PORTFOLIO

KAMPANATH KAPPAGO

TEST PROGRAM

Vision Inspection Test Program (LCD panel product)

Test Program Porting From VB6 To Labview (Ultrasonic Liquid Sensor)

Test Program For Handheld Medical Device

Automated Optical Inspection For Trimble Product (Medical Module)

GAME DEVELOPMENT

Marble Ball Racing 2022 (PC, Steam)

Marble Ball Racing (PC, Steam)

Others Game

WEB APLLICATION

Web App For Restaurant

Web App For Support Test System (Show And Edit Test Parameter)

Web App For Online Shopping

Web App For Online Food

EMBEDDED SYSTEM

Survey Robot (Senior Project)

Simple Web Interfacing To Embedded Device

TEST PROGRAM

Test software is used in electronic factory, to test electrical function of finish assemble of electronic PCBA board or ICs. This software will provide GUI for user, can communicate with test equipment like oscilloscope, digital multi meter, send log of test result to local drive and database, some need to have image processing function to inspect product appearance.

Software Tools And Programming Language

Labview
NI Vision Development
NI Vision Builder
Visual Basic
C#
AutoIt
Arduino, C/C++
TestStand

Example of My Project

1.Vision Inspection Test Program (LCD panel product)
2.Test Program Porting From VB6 To Labview (Ultrasonic Liquid Sensor)
3.Test Program For Handheld Medical Device
4. Automated Optical Inspection For Trimble Product (Medical Module)

Vision Inspection Test Program (LCD panel product)

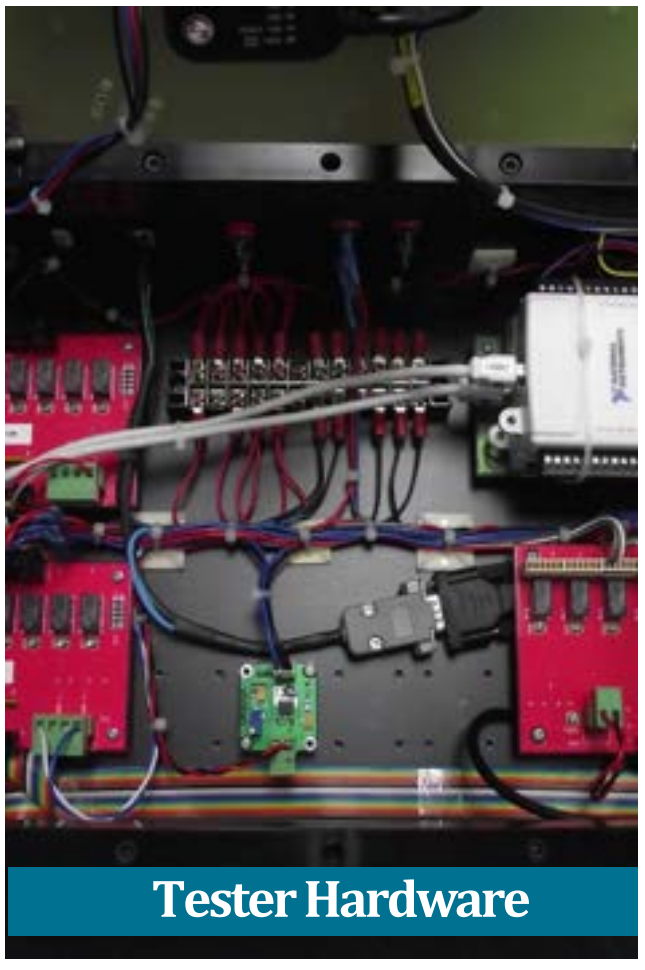
Software Tools and Programming Language ：
Labview, NI vision development, NI Vision Builder

Communicate with UUT via I2C (USB-8451)to drive LCD to show specific pattern and use NI vision development module to capture image from camera and verify it with image processing function, read QR code with image barcode sensor, read voltage and current with DMM, connect database server , save defect unit image to local drive.

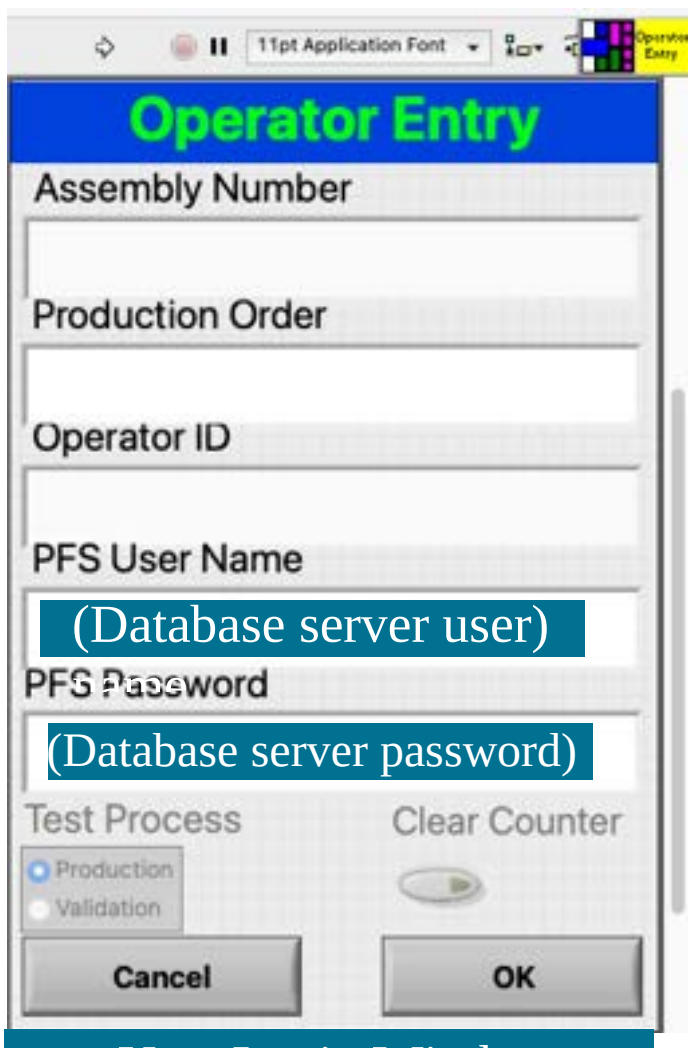
Tester Station

Use image processing function to verify if the letters number and signs on LCD is showing correctly

