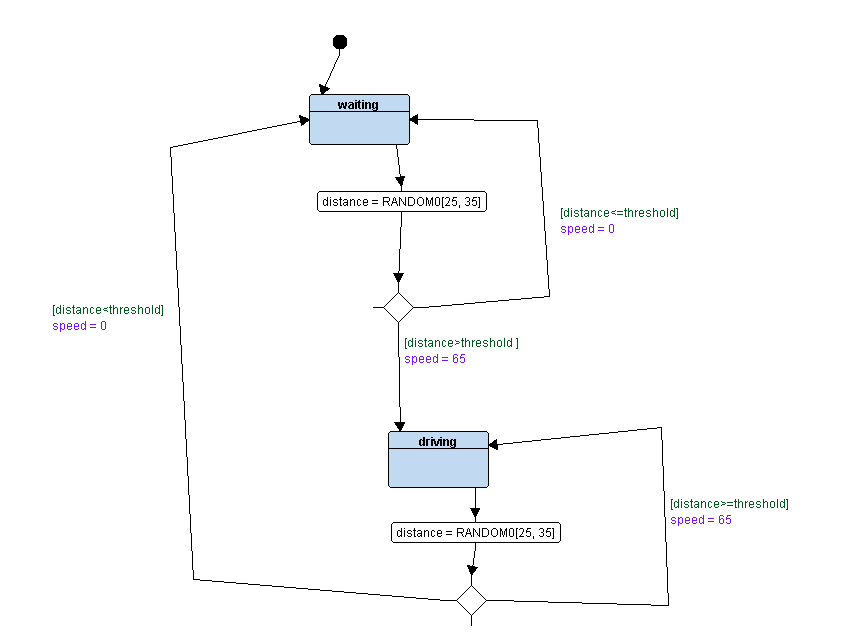
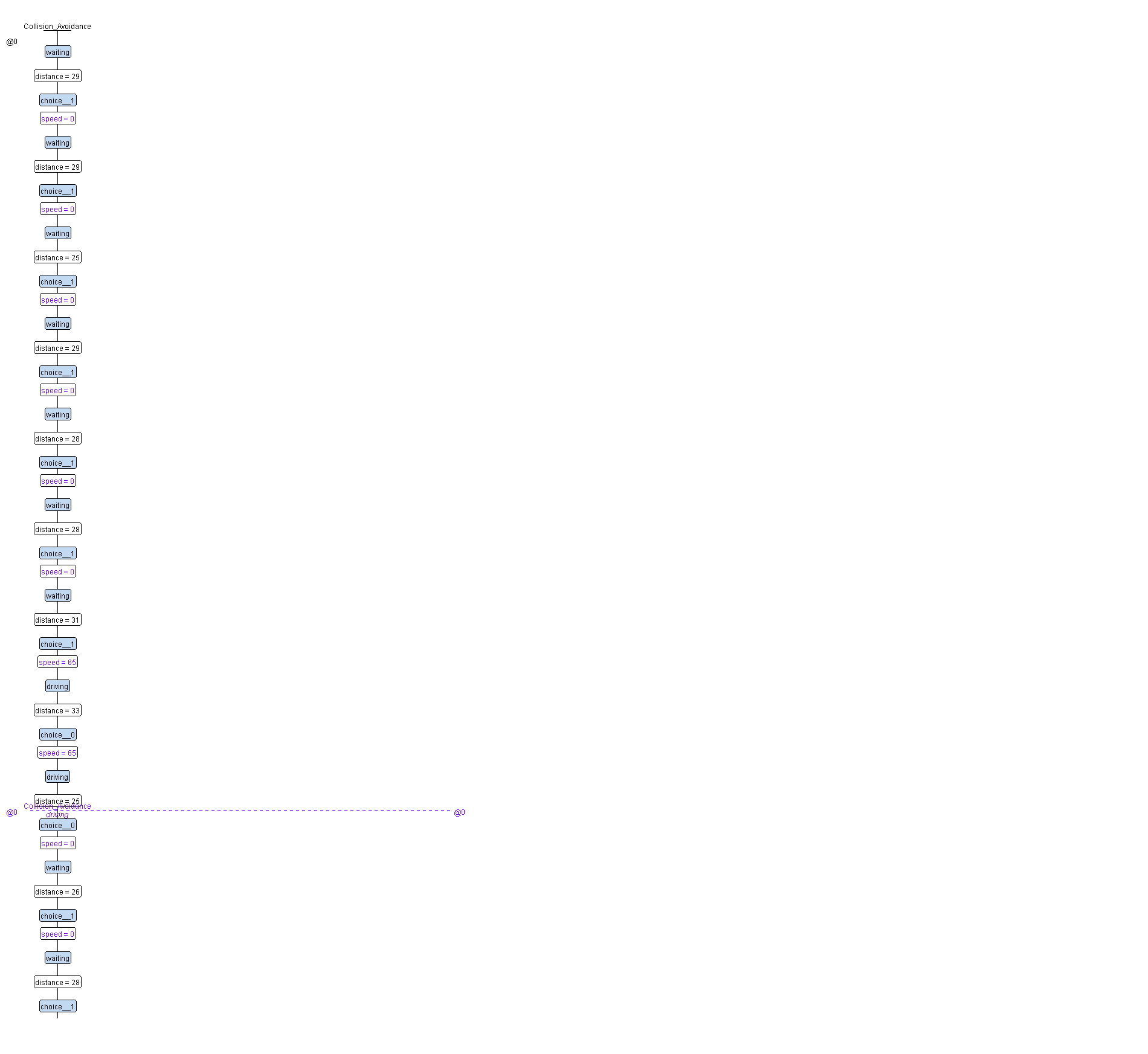
1. Collision Avoidance System with one block.
2. Collision Avoidance System with multiple blocks.

