DENSITY-BASED TRAFFIC CONTROL SYSTEM

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CLASS:S7LA

Project Guide :

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Assistant Professor

ECE Department

INTRODUCTION

- Focuses on switching the traffic light based on the vehicle density.
- Uses the image processing technique to monitor the vehicles.
- Implementing separate traffic control systems for day and night.
- Developing traffic control mechanism on rainy days

PROPOSED TOOLS FOR THE PROJECT

SOFTWARE TOOLS

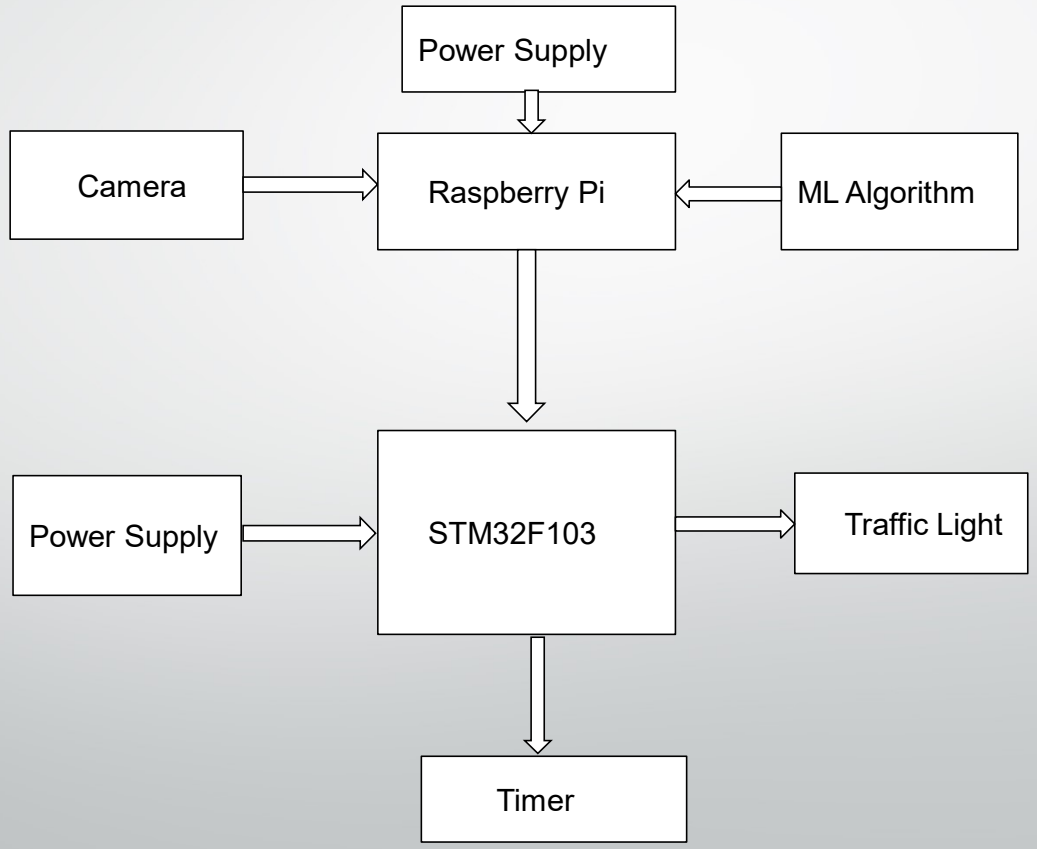
- **PYTHON**
- **OPENCV**
- **KERAS**
- **TENSORFLOW**
- **ALTIUM**
- **STM32 CUBE IDE**
- **PROTEUS**

