Project 3

Dynamic Design

Egypt Future Work Digital Scholarship (FWD)

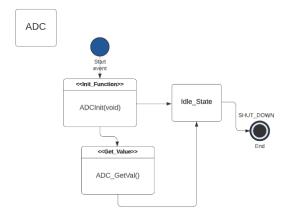
Name: Menna Tallah Atef Abdel-Aal

Email: menna.atef457@gmail.com

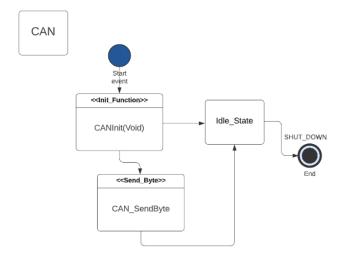
Connect Sessions: Monday 8:00-10:00 PM

ECU_1 Components

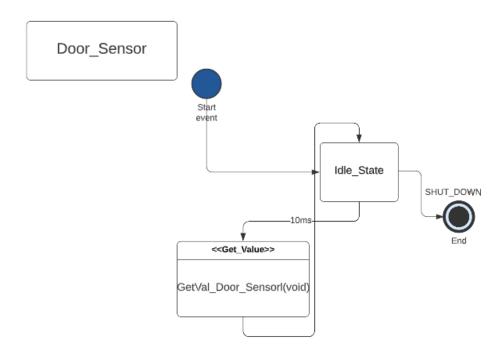
Menna Atef | February 6, 2023



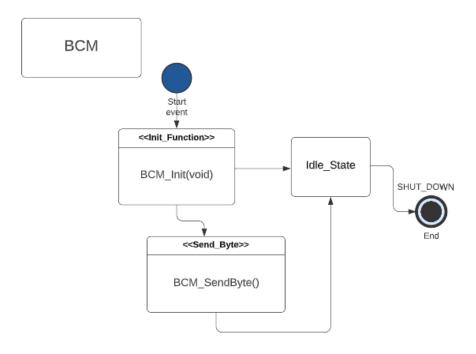
ECU_1 Components



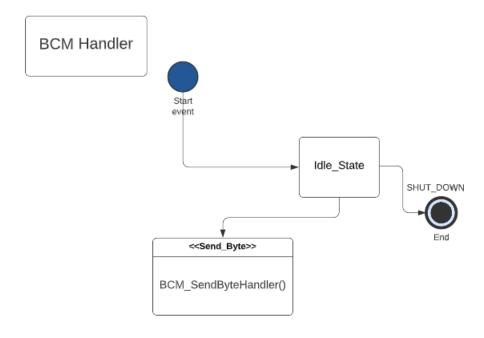
ECU_1 Components



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ECU_1 Components

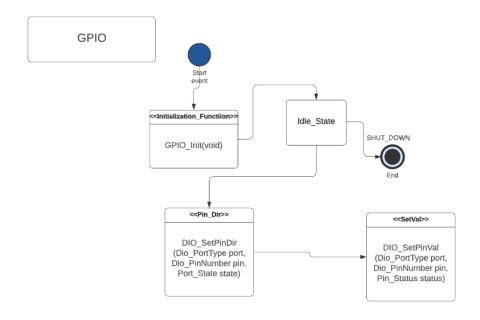


ECU_1 Components Menna Atef | February 6, 2023 **GPIO** <<Init_Function>> Idle_State GPIOInit(void) SHUT_DOWN <<Pin_Dir>> GPIO_SetPinDir (Dio_PortType port, Dio_PinNumber pin, Port_State state) <<Pin_Value>> DIO_ReadPinVal (Dio_PortType port, Dio_PinNumber pin)

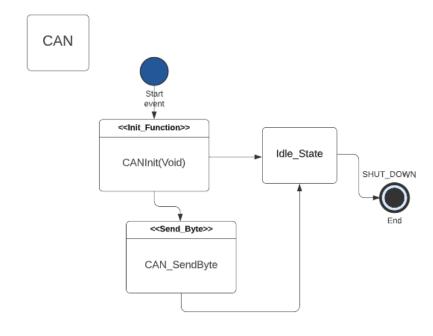
ECU_1 Components Menna Atef | February 6, 2023 Speed_Sensor Idle_State SHUT_DOWN <<Get_Value>> GetVal_SpeedSensor(void)