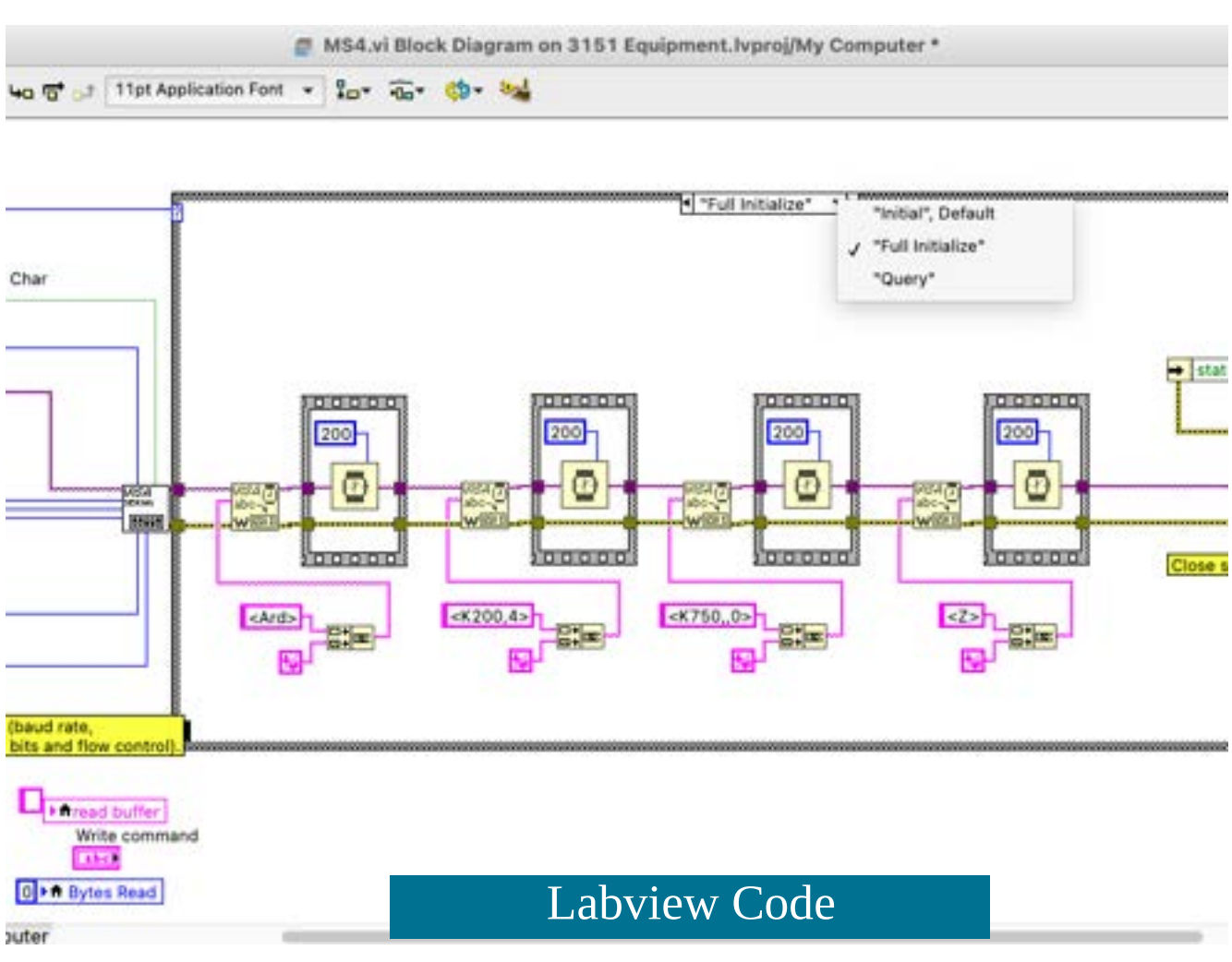
Test Program UI



Tester Hardware



User Login Window

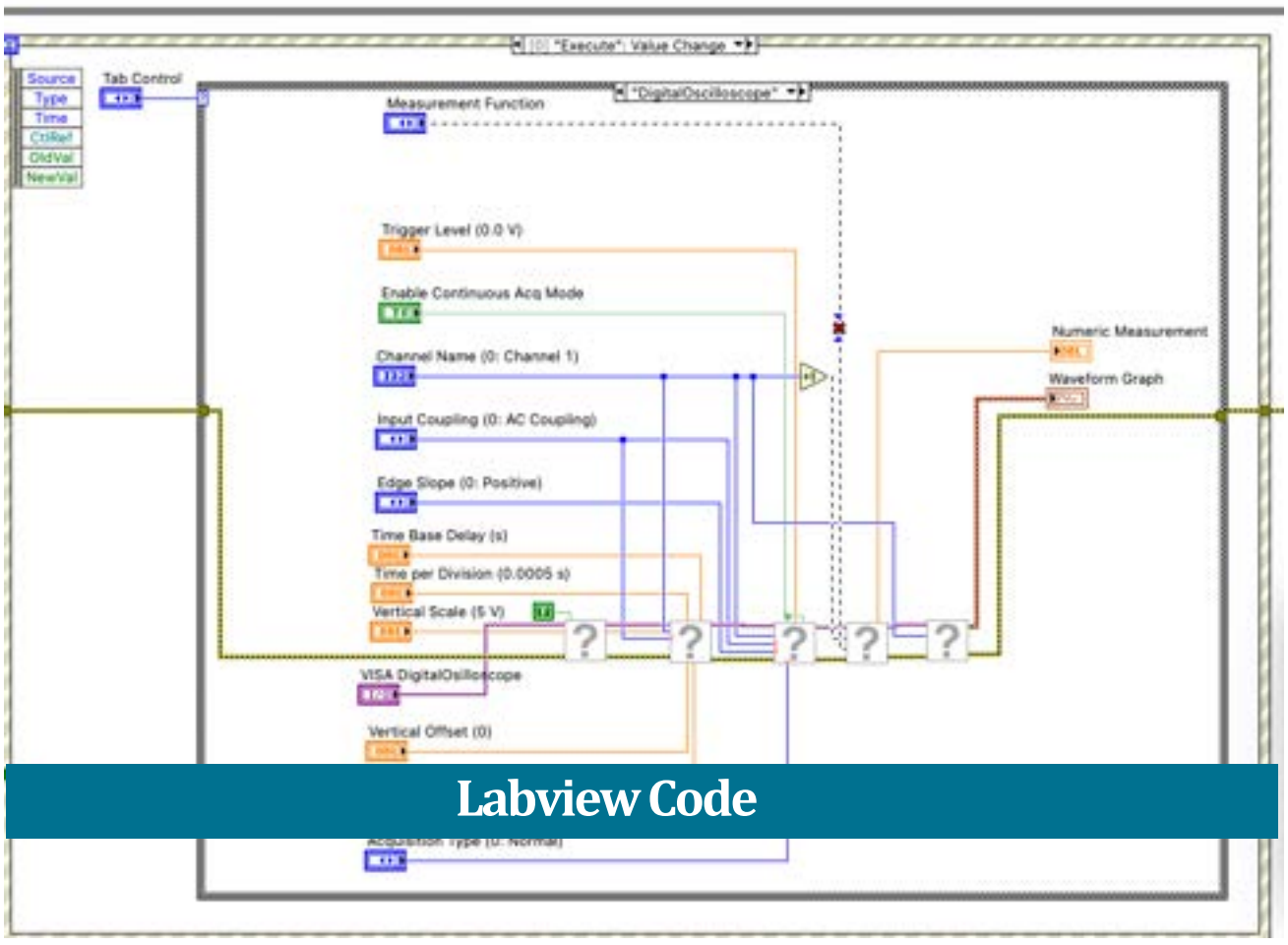


Labview Code

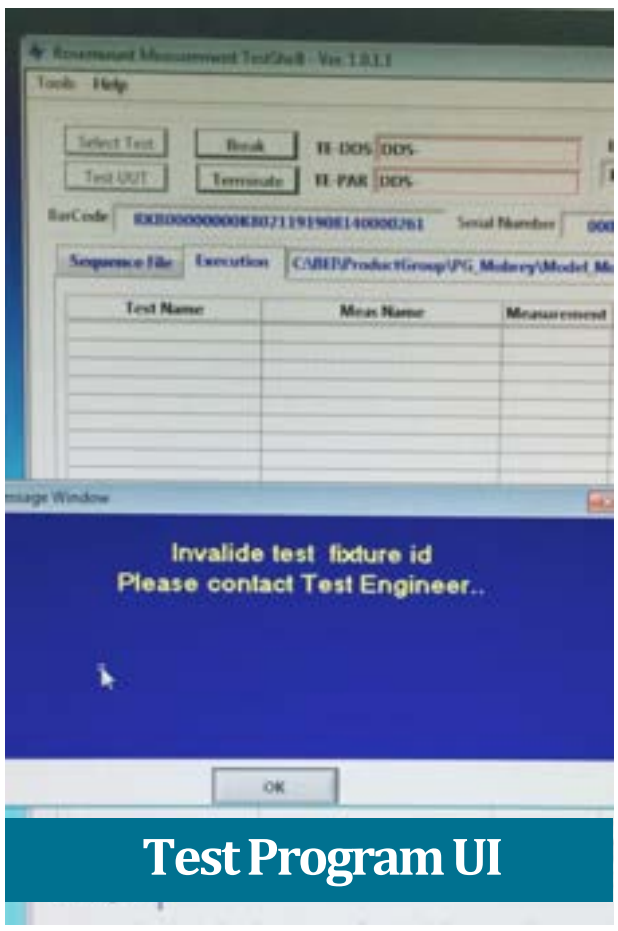
Test Program Porting From VB6 To Labview (Ultrasonic Liquid Sensor)

Software Tools and Programming Language ： Labview, VB6

Porting existing test program(VB6) to labview, measure frequency, AC/DC voltage, current, amplitude, vpp with oscilloscope , signal generator, power supply, USB6501-NI and DMM, verify fixture ID, connect to database server, save log.



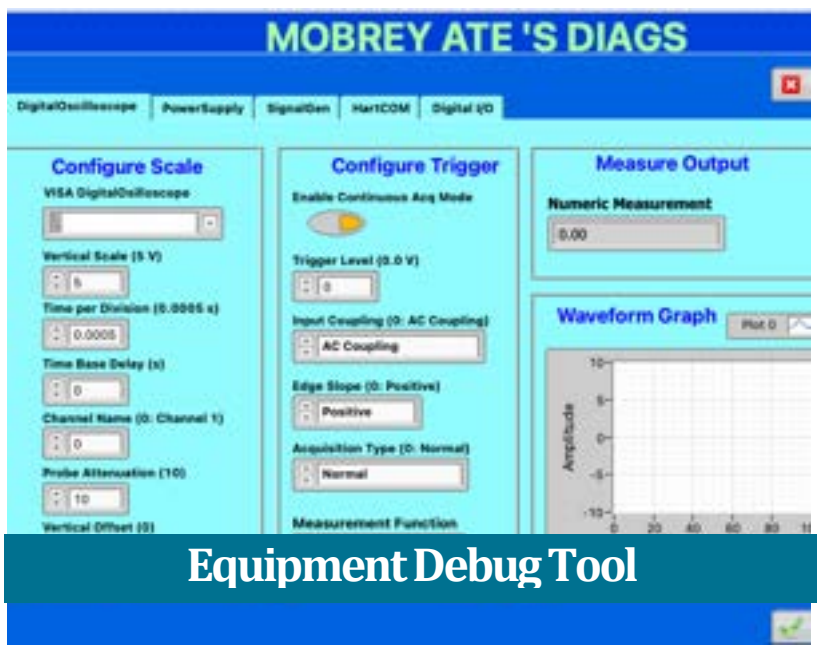
Labview Code



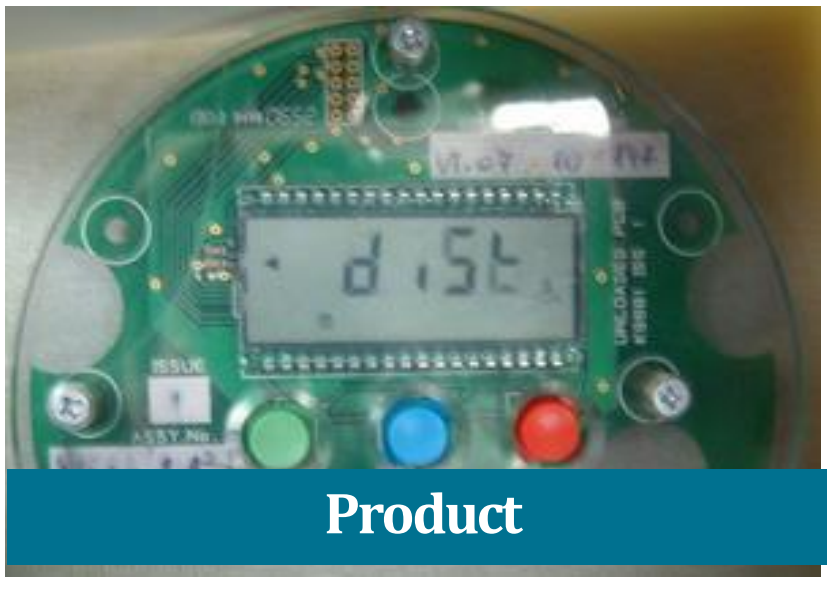
Test Program UI

```
0 references
Module Module_Variable

#Region "Variable"
    Public PFS4 As Class_PFS.Class_PFS4 = New Class_PFS.Class_PFS4()
    Public Main_Display As Class_Main_Display.Class_Main_Display = New Class_Main_Di

    Public Class_tools_T As New Class_Tools_TNT.Class_Tools()
    Public Data_Record_Tests As Class_Tools_TNT.Class_Tools.Datas_Test_Main = New Cl

    Public Const CFGFILE As String = "config.ini" 'Station configuration file name i
    Public gFile_ini_Name As String = Application.StartupPath & "\" & CFGFILE
    Public Class_InI As New Class_Ini_File_Process.Class_Ini_File_Process()

    Public iLogInFail As Integer = 0
    Public dLimit_Press As Double = 100
    Public dLimit_Differ_First_and_Second As Double = 0.01
    Public misAbort As Boolean = False
    Public sFormat_SN As String = "B#########"

    Public Comport_MARK10 As New Class_Comport.Class_Comport_CS()
    Public Comport_MARK10_sComport_Data_Buffer As String
    Public Comport_MARK10_Enable_Capture As Boolean = False

    Public DMM_comPort As New Class_Comport.Class_Comport_CS()
    Public Comport_DMM_sComport_Data_Buffer As String
    Public Comport_DMM_Enable_Capture As Boolean = False

    Public dAve As Double
```

VB6 Code



Equipment Debug Tool



Product

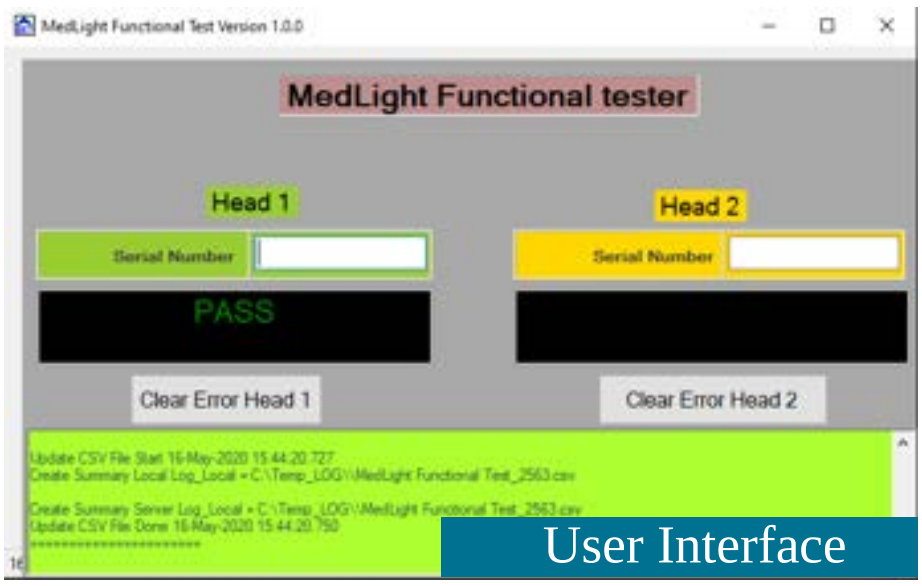
Test Program For Handheld Medical Device

Software Tools and Programming Language ： VB, Visual Studio

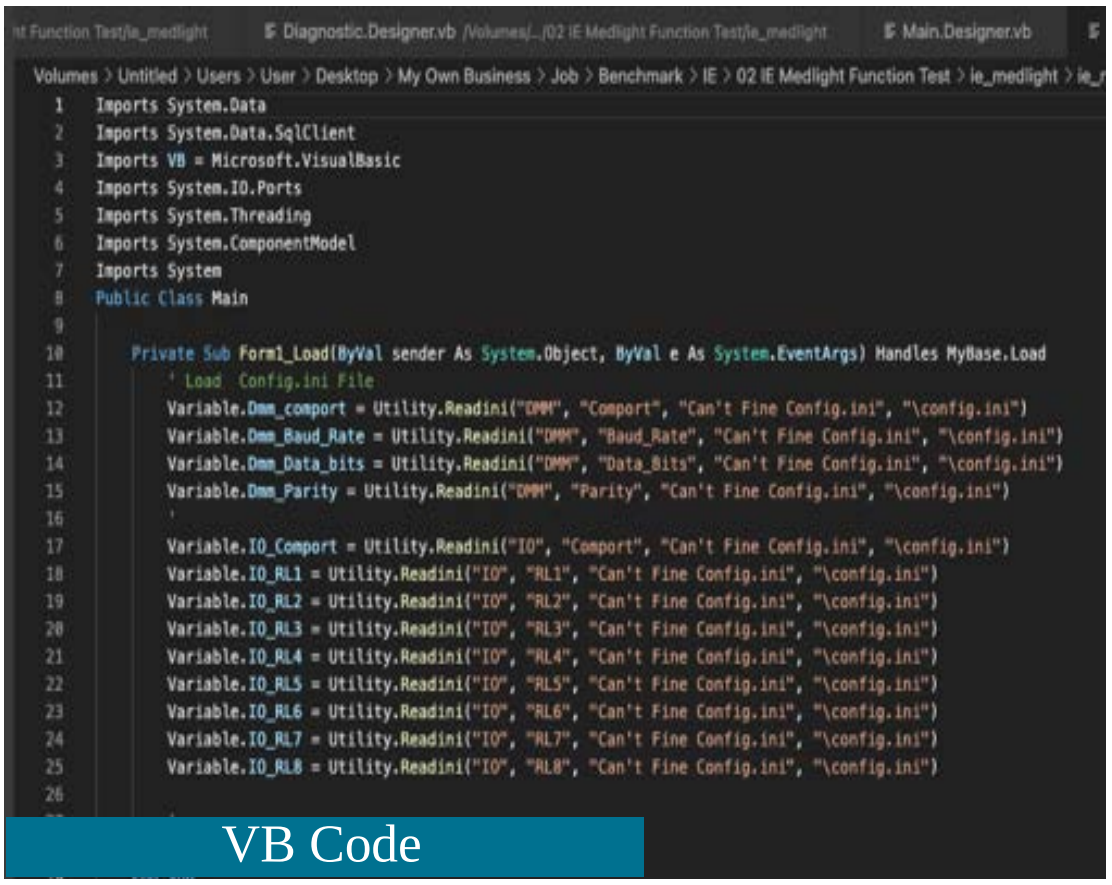
VB interface with tester via comport to control solenoid to push the button .At first LED on device is OFF then when push the button first time LED will ON with low current

when push the button second time LED will ON with medium current. When push the button third time LED will ON with high current. When push the button fourth time LED will OFF. We measure voltage and current at all stage with multi meter.