PROPOSED TOOLS FOR THE PROJECT

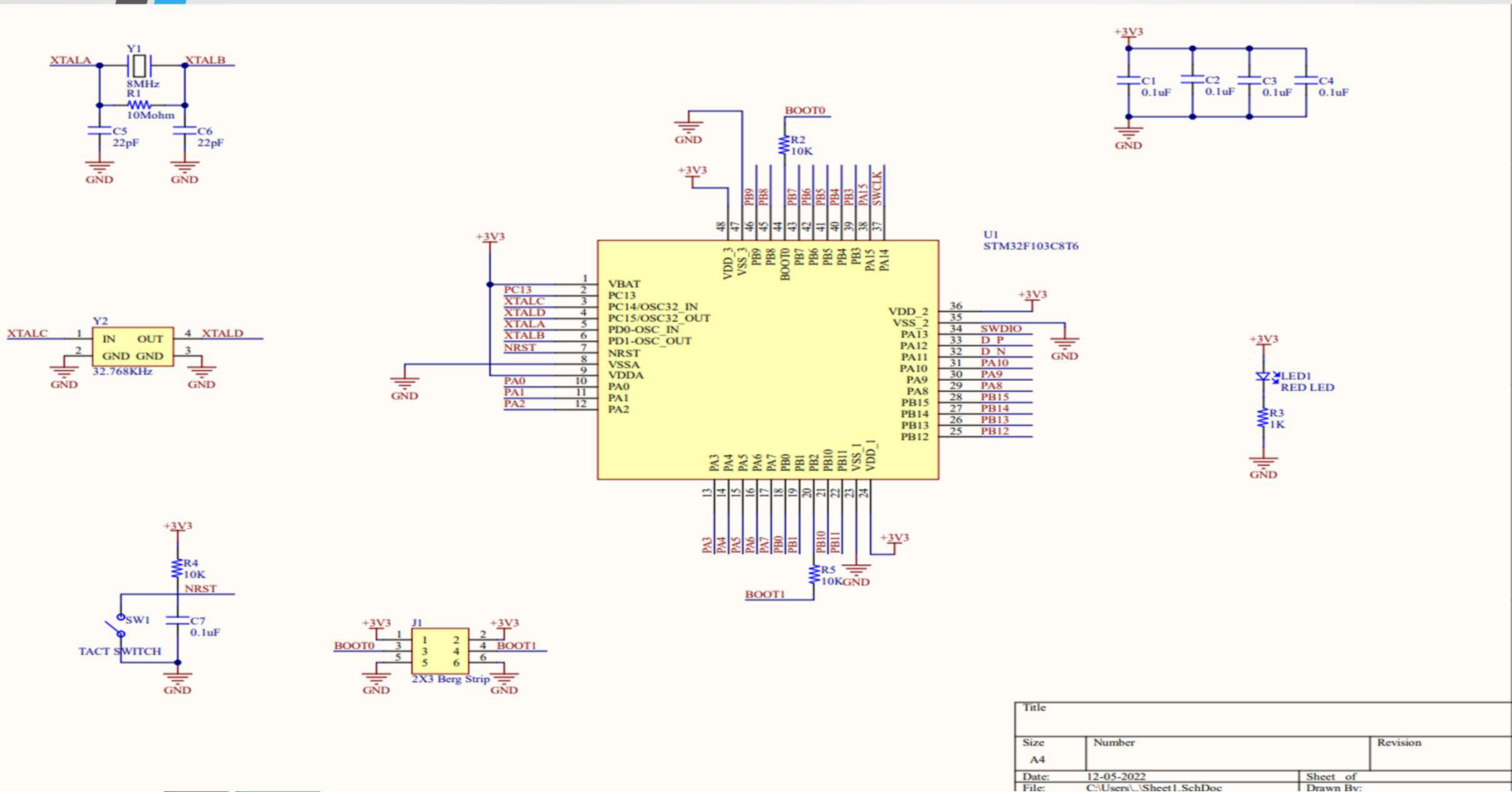
HARDWARE COMPONENTS

- **RASPBERRY PI**
- **LDR SENSOR**
- **SEVEN SEGMENT**
- **MICRO CONTROLLER (STM32F301)**
- **RAIN SENSOR**
- **CAMERA MODULE**

