Crashing Avoidance robot with support of Motor multi variants. (Design)
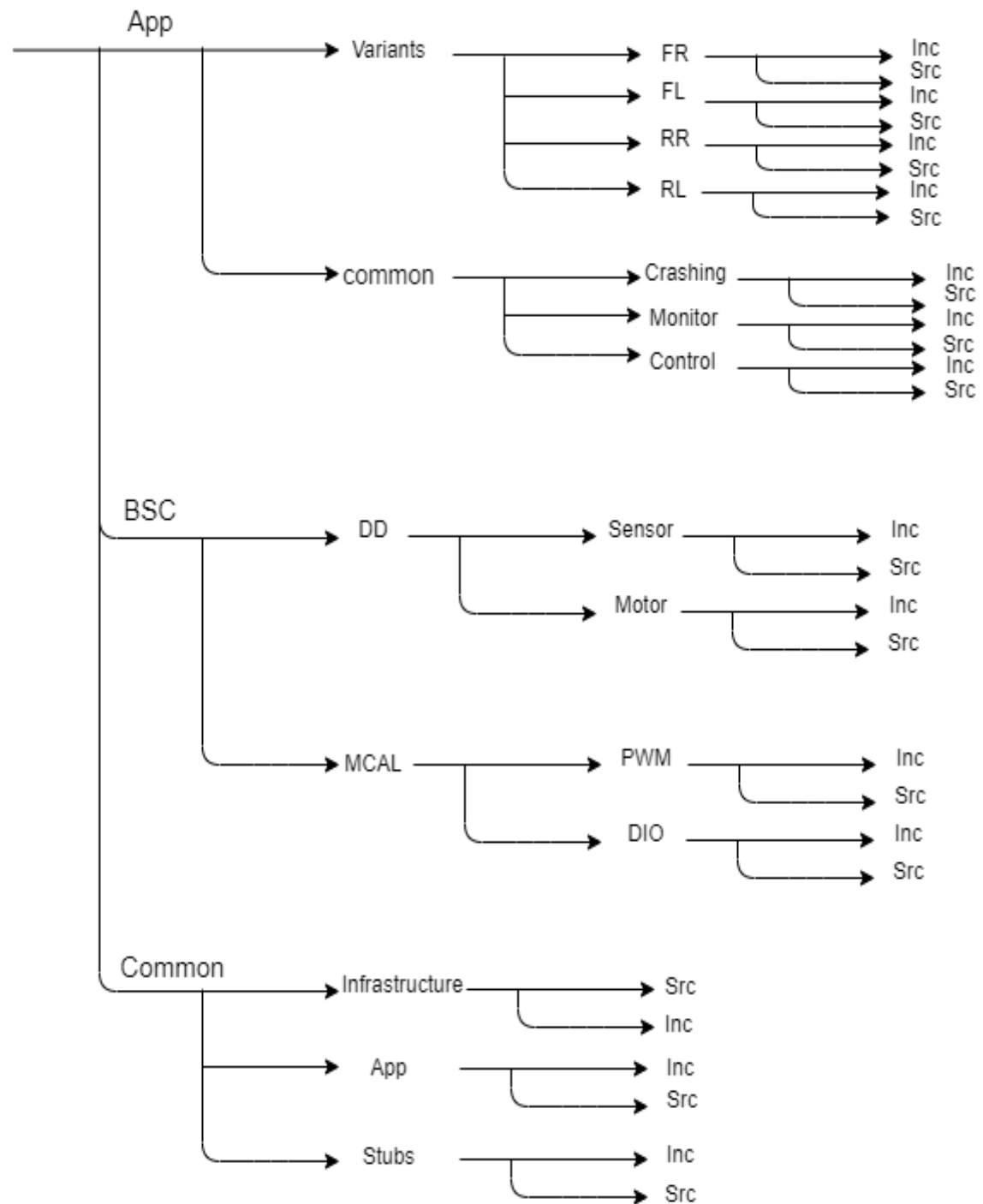
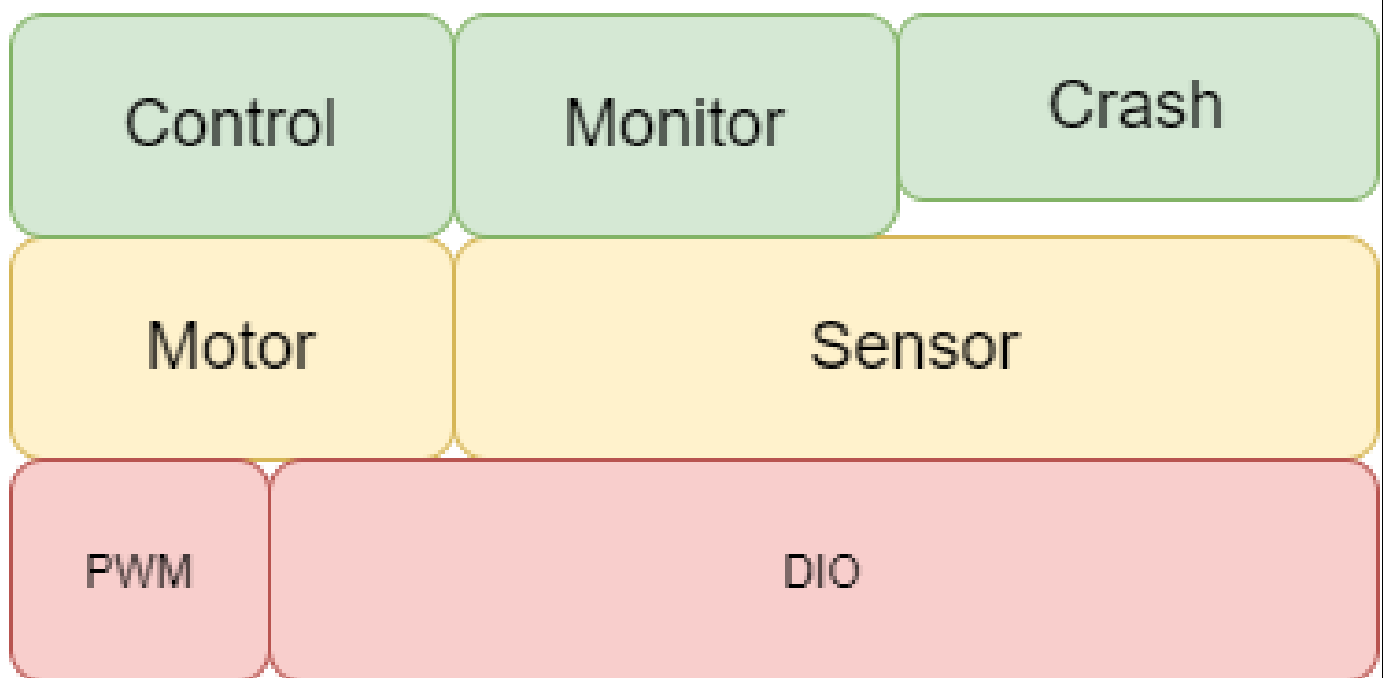By/ Ahmed Maged