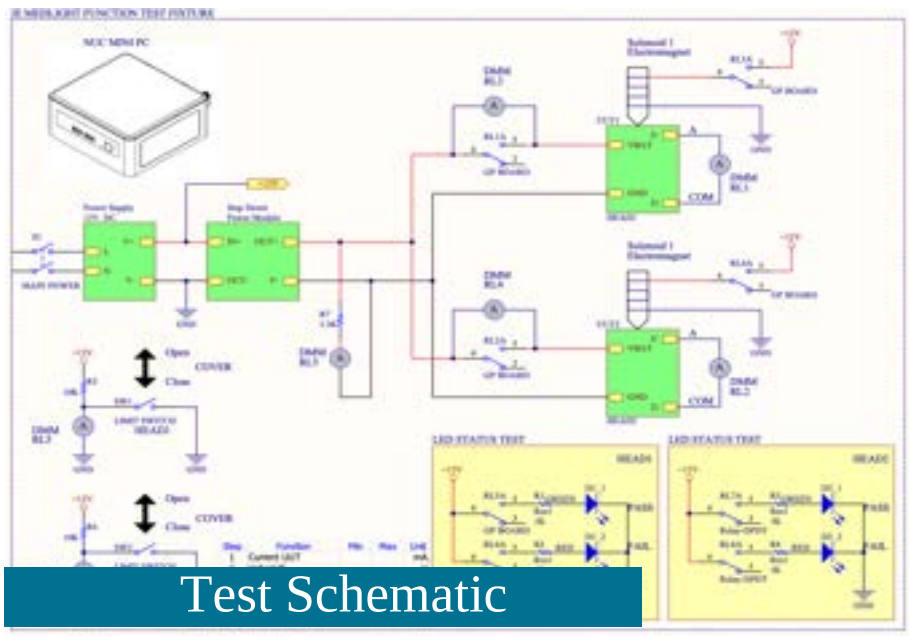
2 test head but can work independently and connect with database server.

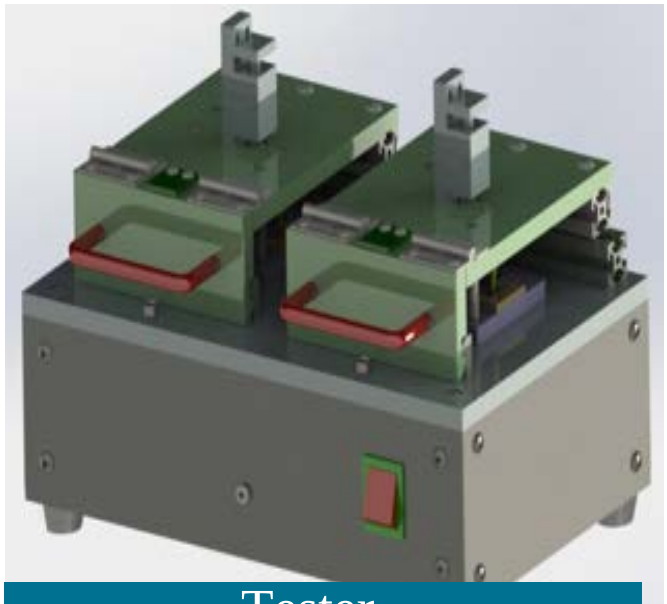


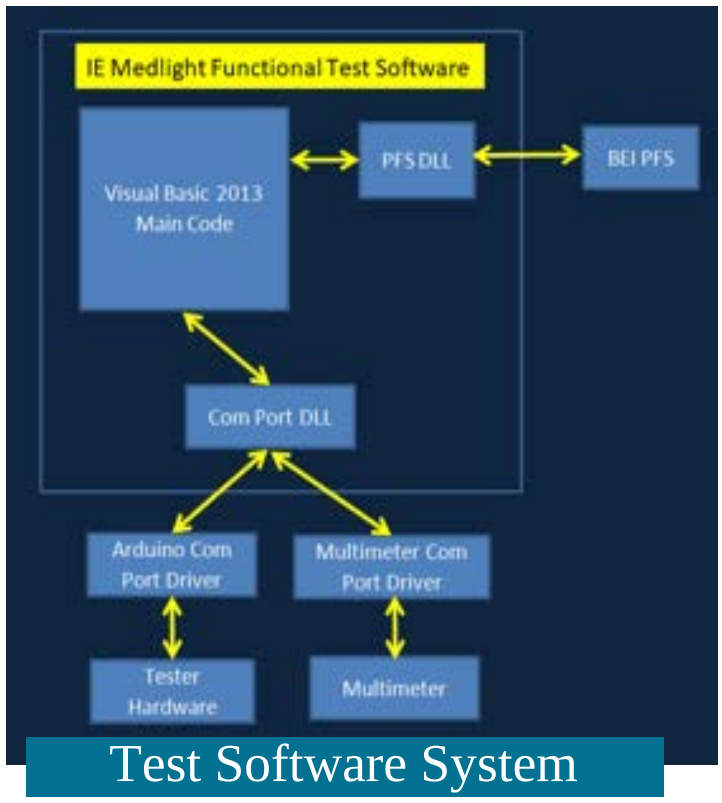
User Interface



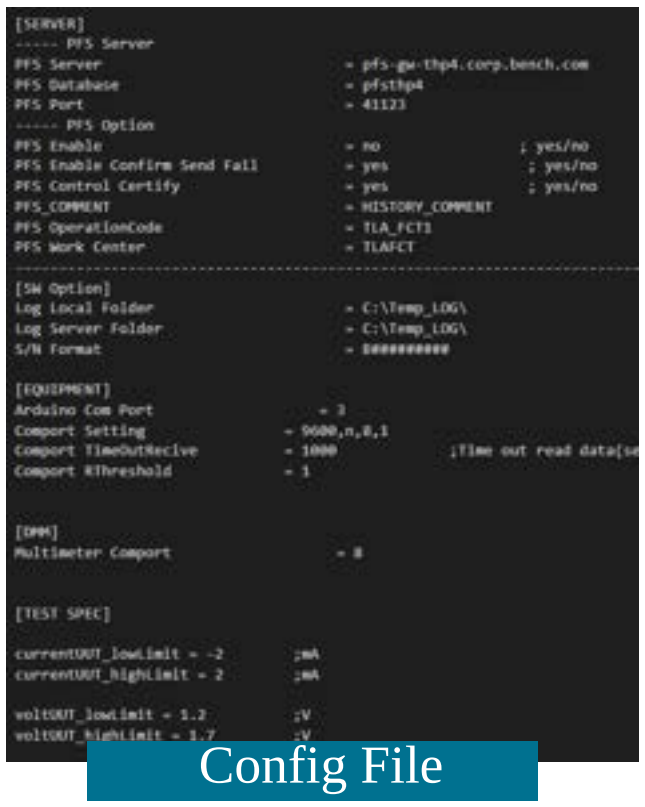
VB Code


Test Schematic


Tester



Test Software System



Config File

Automated Optical Inspection For Trimble Product (Medical Module)

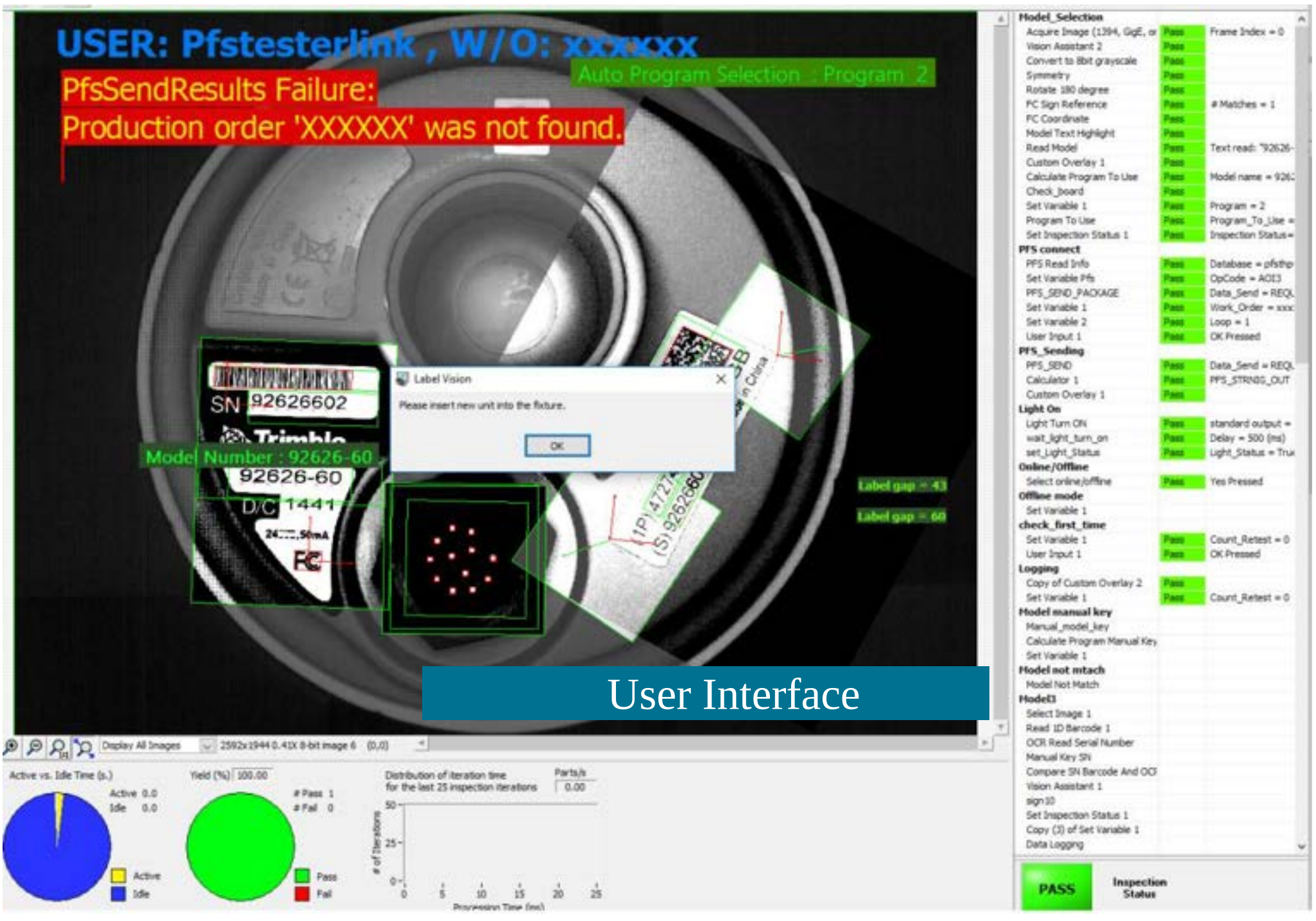
Software Tools and Programming Language : NI Vision Builder

This software can inspect for label presence, read 1D and 2D barcode, check mismatch and duplicate serial number, logo inspection, OCR, check glue presence, count connector pin, send result to database server and log to local drive

Product Placed Inside Tester

Product

- label presence(S/N and P/C label)
- label placement
- label readability
- label orientation
- 1D Bar code Reader(code 39)
- 2D code reader(data matrix)
- Mismatch and duplicate serial number.
- Logo Inspection
- Optical character recognition (OCR)
- Report individual failure point.
- Sent test result to the PFS.
- Glue presense.



User Interface

Game Development

Test software is used in electronic factory, to test electrical function of finish assemble of electronic PCBA board or ICs. This software will provide GUI for user, can communicate with test equipment like oscilloscope, digital multi meter, send log of test result to local drive and database, some need to have image processing function to inspect product appearance.