BLOCK DIAGRAM



SCHEMATIC DIAGRAM



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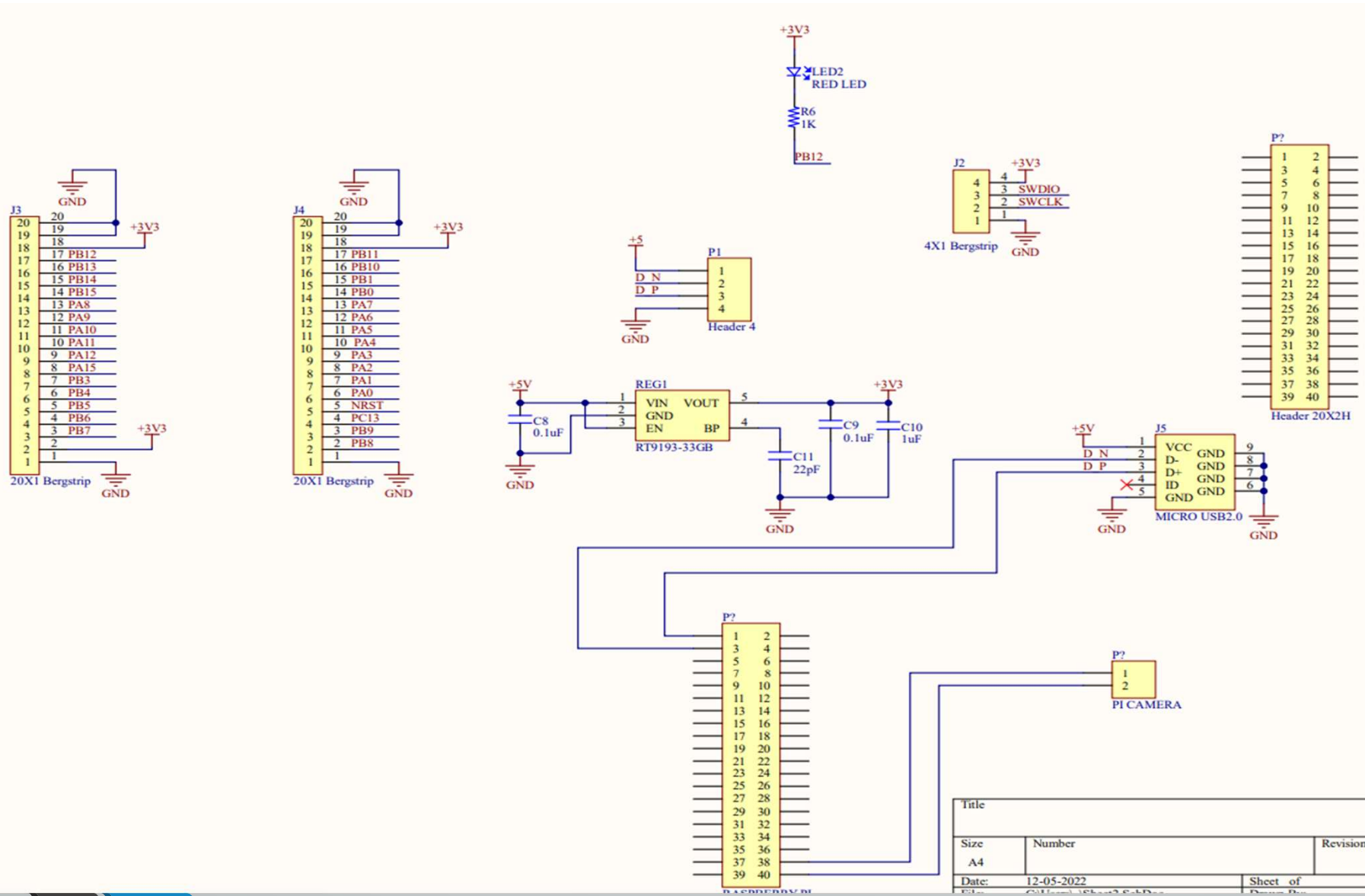
+3V3
LED2
RED LED
R6
1K
PB12
J3
