

# VEHICLE DETECTION AND COUNTING USING OPENCV(Open Source Computer Vision Library)

MINI PROJECT

Department of MCA, MES College Of Engineering , Kuttippuram  
27th OCTOBER 2023

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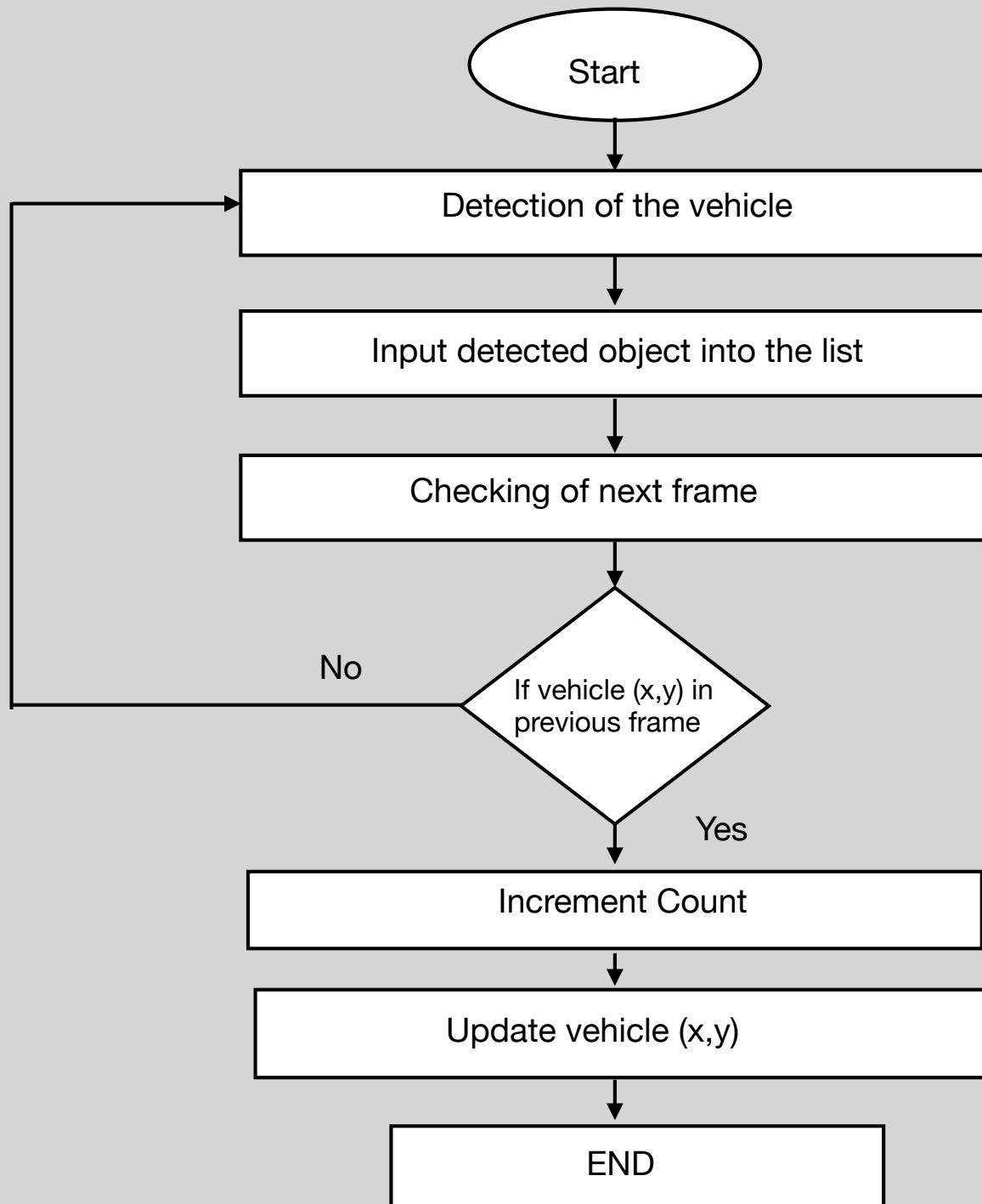
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## OVERVIEW

- **vehicle counting and detection and counting system.** It will be enough to work for **both the images or the video**, for the same,
- using OpenCV for doing all the image processing operations and for classification the **Vehicles haar cascade classifier for detecting and counting Vehicles.**
- address a video-based techniques for vehicle recognition and counting based on OpenCV technologies.
- The proposed technique uses the background subtraction method to discover forefront objects in video sequel. Several OpenCV techniques, including of an thresholding, the adaptive morphology operations, and hole filling are later applied in the series of detecting moving vehicles more accurately. At last, vehicle counting is done by utilizing virtual identification zones.