Software Tools And Programming Language

C#
VS Code
Unity3D Framework
Blender
Audacity
Inkscape

Example of My Project

1.Marble Ball Racing 2022 (PC)
2.Marble Ball Racing (PC)
3.Ball Sort Puzzle 2077 (Android ,IOS)
4.Space Rush (Andoird, IOS)

Unity3D Framework

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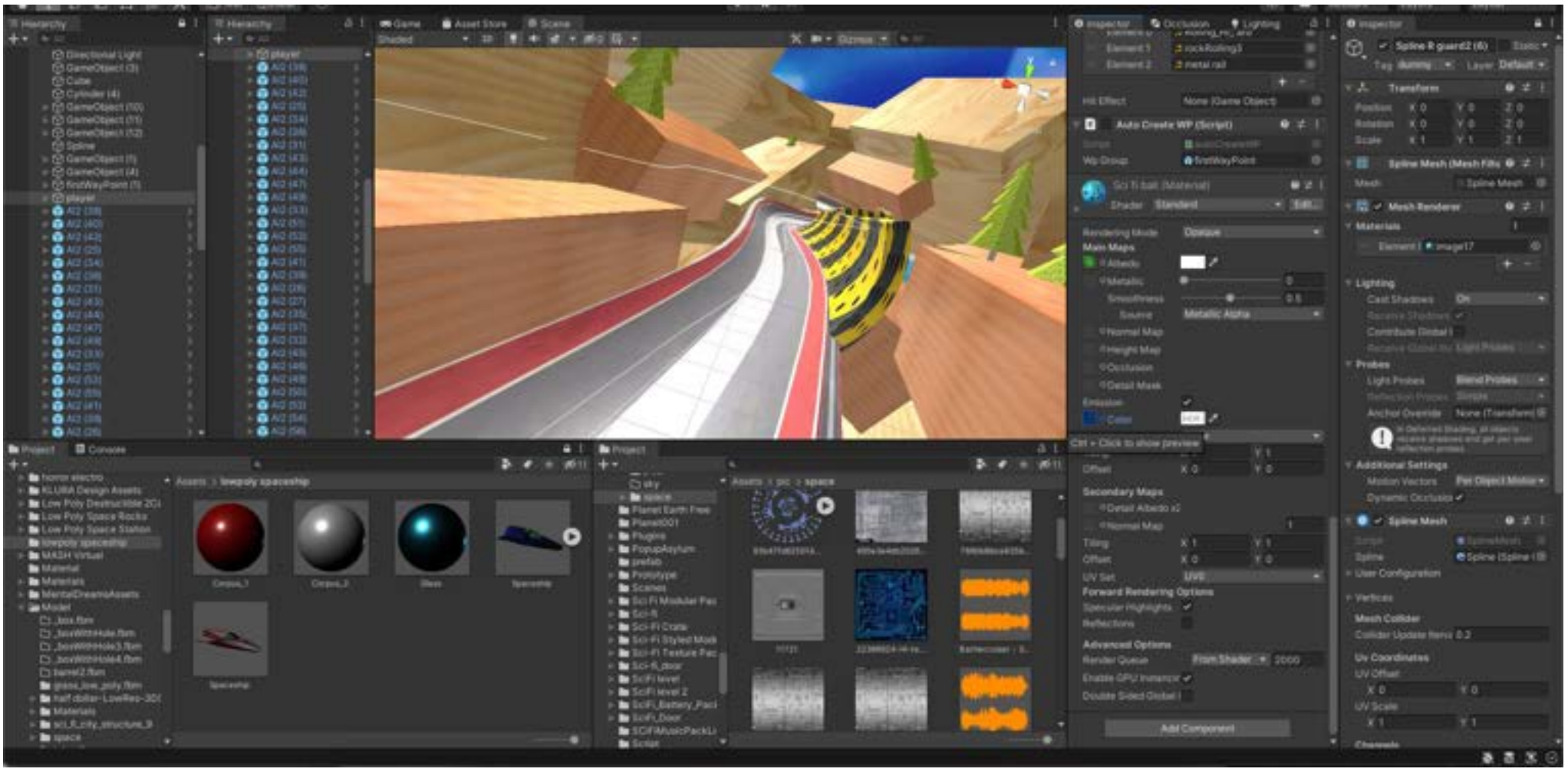
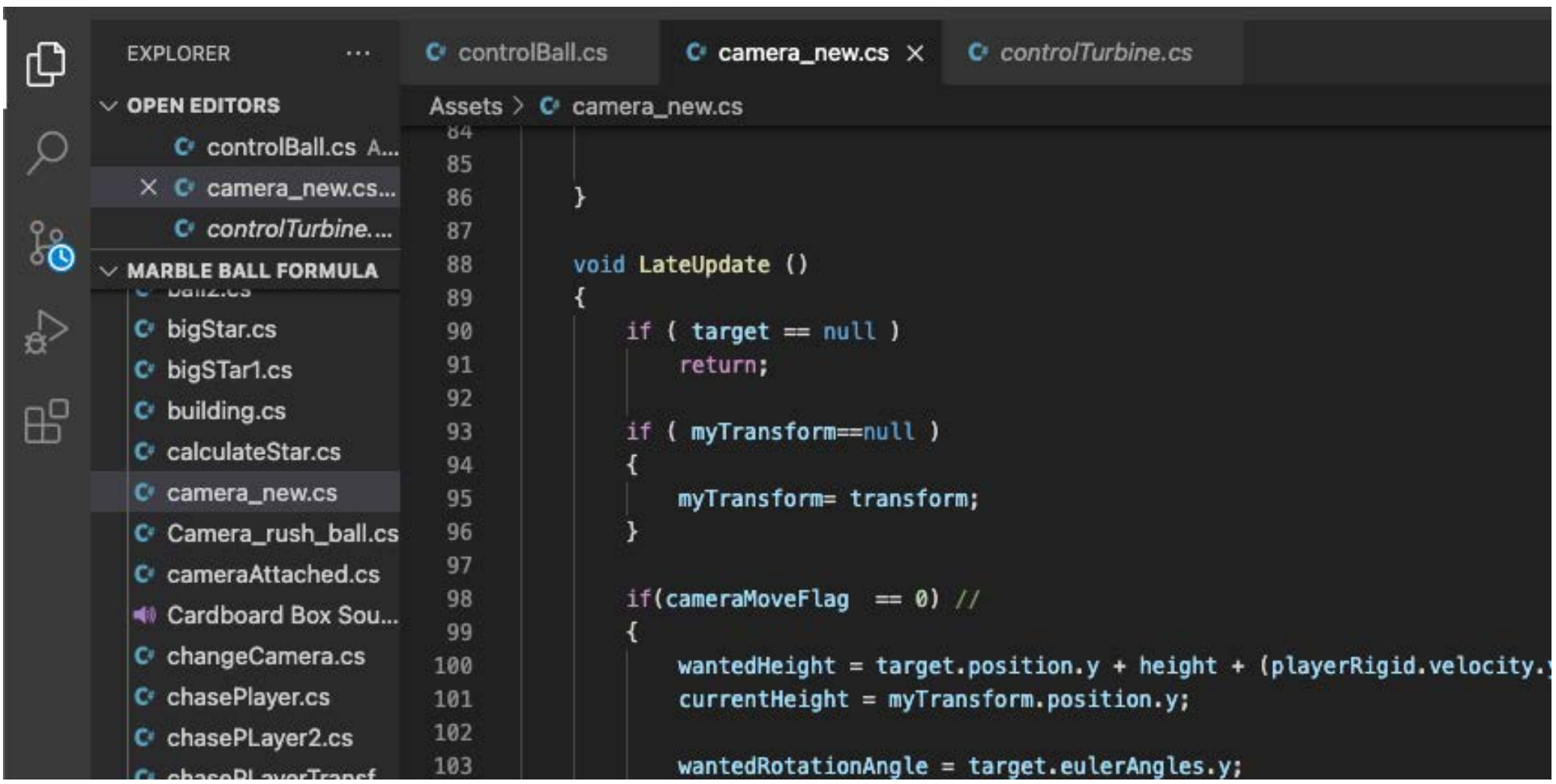
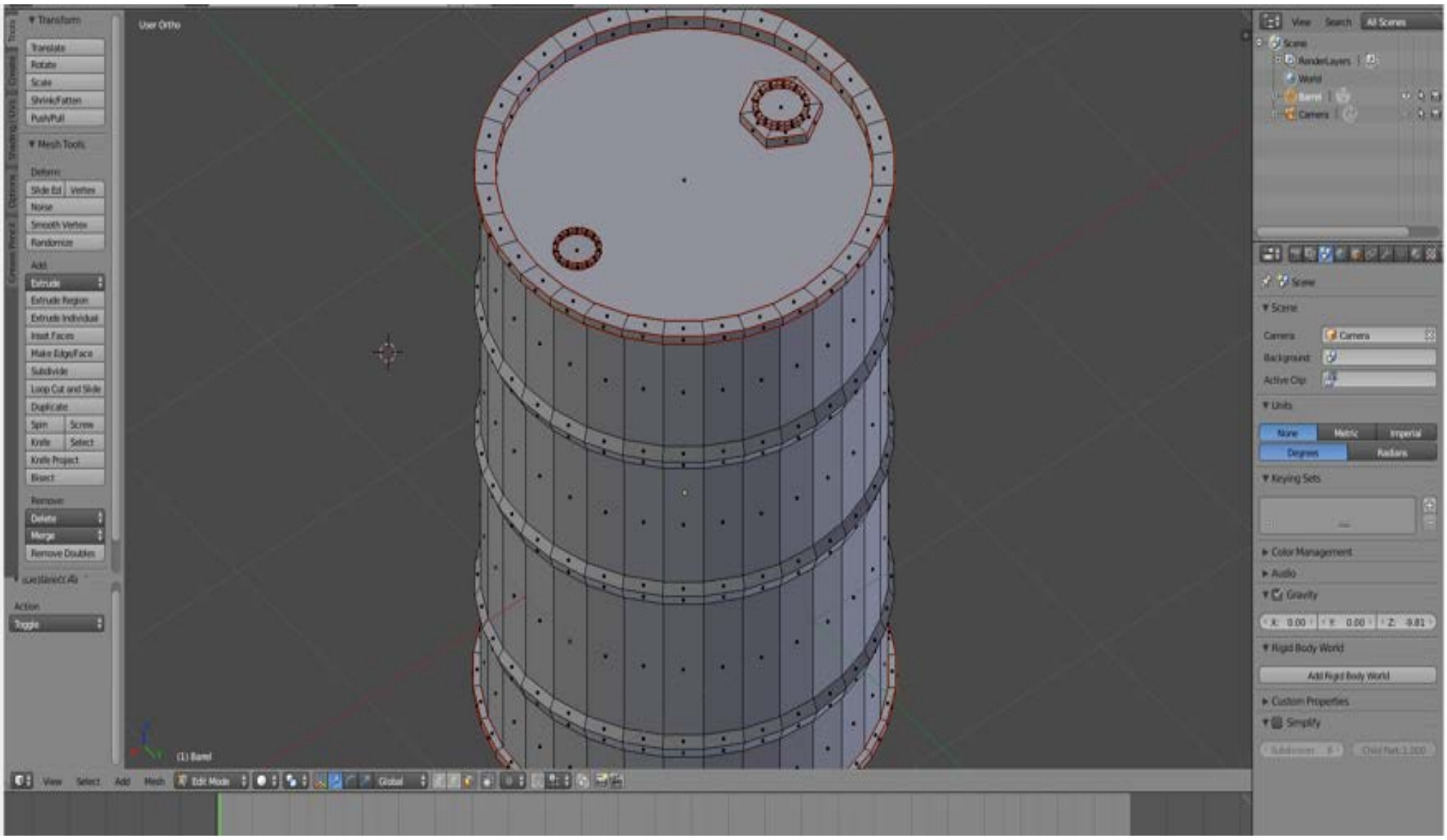