1 – Folder Structure

2 – Static Design

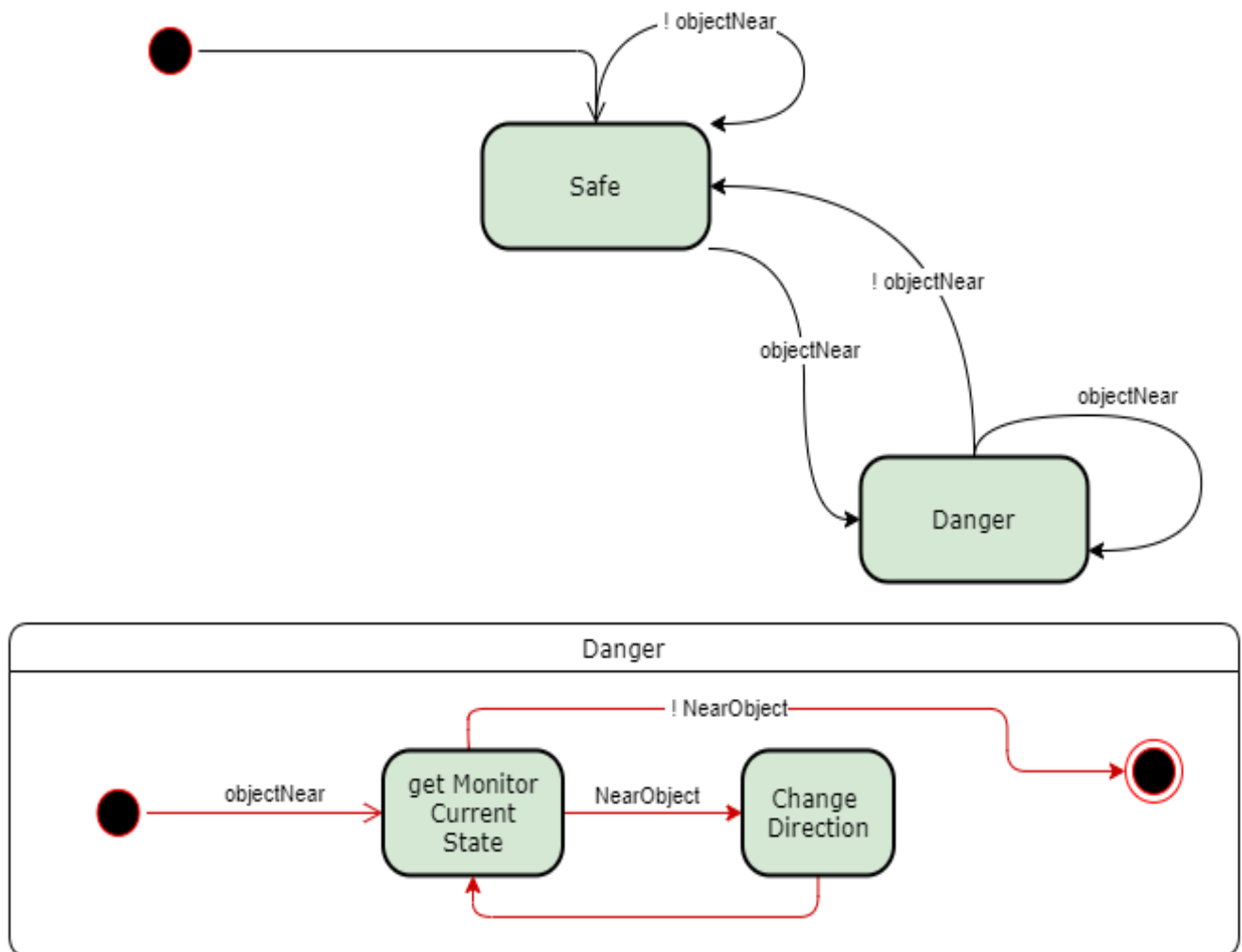Layered Architecture.