20X1 Bergstrip
GND
+3V3
17 PB12
16 PB13
15 PB14
14 PB15
13 PA8
12 PA9
11 PA10
10 PA11
9 PA12
8 PA15
7 PB3
6 PB4
5 PB5
4 PB6
3 PB7
J4
20X1 Bergstrip
17 PB11
16 PB10
15 PB1
14 PB0
13 PA7
12 PA6
11 PA5
10 PA4
9 PA3
8 PA2
7 PA1
6 PA0
5 NRST
4 PC13
3 PB9
2 PB8
J2
4X1 Bergstrip
SWDIO
SWCLK
P1
Header 4
D_N
D_P
+5
P?
Header 20X2H
REG1
RT9193-33GB
VIN
VOUT
GND
EN
BP
C8
0.1uF
C9
0.1uF
C10
1uF
C11
22pF
J5
MICRO USB2.0
VCC
D-
D+
ID
GND
P?
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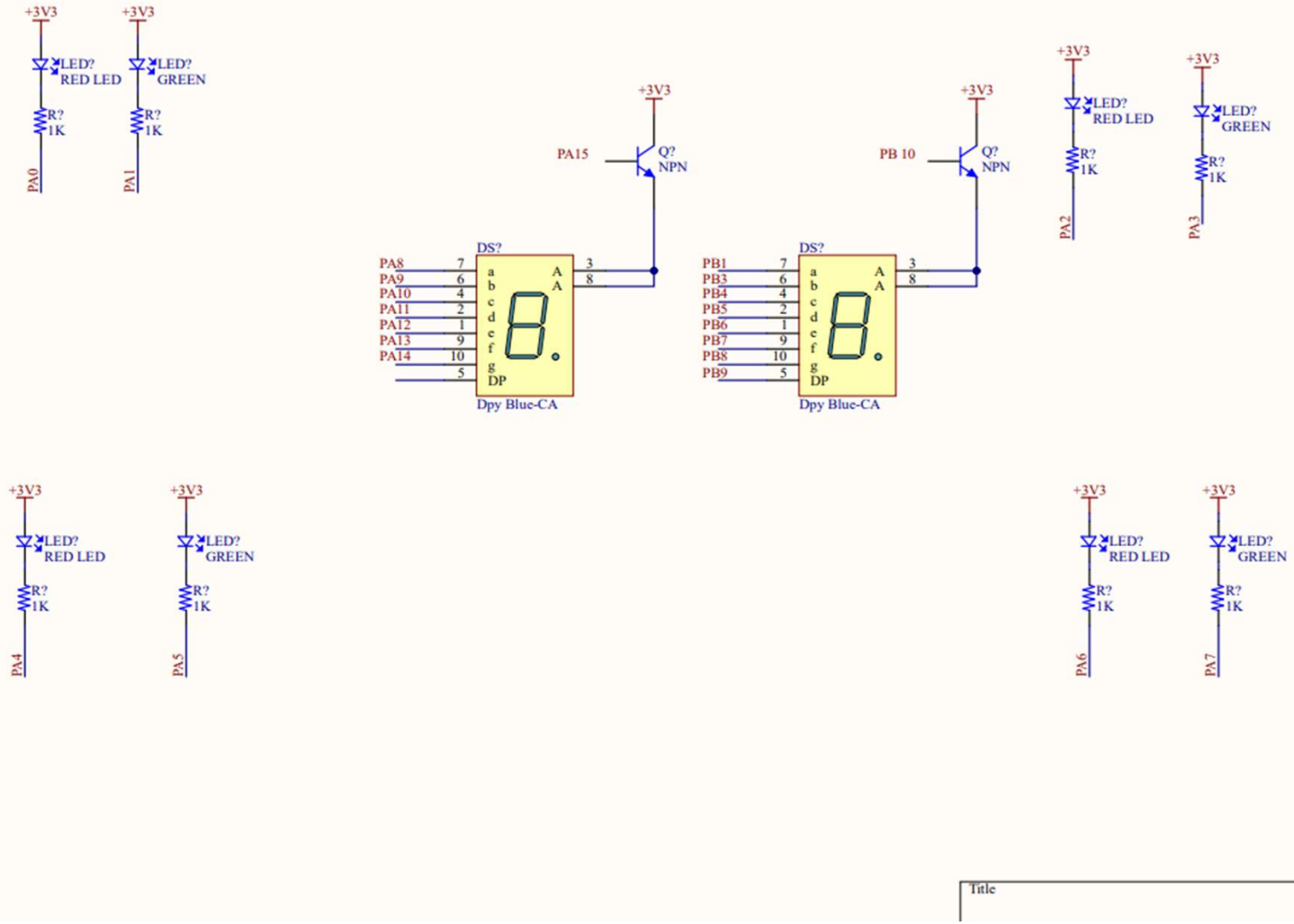
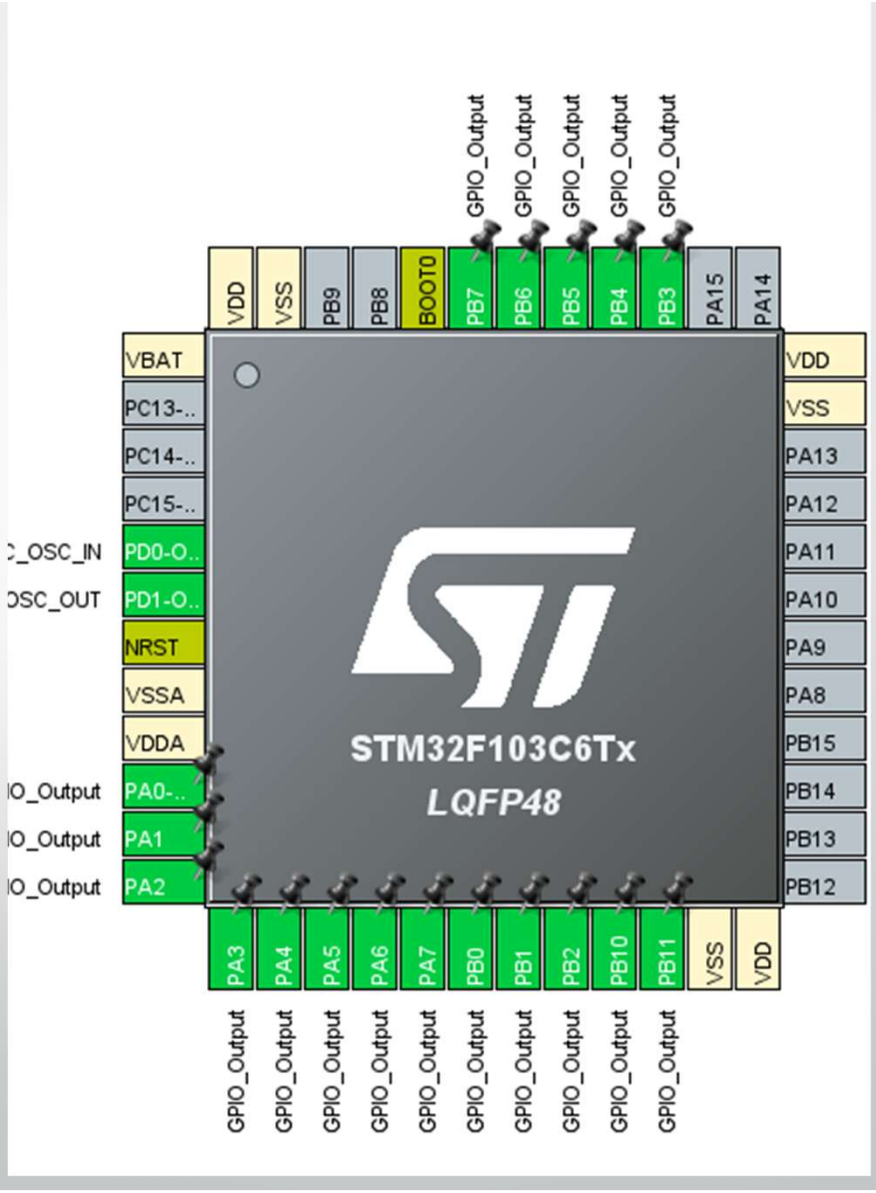
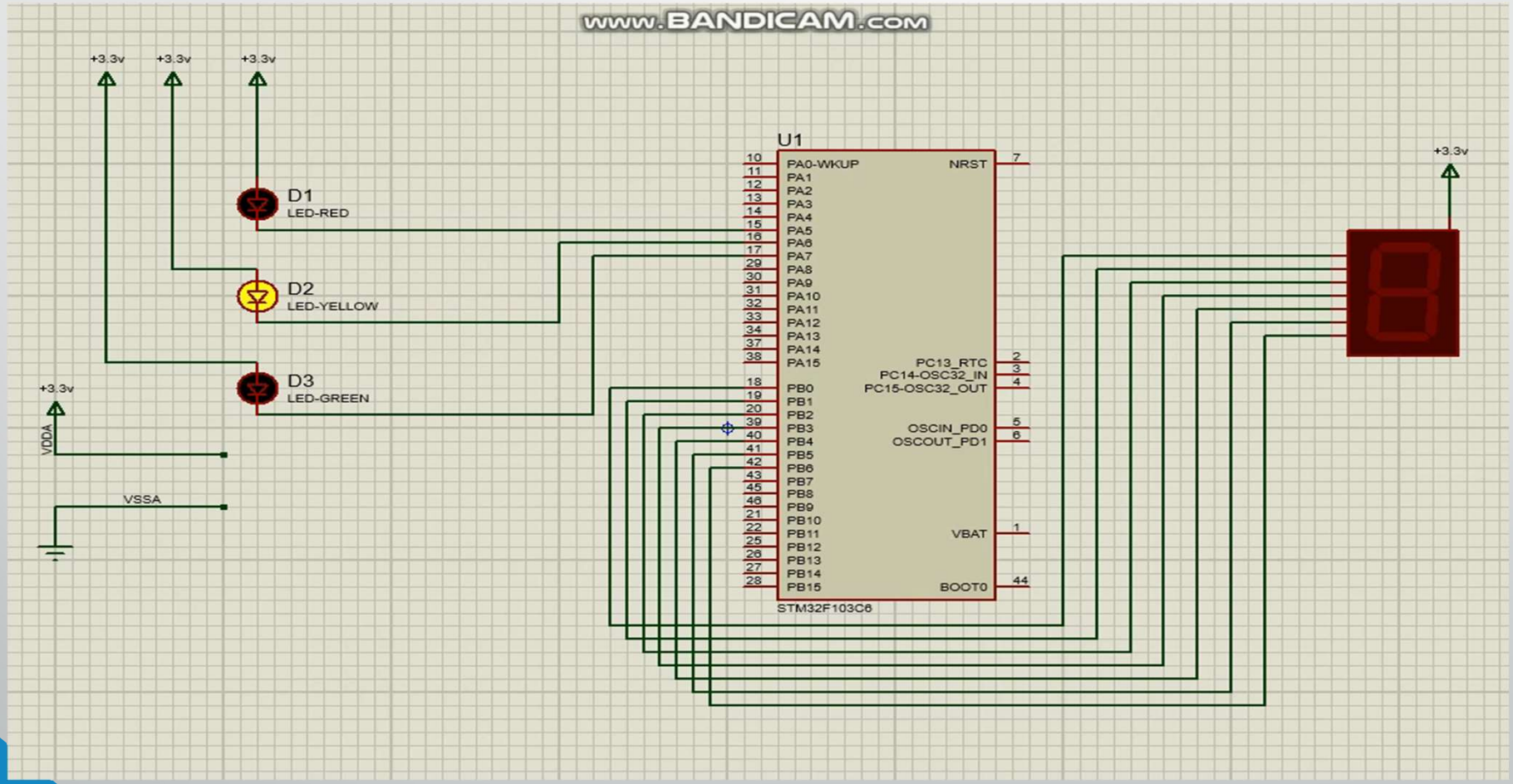
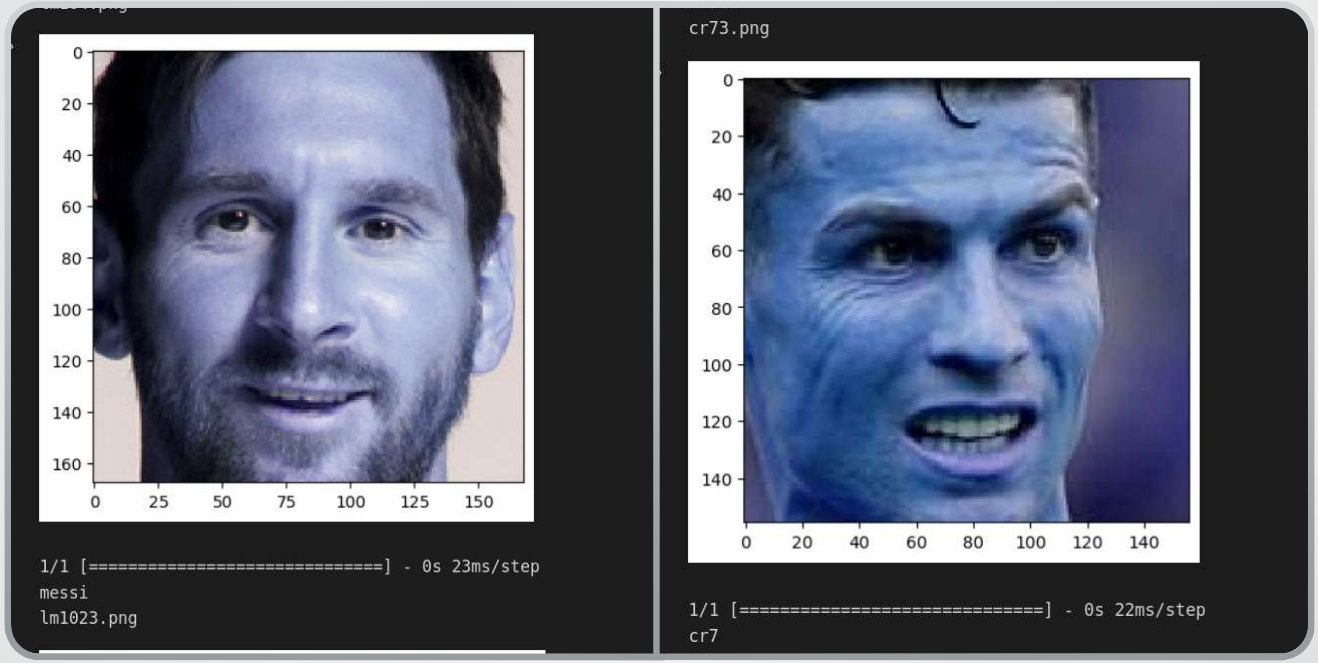