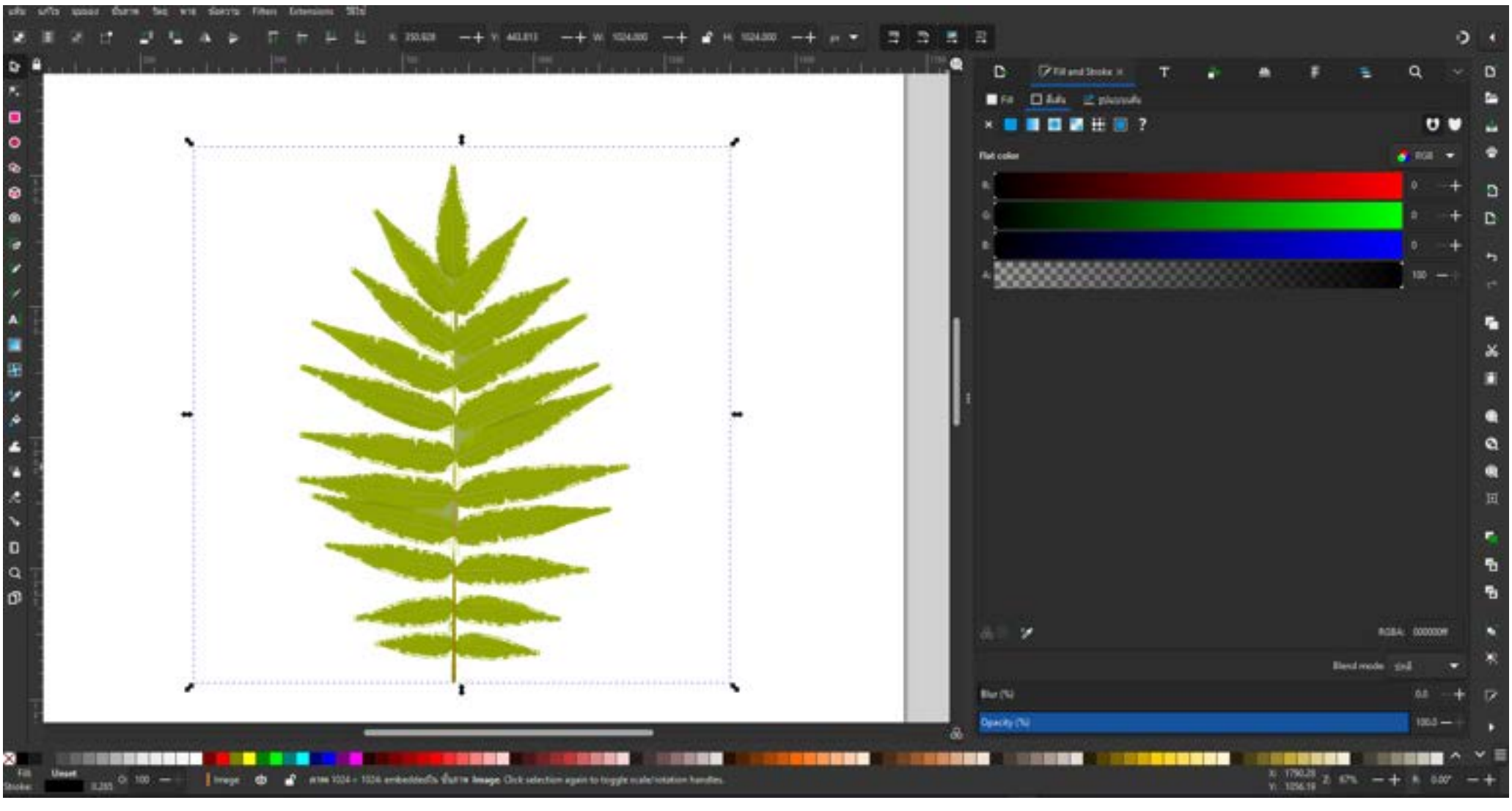
VS Code & C#



Blender (For create and edit 3D model)



Inkscape (For create and edit image/ texture)



Marble Ball Racing 2022 (PC, steam)

https://store.steampowered.com/app/2235450/Marble_Ball_Racing_2022/

Marble Ball Racing (PC, steam)

https://store.steampowered.com/app/1509700/Marble_Ball_Racing/

Space Rush (Android, IOS)

Ball Sort Puzzle (Android, IOS)

Tic Tac Toe (Android)

WEB APPLICATION

Software Tools And Programming Language

Angular
React
Node.js with TypeScript
ASP.NET Core
EF Core
C#
SQL
MSSQL
MySQL
HTML, CSS
Bootstrap
VS Code

Example of My Project

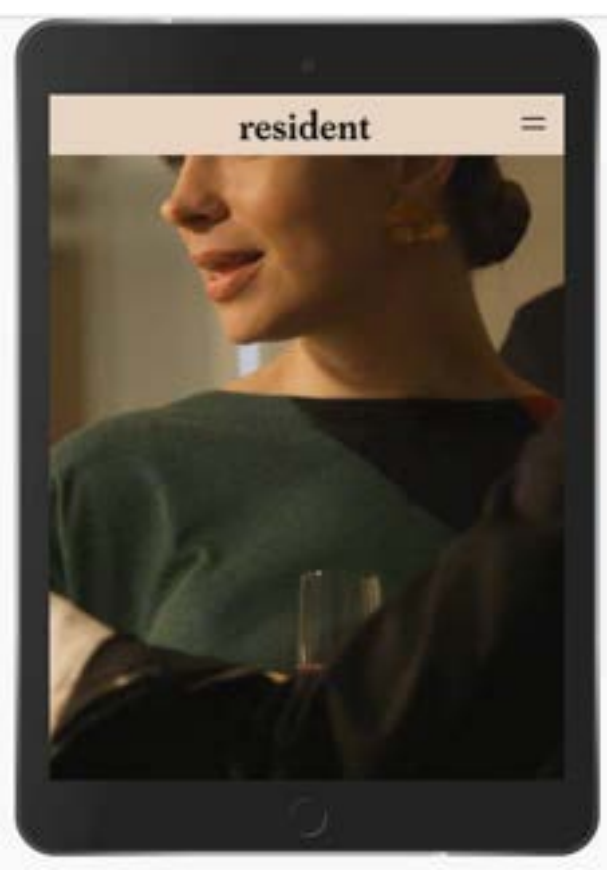
1. Web App For Restaurant (React , BootStrap, Typescript)
2. Web App For Support Test System (Angular ,Asp.Net, C#, Typescript, MSSQL)
3. Web App For Online Shopping (Angular, Asp.Net, C#, Typescript, MSSQL)
4. Web App For Food Online (Angular, Express, Mongo, Nodejs, Typescript)

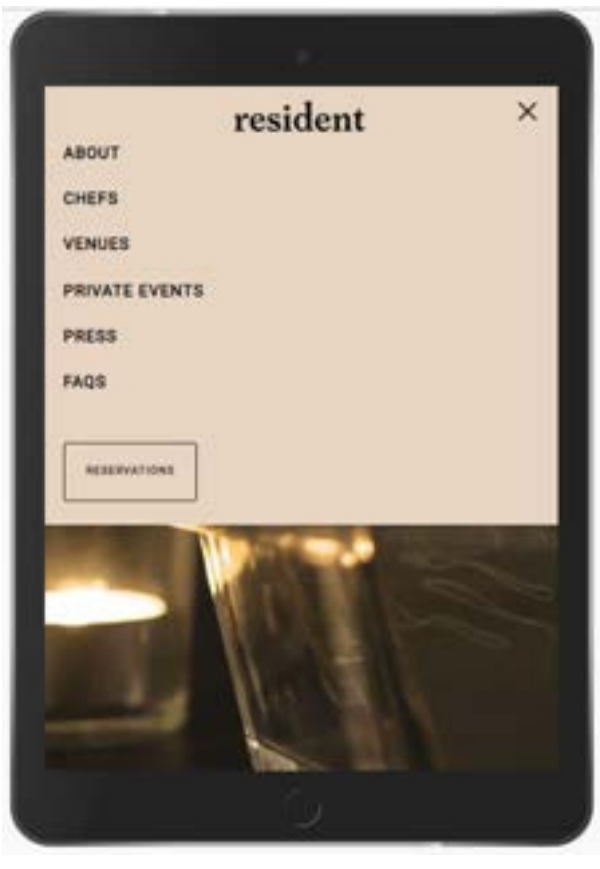
Web App For Restaurant

React, BootStrap, Typescript, Azure Web Service

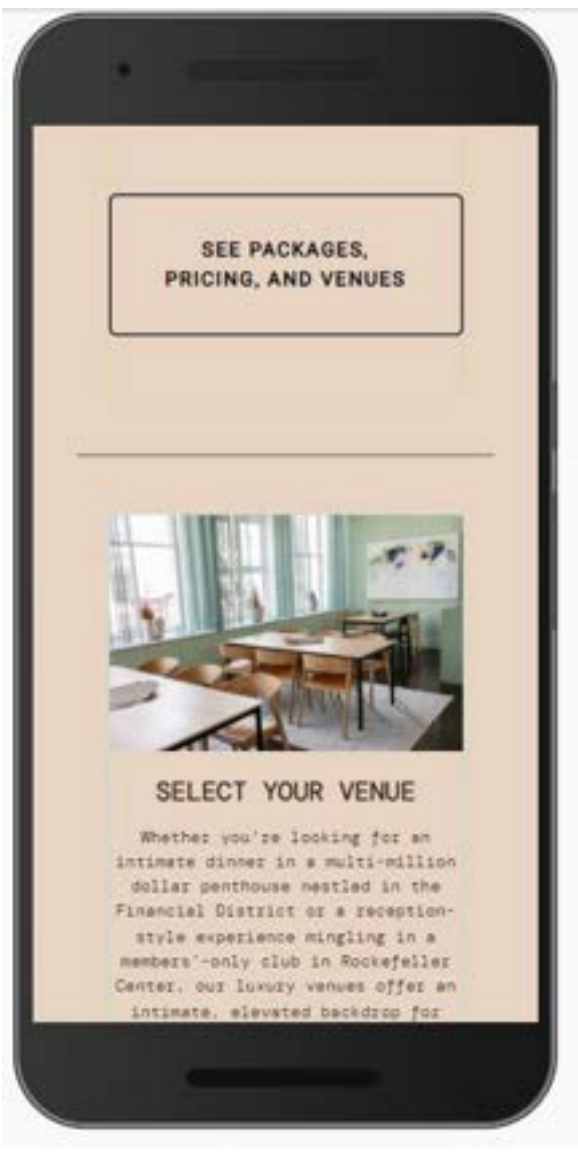
Web Link Github

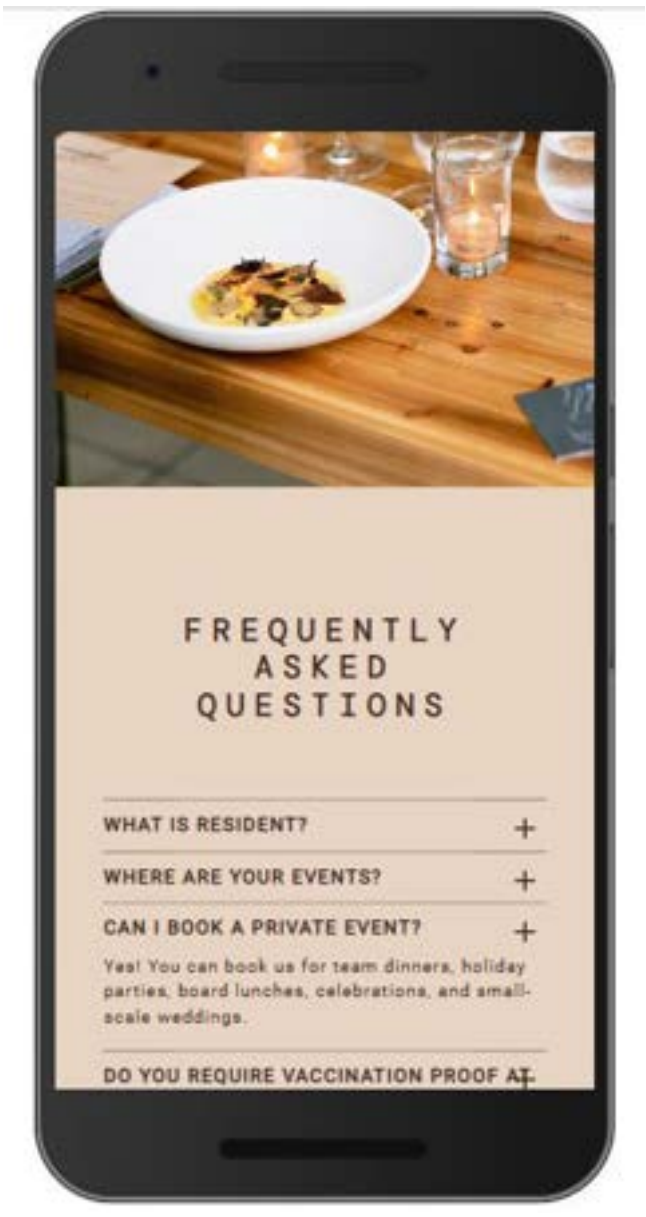
This web is build for learning purpose. The web design is cloned from website of fine dinning restaurant located in New York (Resident).