**Collision Avoidance System with one block**

**My Photos about it:**

A screenshot of a computer

Description automatically generated



**My Log:**

UltraSonic\_init

DC\_Motor\_init

Waiting State: distance = 33, Speed = 65

Driving State: distance = 34, Speed = 65

Driving State: distance = 34, Speed = 65

Driving State: distance = 26, Speed = 0

Waiting State: distance = 32, Speed = 65

Driving State: distance = 30, Speed = 0

Waiting State: distance = 30, Speed = 0

Waiting State: distance = 35, Speed = 65

Driving State: distance = 26, Speed = 0

Waiting State: distance = 25, Speed = 0

Waiting State: distance = 32, Speed = 65

Driving State: distance = 32, Speed = 65

Driving State: distance = 30, Speed = 0

Waiting State: distance = 33, Speed = 65

Driving State: distance = 31, Speed = 65

Driving State: distance = 32, Speed = 65

Driving State: distance = 28, Speed = 0

Waiting State: distance = 32, Speed = 65

Driving State: distance = 34, Speed = 65

Driving State: distance = 27, Speed = 0

Waiting State: distance = 32, Speed = 65

Driving State: distance = 32, Speed = 65

Driving State: distance = 33, Speed = 65

Driving State: distance = 35, Speed = 65

Driving State: distance = 31, Speed = 65

Driving State: distance = 32, Speed = 65

Driving State: distance = 33, Speed = 65

Driving State: distance = 30, Speed = 0

Waiting State: distance = 31, Speed = 65

Driving State: distance = 32, Speed = 65

Driving State: distance = 27, Speed = 0

Waiting State: distance = 26, Speed = 0

Waiting State: distance = 34, Speed = 65

Driving State: distance = 35, Speed = 65

Driving State: distance = 35, Speed = 65

Driving State: distance = 27, Speed = 0

Waiting State: distance = 29, Speed = 0

Waiting State: distance = 34, Speed = 65

Driving State: distance = 32, Speed = 65

Driving State: distance = 30, Speed = 0

Waiting State: distance = 29, Speed = 0

Waiting State: distance = 32, Speed = 65

Driving State: distance = 30, Speed = 0

Waiting State: distance = 31, Speed = 65

Driving State: distance = 32, Speed = 65

Driving State: distance = 25, Speed = 0

Waiting State: distance = 30, Speed = 0

Waiting State: distance = 25, Speed = 0

Waiting State: distance = 30, Speed = 0

Waiting State: distance = 29, Speed = 0

**Collision Avoidance System with multiple blocks.**

**My Photos about it:**

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

Figure 1DC\_Motor

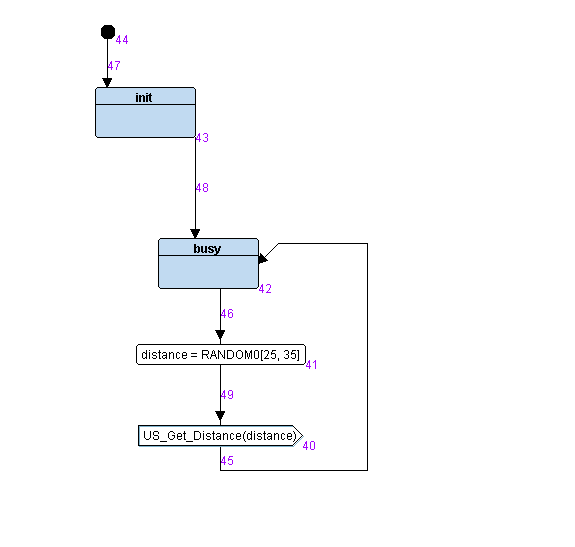
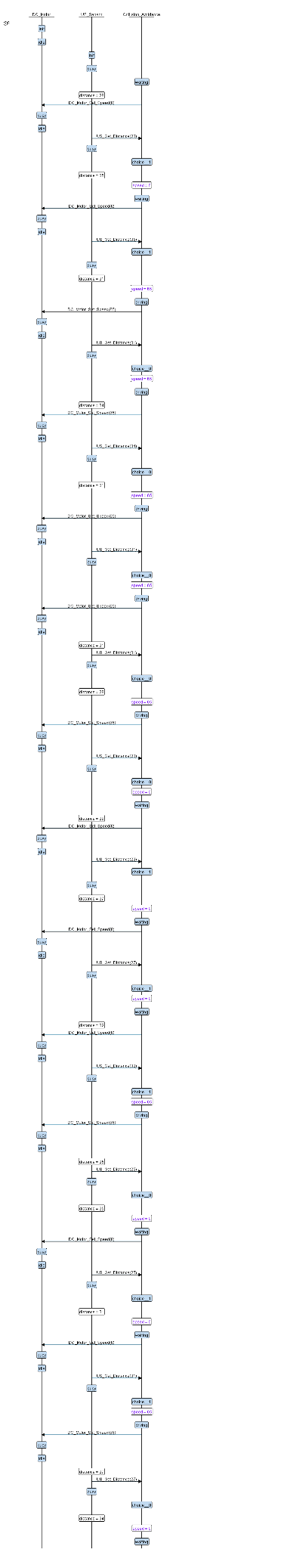


Figure 2UltraSonic.

A diagram of a computer program

Description automatically generated