+3V3
LED?
RED LED
R?
1K
PA0
+3V3
LED?
GREEN
R?
1K
PA1
+3V3
PA15
Q?
NPN
DS?
PA8
PA9
PA10
PA11
PA12
PA13
PA14
a
b
c
d
e
f
g
DP
A
A
3
8
Dpy Blue-CA
+3V3
PB 10
Q?
NPN
DS?
PB1
PB3
PB4
PB5
PB6
PB7
PB8
PB9
Dpy Blue-CA
+3V3
LED?
RED LED
R?
1K
PA2
+3V3
LED?
GREEN
R?
1K
PA3
+3V3
LED?
RED LED
R?
1K
PA4
+3V3
LED?
GREEN
R?
1K
PA5
+3V3
LED?
RED LED
R?
1K
PA6
+3V3
LED?
GREEN
R?
1K
PA7
Title

STM32F103C6 PINOUT DIAGRAM

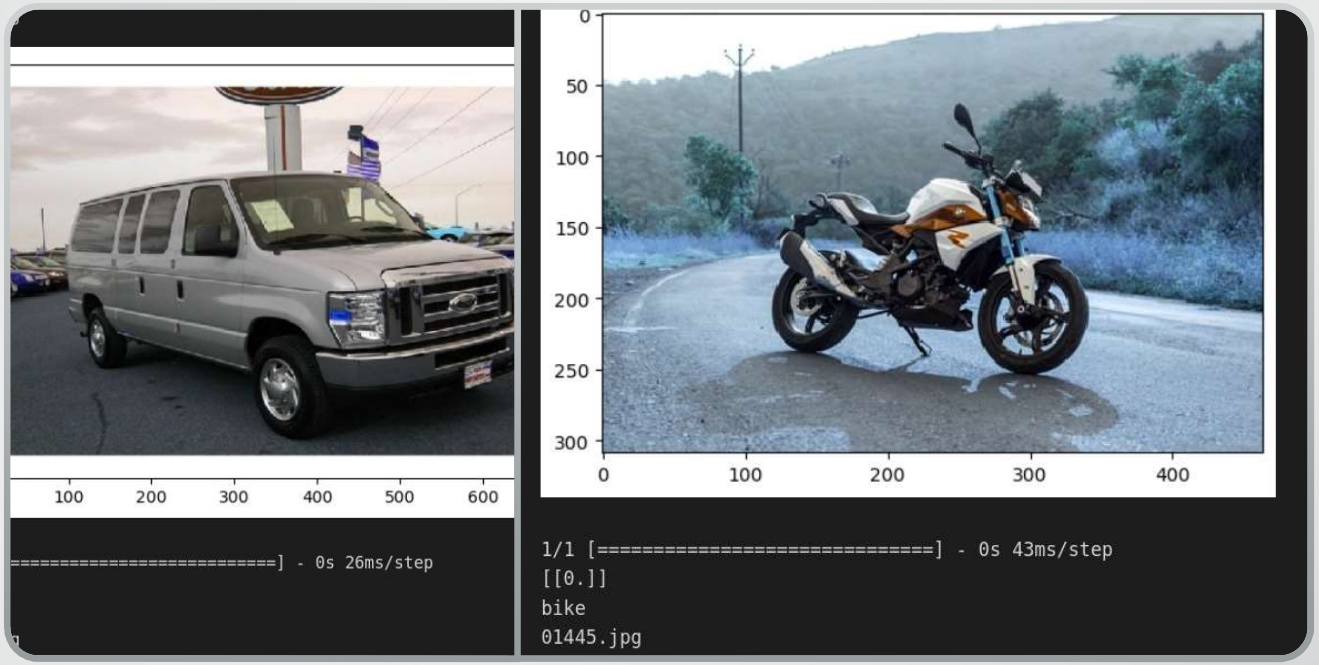


SIMULATION USING STM32F103



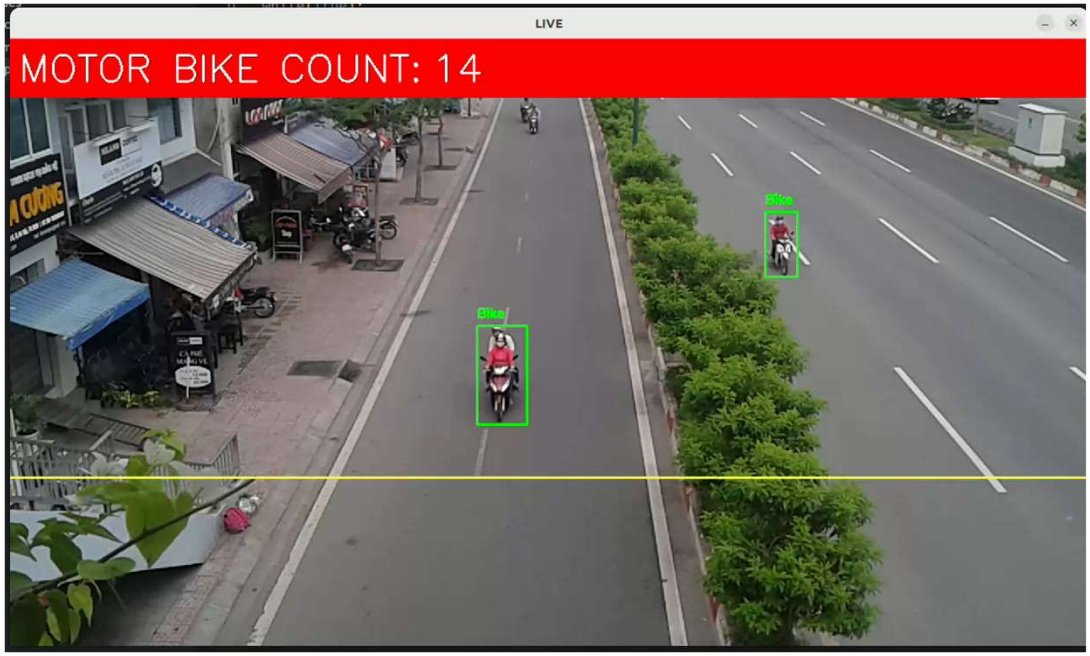


CR7 VS MESSI IMAGE CLASSIFICATION



CAR VS BIKE IMAGE CLASSIFICATION

VEHICLE DETECTION AND COUNT



THANK YOU