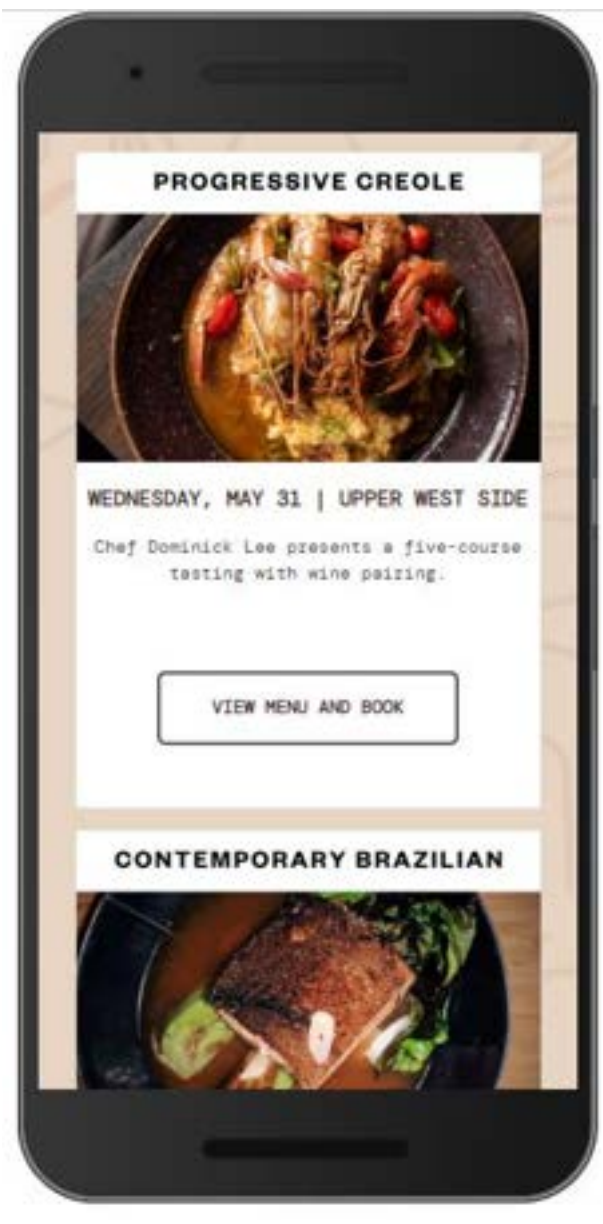




resident
PRIVATE EVENTS
WHERE EVERY TABLE IS THE CHEF'S TABLE.
There are dozens of private dining rooms in NYC; diners


SEE PACKAGES, PRICING, AND VENUES
SELECT YOUR VENUE
Whether you're looking for an intimate dinner in a multi-million dollar penthouse nestled in the Financial District or a reception-style experience mingling in a members'-only club in Rockefeller Center, our luxury venues offer an intimate, elevated backdrop for


FREQUENTLY ASKED QUESTIONS
WHAT IS RESIDENT?
WHERE ARE YOUR EVENTS?
CAN I BOOK A PRIVATE EVENT?
Yes! You can book us for team dinners, holiday parties, board lunches, celebrations, and small-scale weddings.
DO YOU REQUIRE VACCINATION PROOF AT


PROGRESSIVE CREOLE
WEDNESDAY, MAY 31 | UPPER WEST SIDE
Chef Dominick Lee presents a five-course tasting with wine pairing.
VIEW MENU AND BOOK
CONTEMPORARY BRAZILIAN

Web App For Support Test System (Show And Edit Test Parameter)

Frontend -> Angular, Typescript, Nodejs, BootStrap

Backend -> .Net Core, C#, MSSQL, MySQL, IIS, EF Core

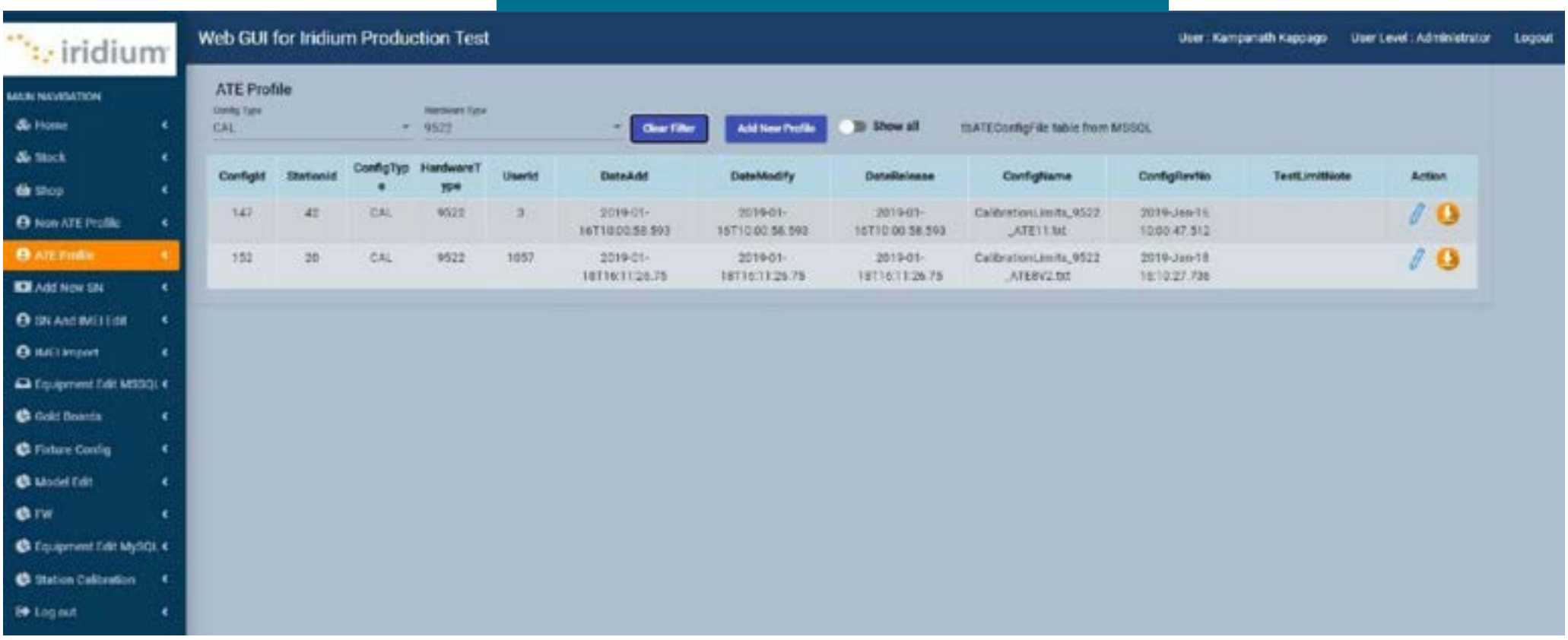
Web Link Github

This web app connect with 2 database server (MSSQL and MySQL) that collect test result and test parameter from production test program in electronic manufacturing (GPS board and satellite associate product).

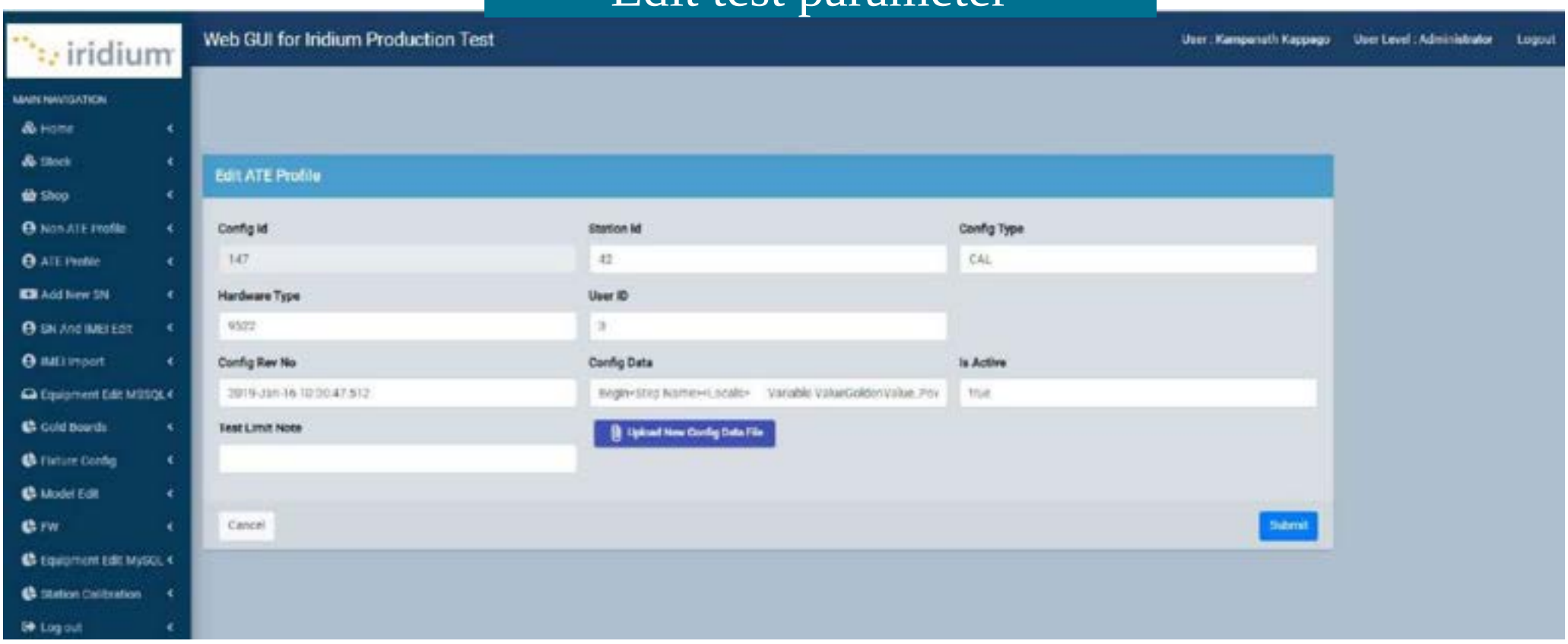
This web will be used by test engineer or technician to see detail of test station , gold board ,serial number ,product model, test equipment. Also to edit test parameter that will be used in test program.