Figure 3Collision\_Avoidance\_Mechanism



**My Log:**

US\_init

DC\_Motor\_init (idle State)

------------------------------------------------

US\_Busy state : distance = 33

DC\_Motor is Busy , Speed = 65

Waiting\_State: distance = 33 , I switched to the driving state with speed = 65

------------------------------------------------

------------------------------------------------

US\_Busy state : distance = 34

DC\_Motor is Busy , Speed = 65

Driving\_State: distance = 34 , I am still in the driving state with speed = 65

------------------------------------------------

------------------------------------------------

US\_Busy state : distance = 34

DC\_Motor is Busy , Speed = 65

Driving\_State: distance = 34 , I am still in the driving state with speed = 65

------------------------------------------------

------------------------------------------------

US\_Busy state : distance = 26

DC\_Motor is Busy , Speed = 0

Driving\_State: distance = 26 , I switched to the waiting state with speed = 0

------------------------------------------------

------------------------------------------------

US\_Busy state : distance = 32

DC\_Motor is Busy , Speed = 65

Waiting\_State: distance = 32 , I switched to the driving state with speed = 65

------------------------------------------------

------------------------------------------------

US\_Busy state : distance = 30

DC\_Motor is Busy , Speed = 0

Driving\_State: distance = 30 , I switched to the waiting state with speed = 0

------------------------------------------------

------------------------------------------------

US\_Busy state : distance = 30

DC\_Motor is Busy , Speed = 0

Waiting\_State: distance = 30 , I am still in the waiting state with speed = 0

------------------------------------------------

------------------------------------------------

US\_Busy state : distance = 35

DC\_Motor is Busy , Speed = 65

Waiting\_State: distance = 35 , I switched to the driving state with speed = 65

------------------------------------------------

------------------------------------------------

US\_Busy state : distance = 26

DC\_Motor is Busy , Speed = 0

Driving\_State: distance = 26 , I switched to the waiting state with speed = 0

------------------------------------------------

------------------------------------------------

US\_Busy state : distance = 25

DC\_Motor is Busy , Speed = 0

Waiting\_State: distance = 25 , I am still in the waiting state with speed = 0

**Thank you for your time.**

**Ayman Mohamed Elashry**

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