ECU_2 Components

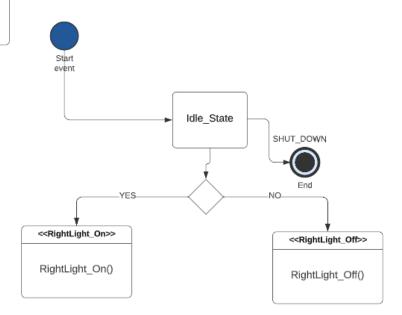
Menna Atef | February 7, 202



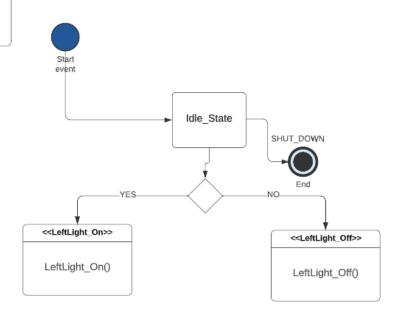
ECU_2 Components



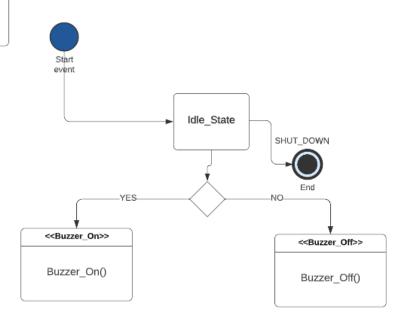




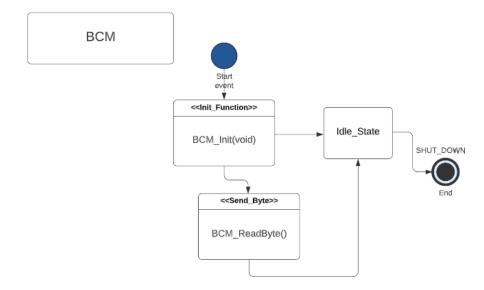








ECU_2 Components

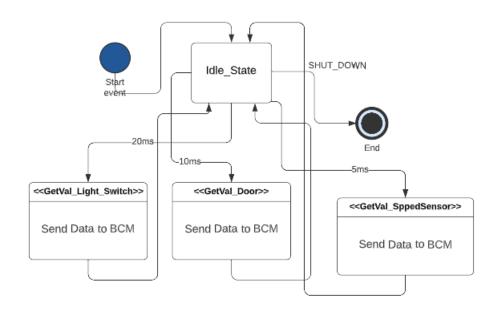


ECU Operation

ECU_1 Operation

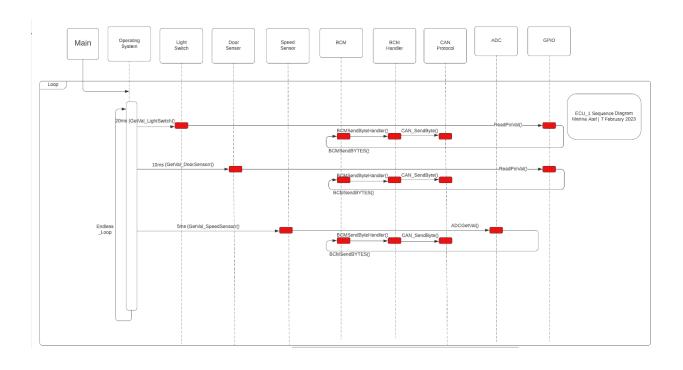
Menna Atef | February 7, 2023

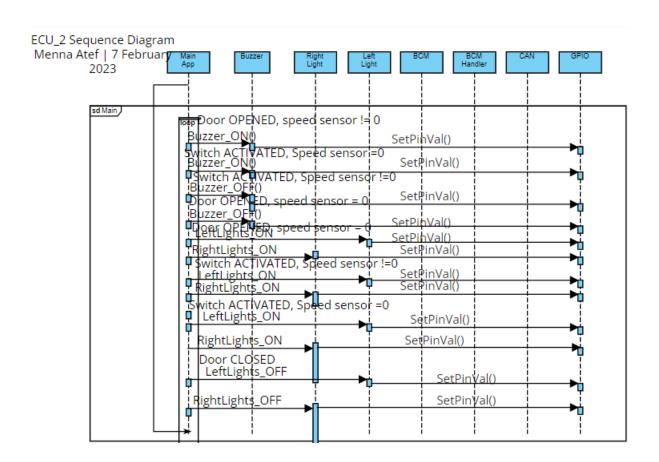
ECU_1



ECU_2 Operation Wenna Ale! | February 7, 2023 ECU_2 SHUT_DOWN Idle_State _10ms <<GetVal_Door>> <<GetVal_Light_Switch>> <<GetVal_SppedSensor>> Send Data to BCM Send Data to BCM Send Data to BCM Buzzer Off <S5_DoorClosed>> After 3seconds Lights will be turned off <<S2_Switch Activated& Speed = 0>> <<S3_DoorOpen&Spped =0≫ Buzzer ON Buzzer Off <<S4_DoorOpened&Speed!=0>> Buzzer is On

ECU Sequence Diagram





CPU Load

Assume periodicity = Deadline

Assume execution time = 2 ms

CPU Load = 65%