Login page

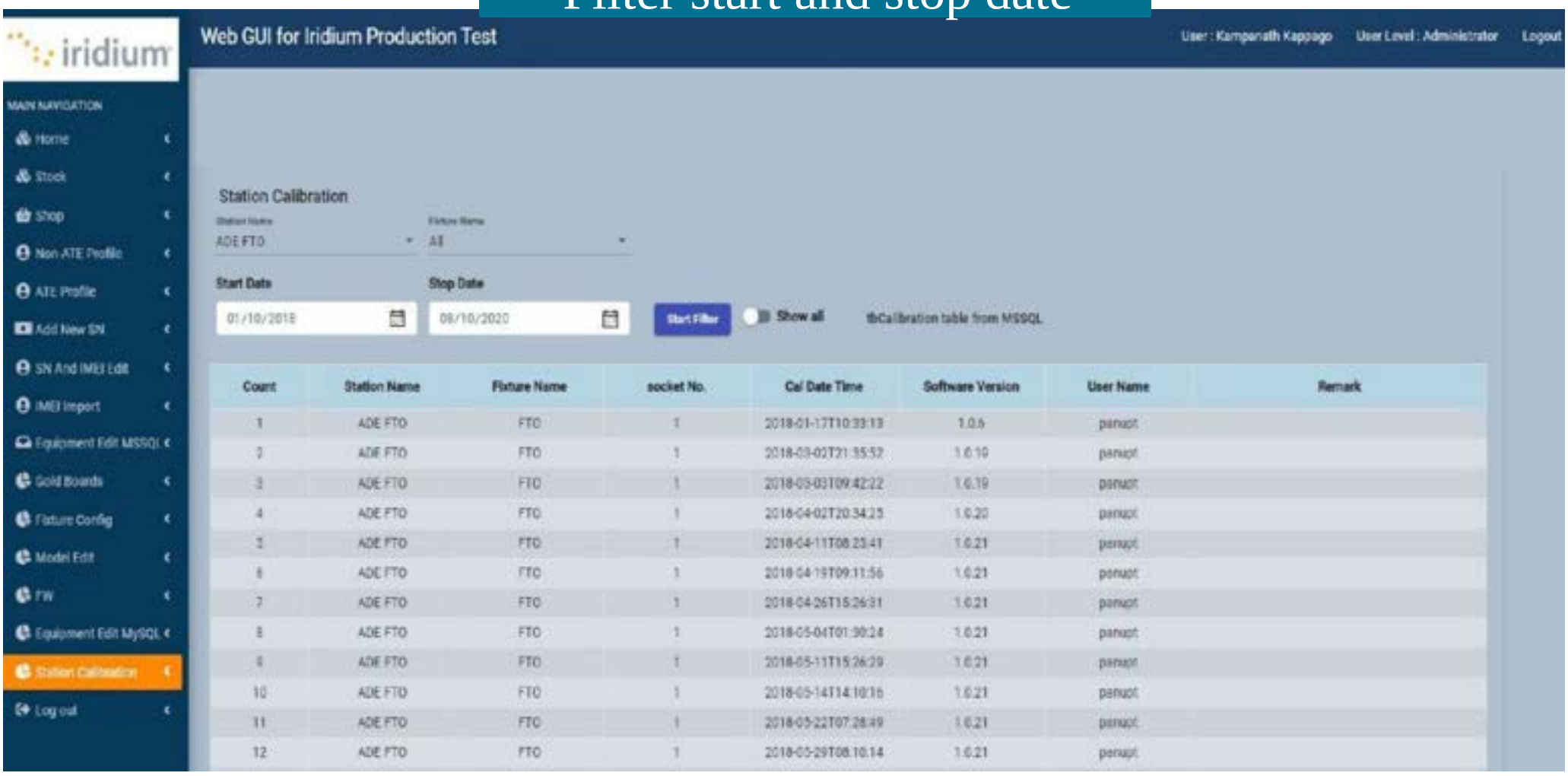
Show and filter table



Edit test parameter



Filter start and stop date



Web App For Online Shopping

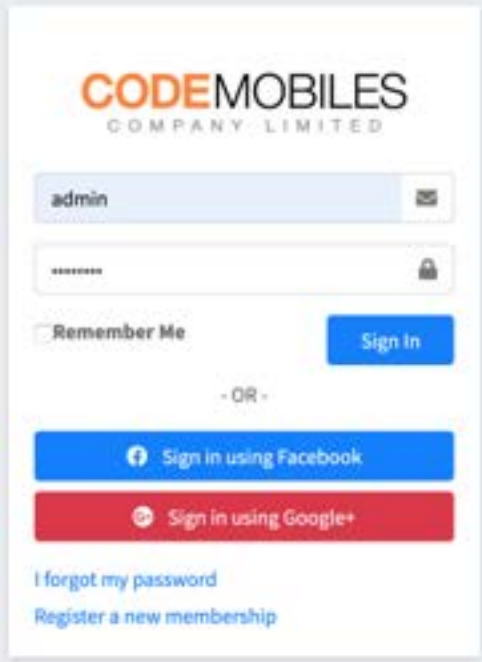
Frontend -> Angular, Typescript, Nodejs, BootStrap

Backend -> .Net Core, C#, MSSQL, EF Core

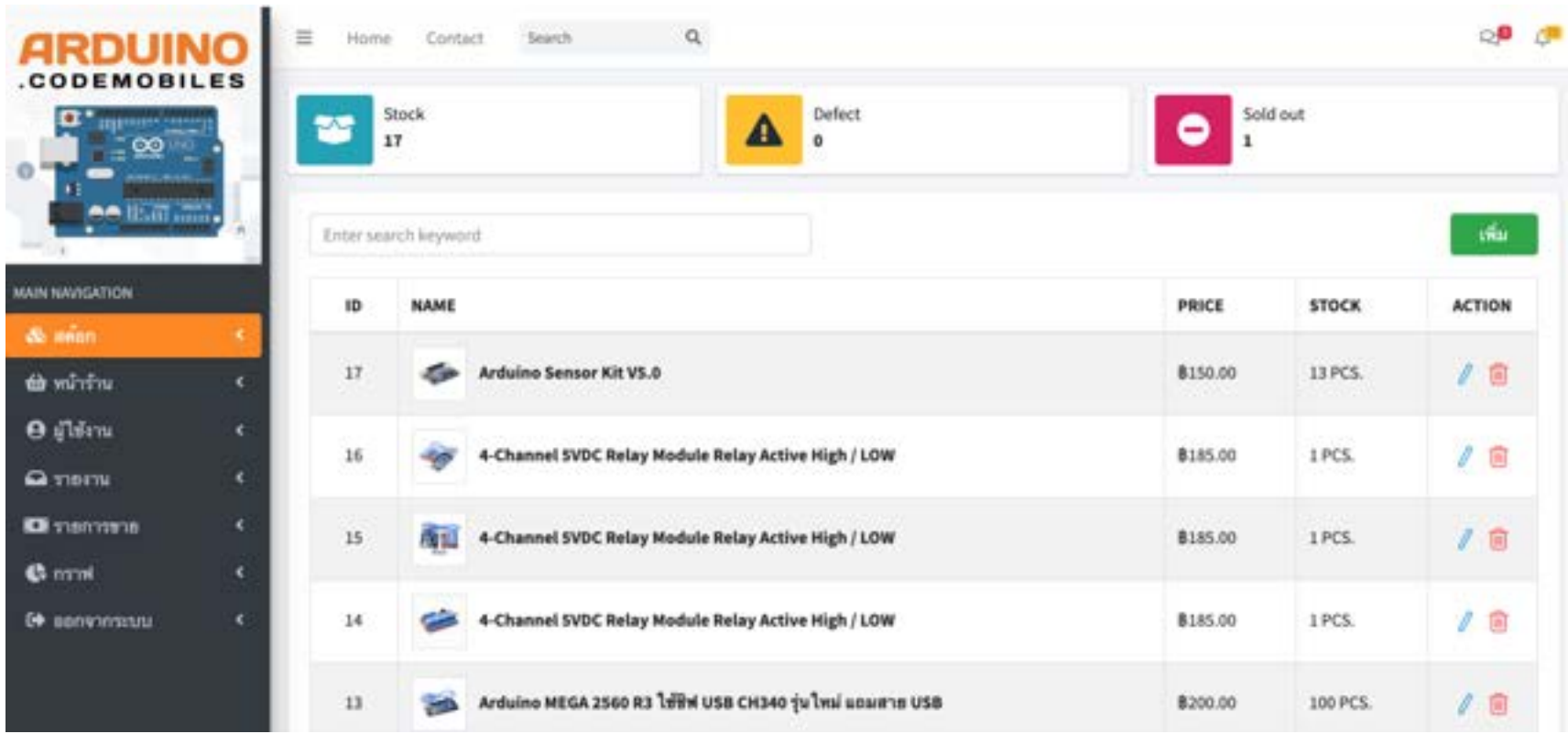
Web Link Github

This website is build for learning purpose from Angular + ASP.net training course.

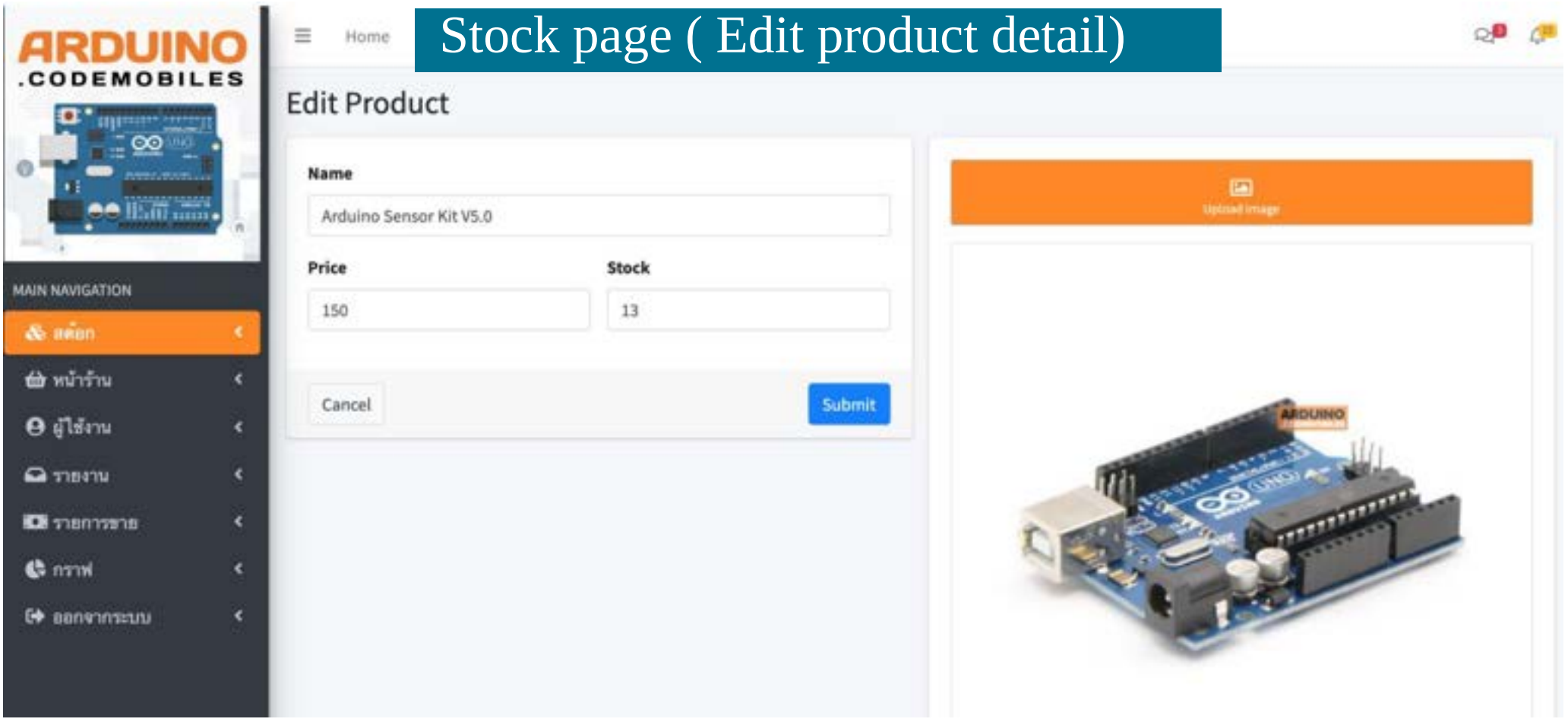
Login page



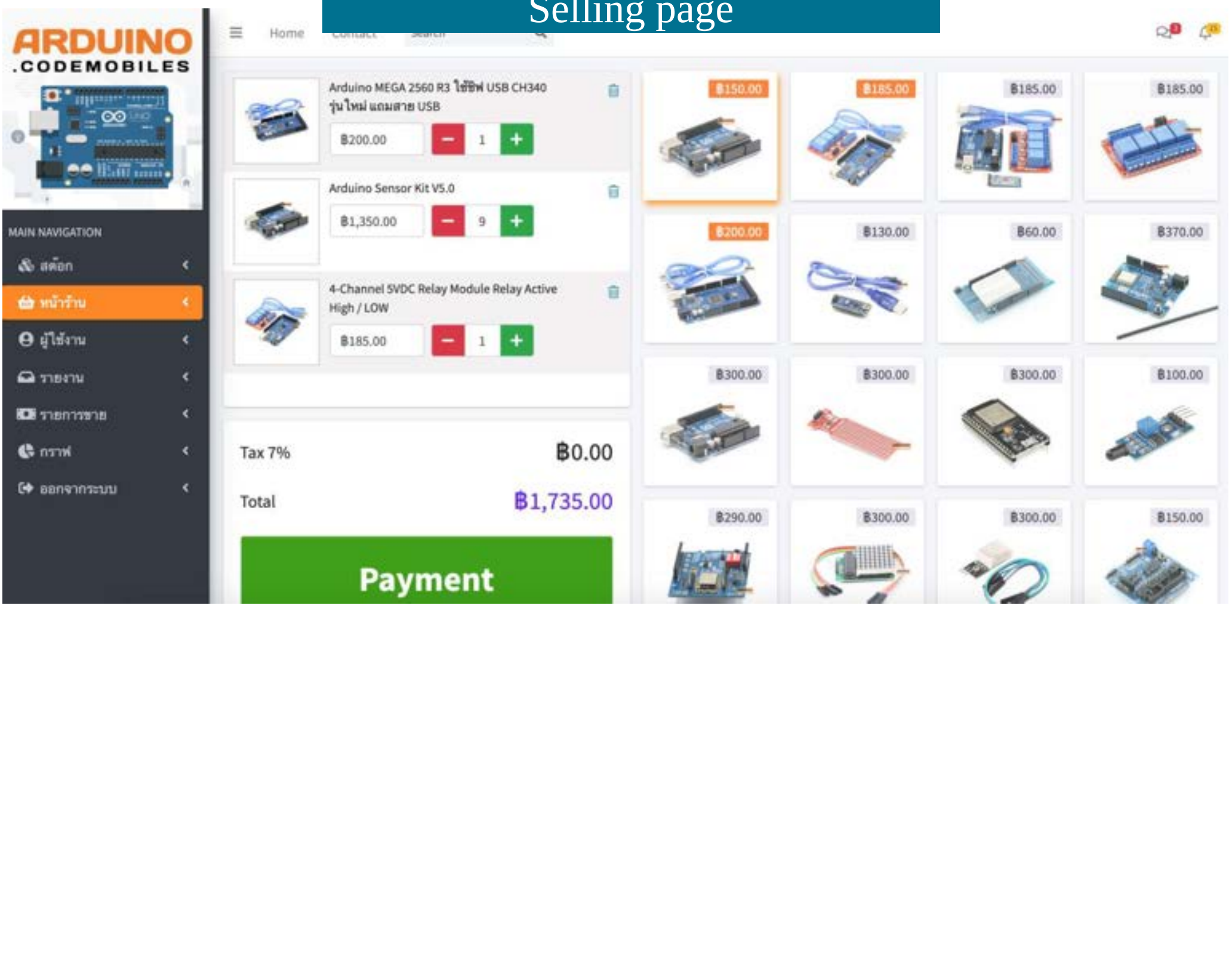
Stock page



Stock page (Edit product detail)