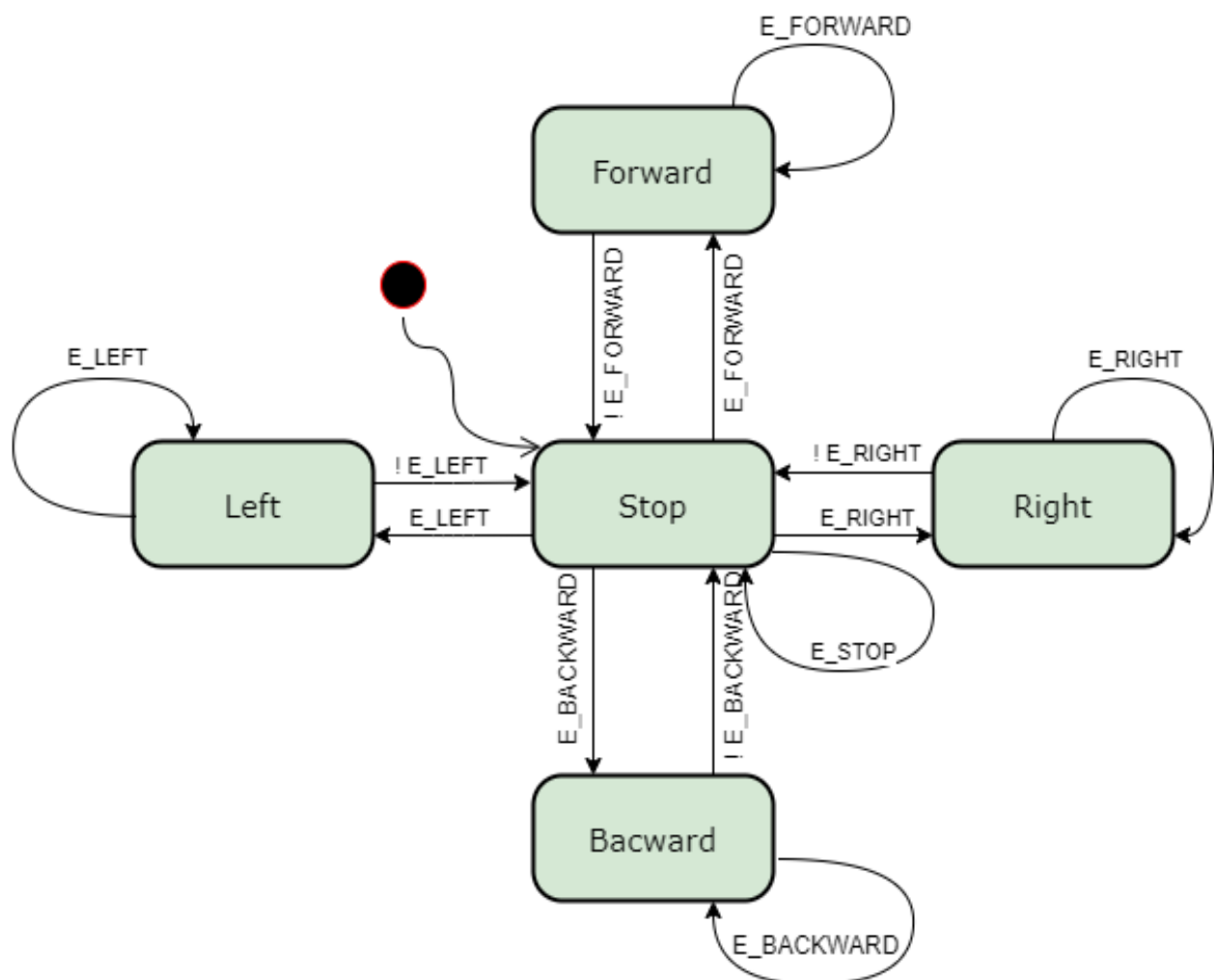# 3 – Dynamic Design

A – Crashing module State machine

B - Control module State machine

C – Monitor Stack State machines

1: Sensor module:
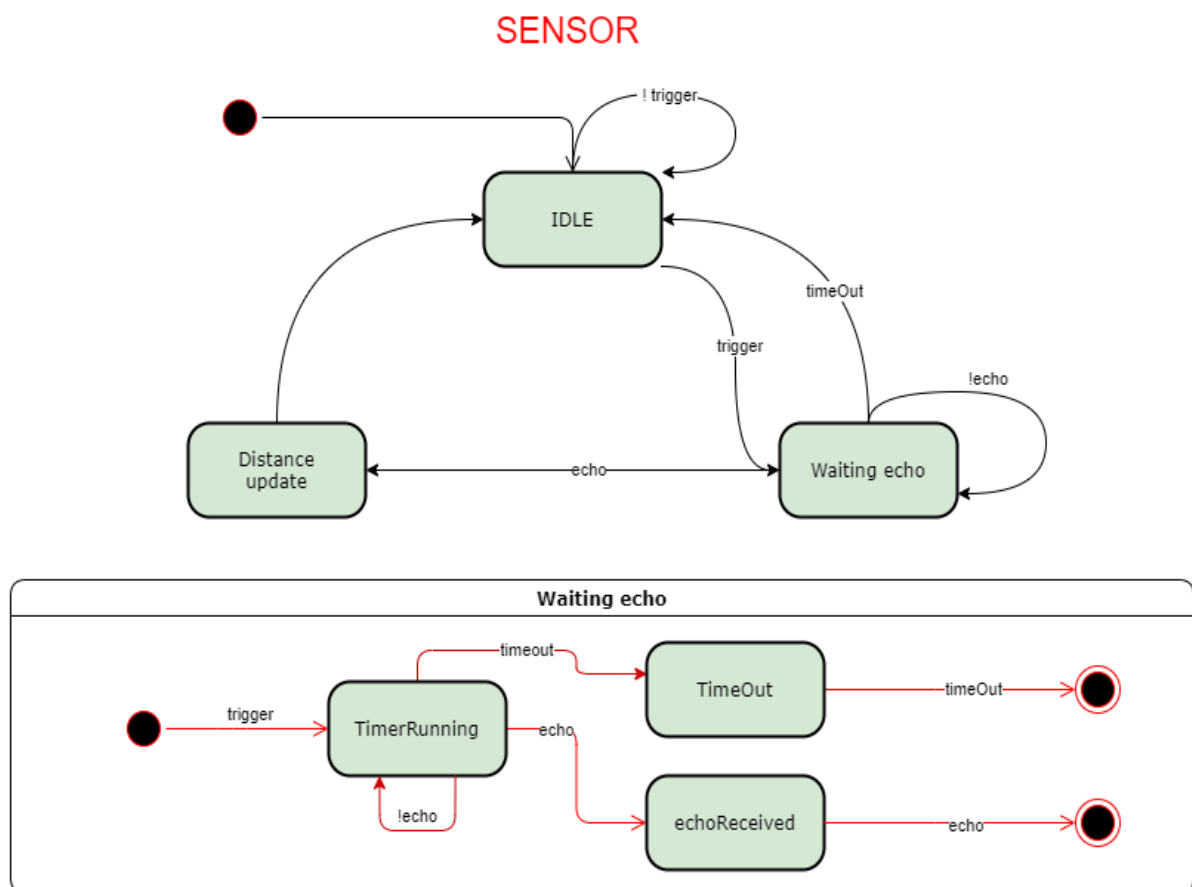
2: Monitor state machine

Monitor

Distance < LOWER_LIMIT

NoObject

Distance > L_L

Distance < L_L

L_L: Lower_Limit
H_L: Higher_Limit

L_L < Distance > H_L

FarObject exist

Distance > H_L

Distance < H_L

NearObject exist

Distance > H_L

NoObject | FarObject exist | NearObject exist

TriggerSend

WaitingRespose

Distance

Check with Parameters

TimeOut

main

Monitor

Crash

Control

Sensor

Motor

BSW

Monitor_MainFunc

Crash_MainFunc

Control_MainFunc

update State

Monitor_GetState

update Control Events

dispatch

Sen_eGetDistance(pDistance)

E_OK (distance ready)

Text

Motor_GoRight or
Motor_GoLeft or
Motor_GoBack

Motor_GoForward

iObjectNear

ObjectNear