# FLOWCHART



## **Pseudo code:**

Step1: foreground extraction  
Step2: Region of Interest  
Step3: detection of a vehicle  
Step4: counting of a vehicle

## USER STORY

User Story ID	AS a <type of user>	I want to	So that I can
1	USER	openCV(Open Source Computer Vision Library)	Import openCV and do looping of a particular video
2	USER	Vehicle Detection	Detect the vehicle from the video
3	USER	Vehicle Counting	Count the number of vehicles using open

## PRODUCT BACKLOG

ID	NAME	SIZE(Hours)	SPRINT	STATUS	PRIORITY
1	openCV	4	1	Partially Completed	High
2					
3	Coding	4	2	To do	High
		23			
4	Testing Data	4	3	To do	Medium
5	Output Generation	6		To do	High



## **PROJECT PLAN**

<b>ID</b>	<b>TASK NAME</b>	<b>START DATE</b>	<b>END DATE</b>	<b>PROJECT HOURS</b>	<b>STATUS</b>
1	Sprint 1	15/09/2023	12/10/2023	13	Partially completed
2	Sprint 2	13/10/2023	03/11/2023	14	To do
3	Sprint 3	08/11/2023	30/11/2023	14	To do

## SPRINT:1

### SPRINT PLAN

Backlog Item	Status And Completion Date	Original Estimate In hours	Day 1 15/09	Day 2 20/09	Day 3 21/09	Day 4 28/09	Day 5 29/09	Day 6 04/10	Day 7 05/10	Day 8 06/10	Day 9 11/10	Day 10 12/10
openCV	15/09/2023	2	2	0	0	0	0	0	0	0	0	0
Coding	06/10/2023	6	0	0	0	0	2	1	1	2	0	0
Testing & Validation	12/10/2023	2	0	0	0	0	0	0	0	0	1	1
Total		13	2	1	1	1	2	1	1	2	1	1

## SPRINT:2

### SPRINT PLAN

Backlog Item	Status And Completion Date	Original Estimate In hours	Day 1 15/09	Day 2 20/09	Day 3 21/09	Day 4 28/09	Day 5 29/09	Day 6 04/10	Day 7 05/10	Day 8 06/10	Day 9 11/10	Day 10 12/10
openCV	13/09/2023	2	2	0	0	0	0	0	0	0	0	0
Coding	01/11/2023	8	0	0	1	2	1	1	2	1	0	0
Testing & Validation	03/11/2023	3	0	0	0	0	0	0	0	0	1	2
Total		14	2	1	1	2	1	1	2	1	1	2

## SPRINT:3

### SPRINT PLAN

Backlog Item	Status And Completion Date	Original Estimate In hours	Day 1 15/09	Day 2 20/09	Day 3 21/09	Day 4 28/09	Day 5 29/09	Day 6 04/10	Day 7 05/10	Day 8 06/10	Day 9 11/10	Day 10 12/10	Day 11 30/11
Coding	01/11/2023	9	1	1	2	1	1	2	1	0	0	0	0
Testing & Validation	03/11/2023	5	0	0	0	0	0	0	0	0	1	1	1
Total		14	1	1	2	1	1	2	1	1	2	1	1

# **DEVELOPING ENVIRONMENT**

## **SOFTWARE SPECIFICATION**

- Operating System: Windows, Linux, MacOS
- Language: Python
- Library: openCV(Open Source Computer Vision)
- Browser: Mozilla Firefox, Microsoft Internet Explorer, Google Chrome, Opera browser, Apple Safari

## **HARDWARE SPECIFICATION**

- Processor: Intel Core i5 or Core i7
- Storage: 128, 256, or 512 GB flash storage
- RAM: 8GB

**THANK YOU**