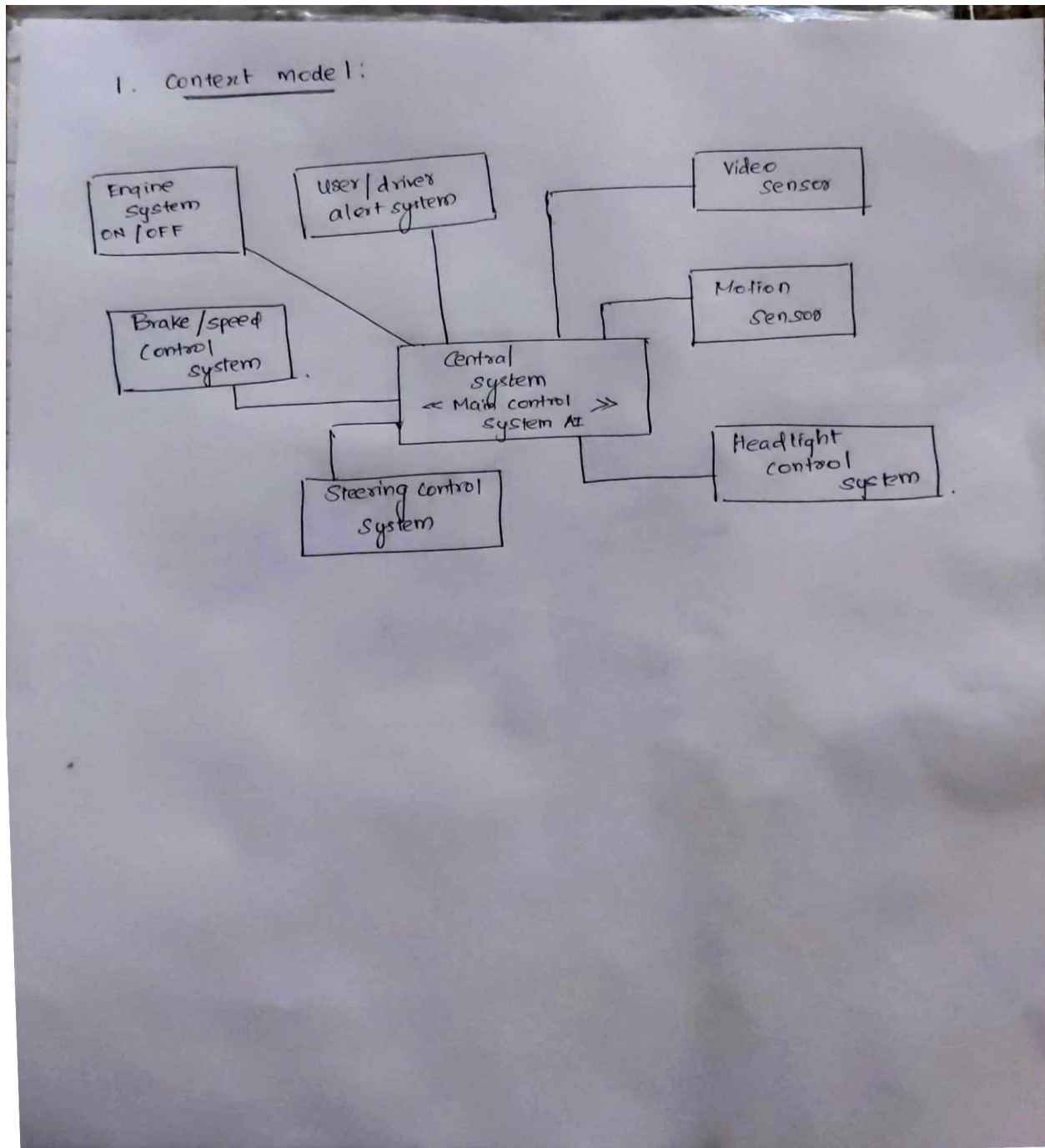


Software Engineering Assignment 2

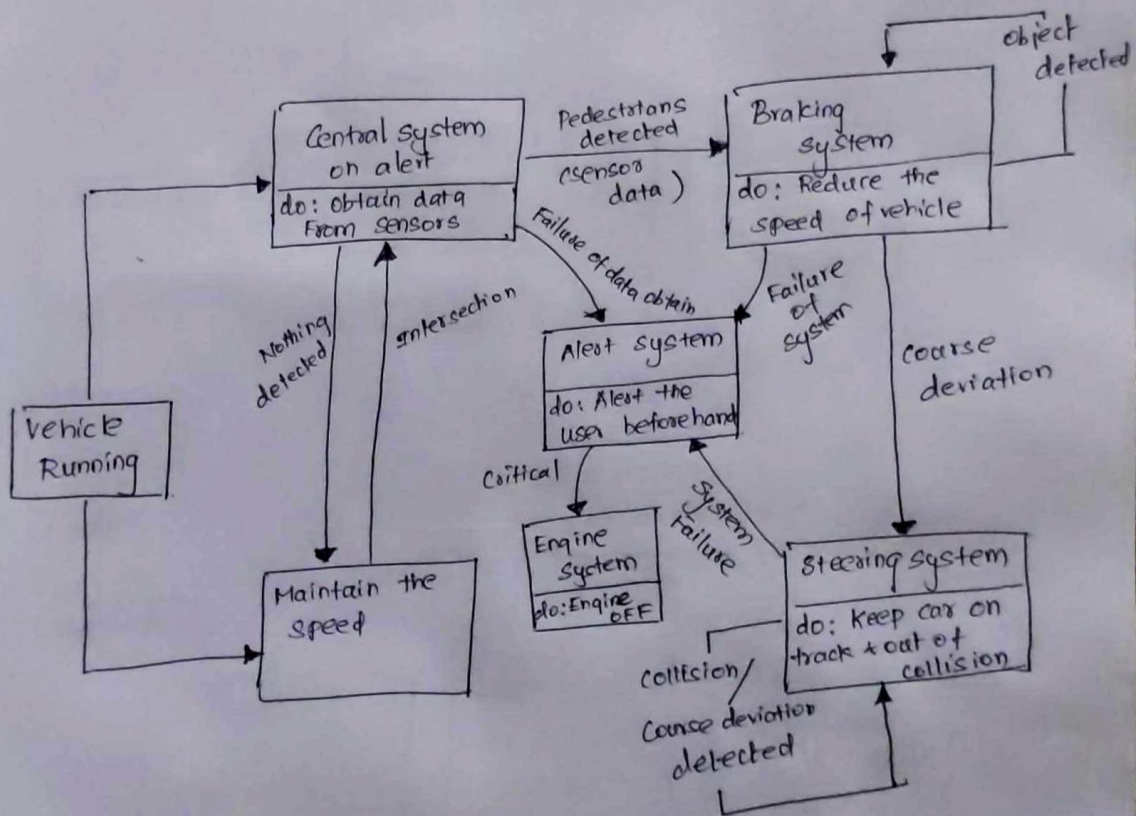
1. Context model



Software Engineering Assignment 2

2. State diagram

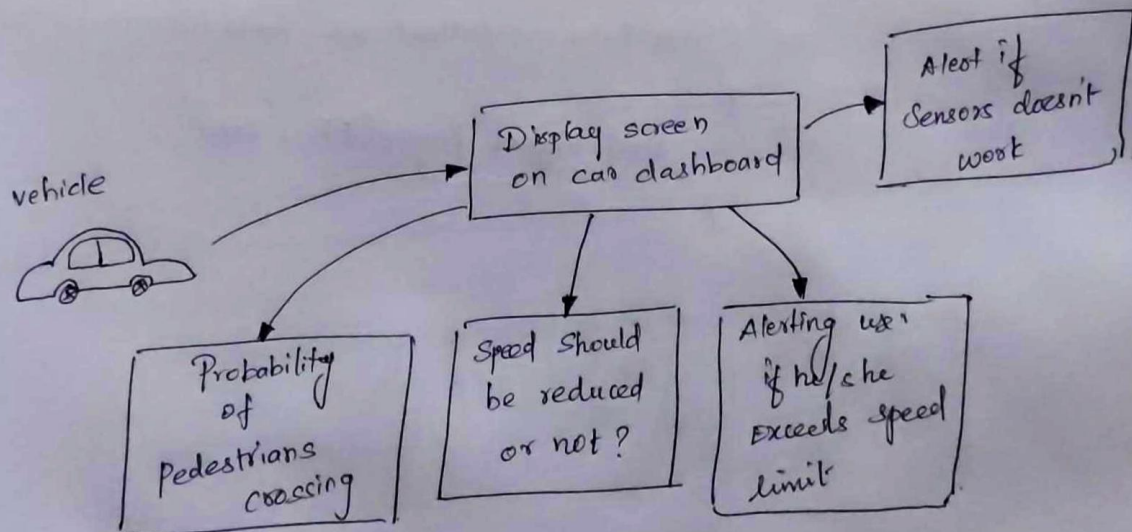
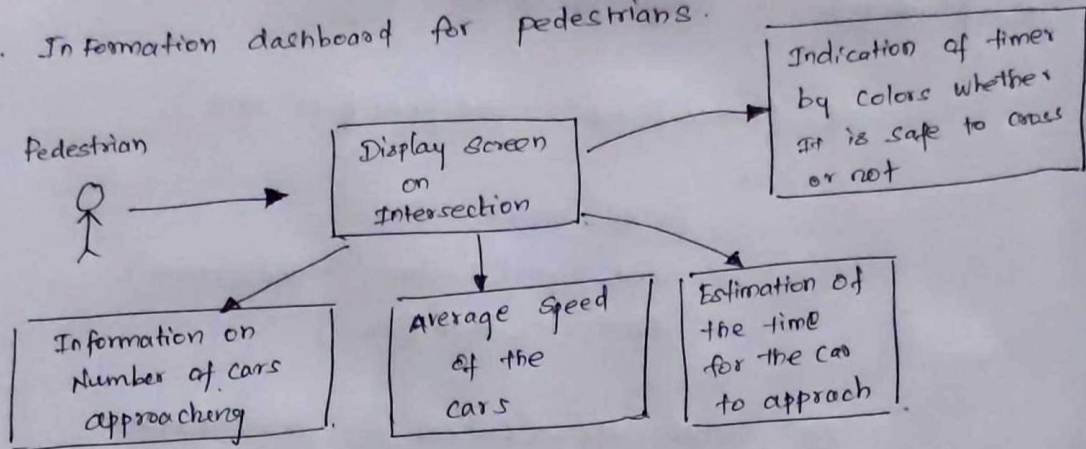
2. State Transition Diagram.



Software Engineering Assignment 2

3. Information dashboard

3. Information dashboard for pedestrians.



Software Engineering Assignment 2

4. Pseudo code

4. Pseudocode for failure of sensor.

```
if (SensorData == undefined || or Null )
{
    Failed_sensor = True;
    Send_Signal_Failure (Failed_sensor)
    Alert_user_high (True)
}

if (SensorData == critical & FailedSensor ==
    if (SensorData == "critical" & FailedSensor == True)
    {
        Send_signal_EngineOFF = True ;
    }
```

Software Engineering

Assignment 2

5. Test plan how the system is efficient and safe

System is efficient:

Test case for Efficiency:

Input (Initial): Data from sensors

Execution:

1. Analyze the data from sensors
2. Categorize them based on criticality.
3. Give the user the analyzed data and inform necessary steps to be taken to avoid collision.

Output: User is clear about the condition of the car

Input: Data from road side cameras and speed monitors

Execution:

1. Obtain the data from the cameras and monitors
2. Calculate the necessary details (average speed, time for the car to reach intersection).
3. Display the detail in the information dashboard for the pedestrians

Output: Pedestrians understand the situation and decide whether to proceed/retreat from crossing.

Test case for Safety:

Input: Failed sensor or controller system

Execution:

1. Find out which sensor failed to work or which controller (brake or steering).
2. Check whether the vehicle is in critical condition
3. Main system instructs to slow down and turn off the engine if necessary

Output: Vehicle should be kept safe despite the critical collision probability and reduce the damage by maximum amount.