Selling page

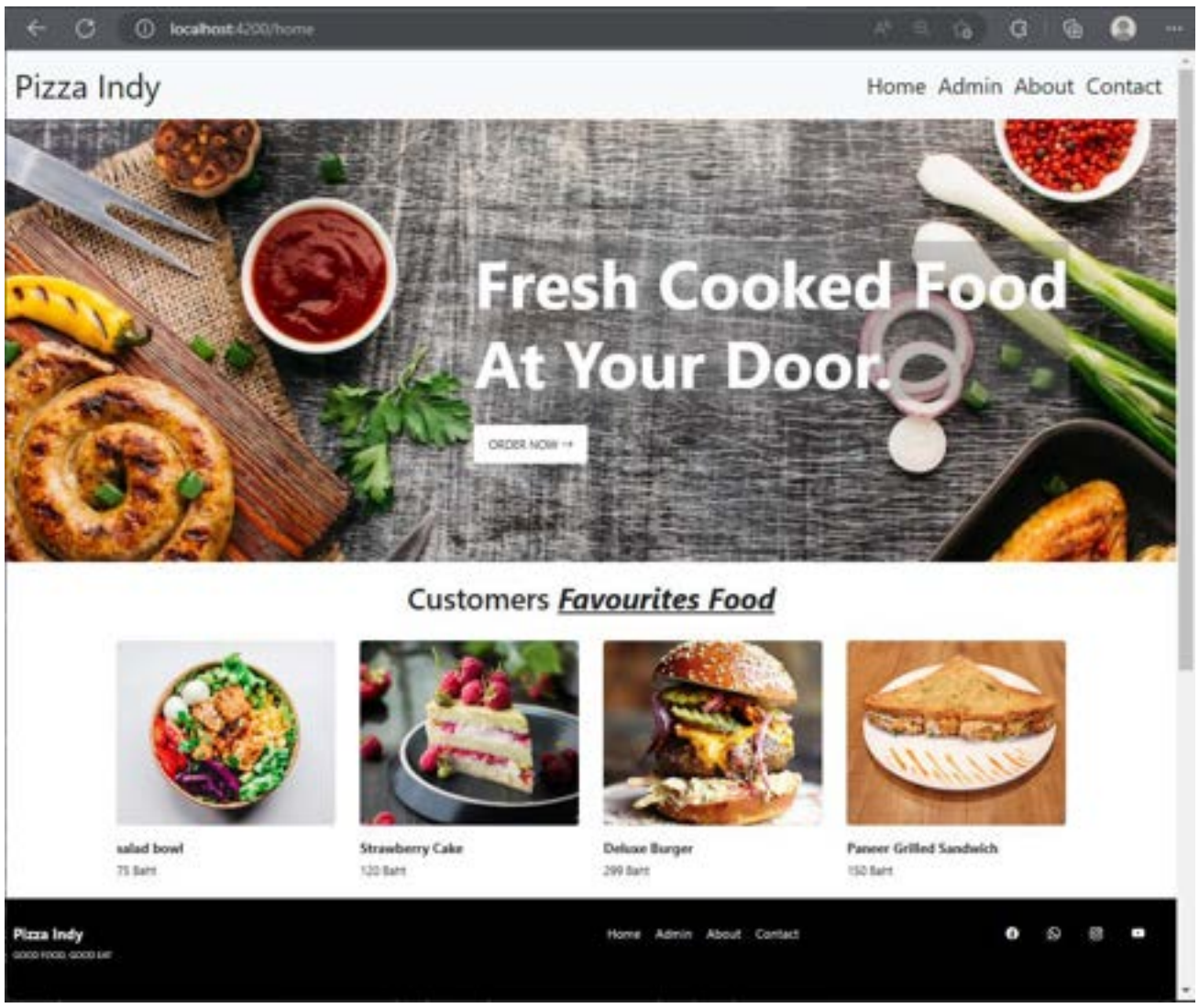


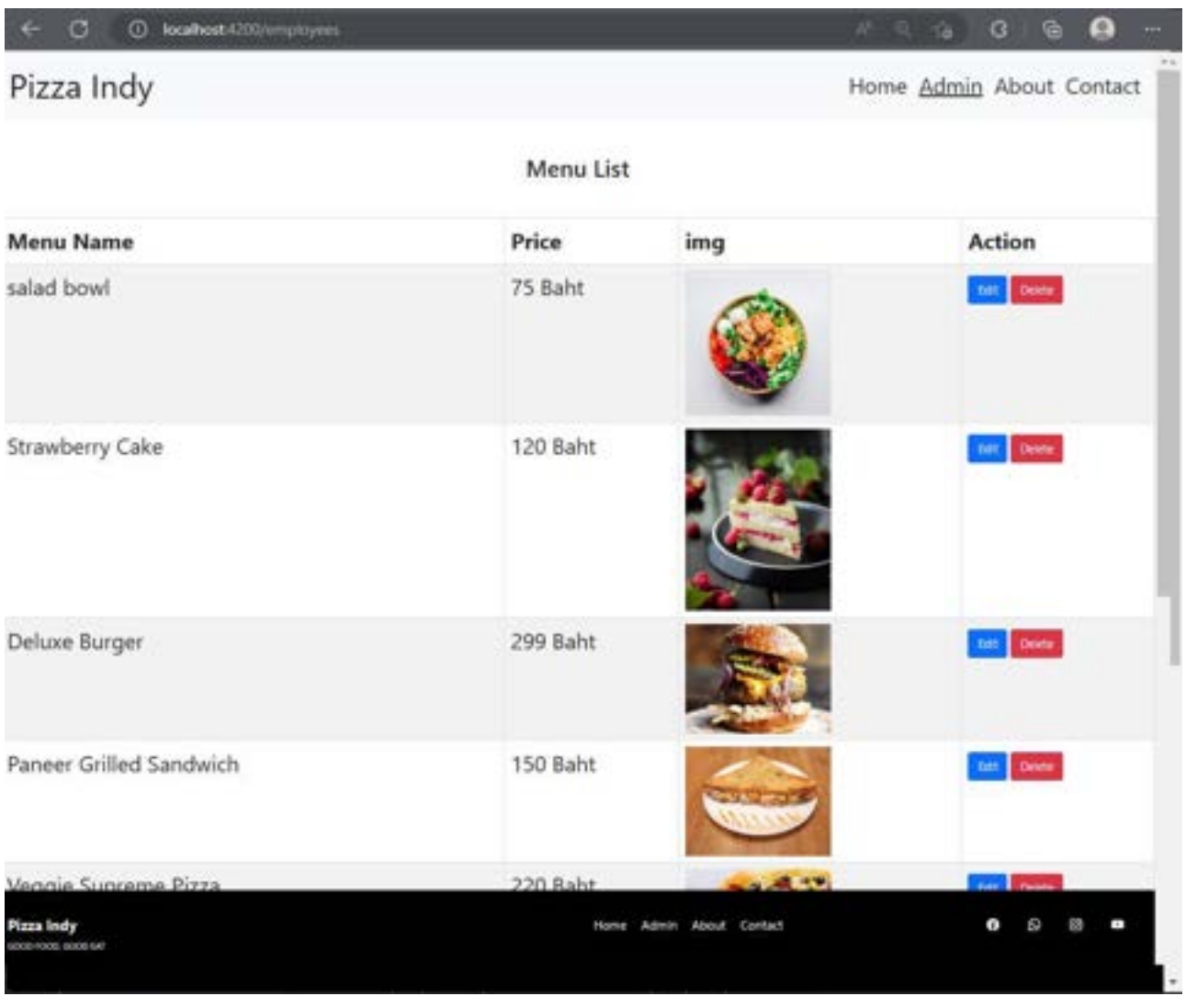
Web App For Food Online

Frontend -> Angular, Nodejs, Typescript

Backend -> Express, Mongo

This web site is build for learning purpose (Not finish yet).





Embedded System

Software Tools And Programming Language

MCS-51 Assembly Langauge
C++
VB6
Microcontroller
Embedded Linux

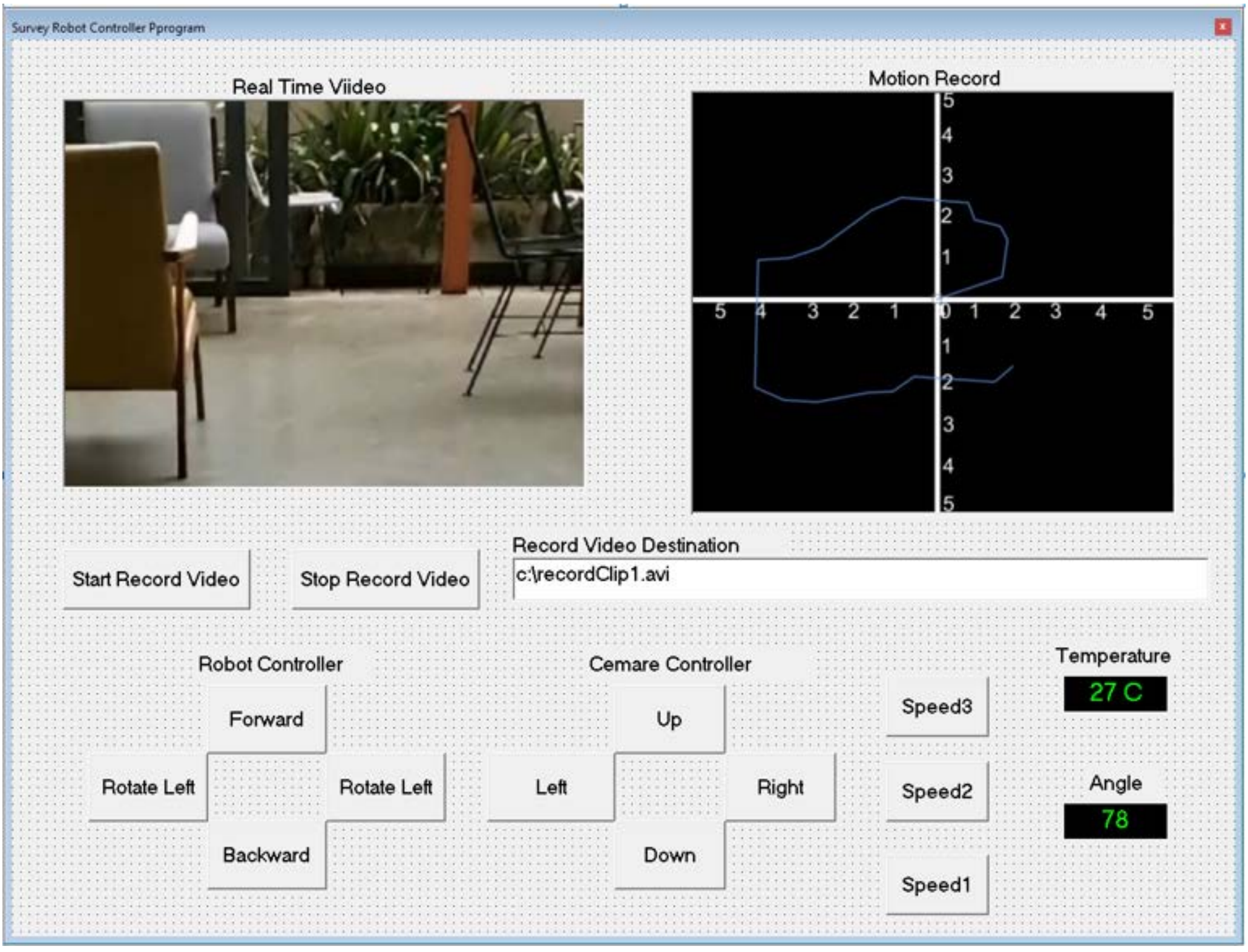
Example of My Project

1.Survey Robot (Senior Project)
2.Simple Web Interfacing For Controlling Device Demo (Embedded Linux)

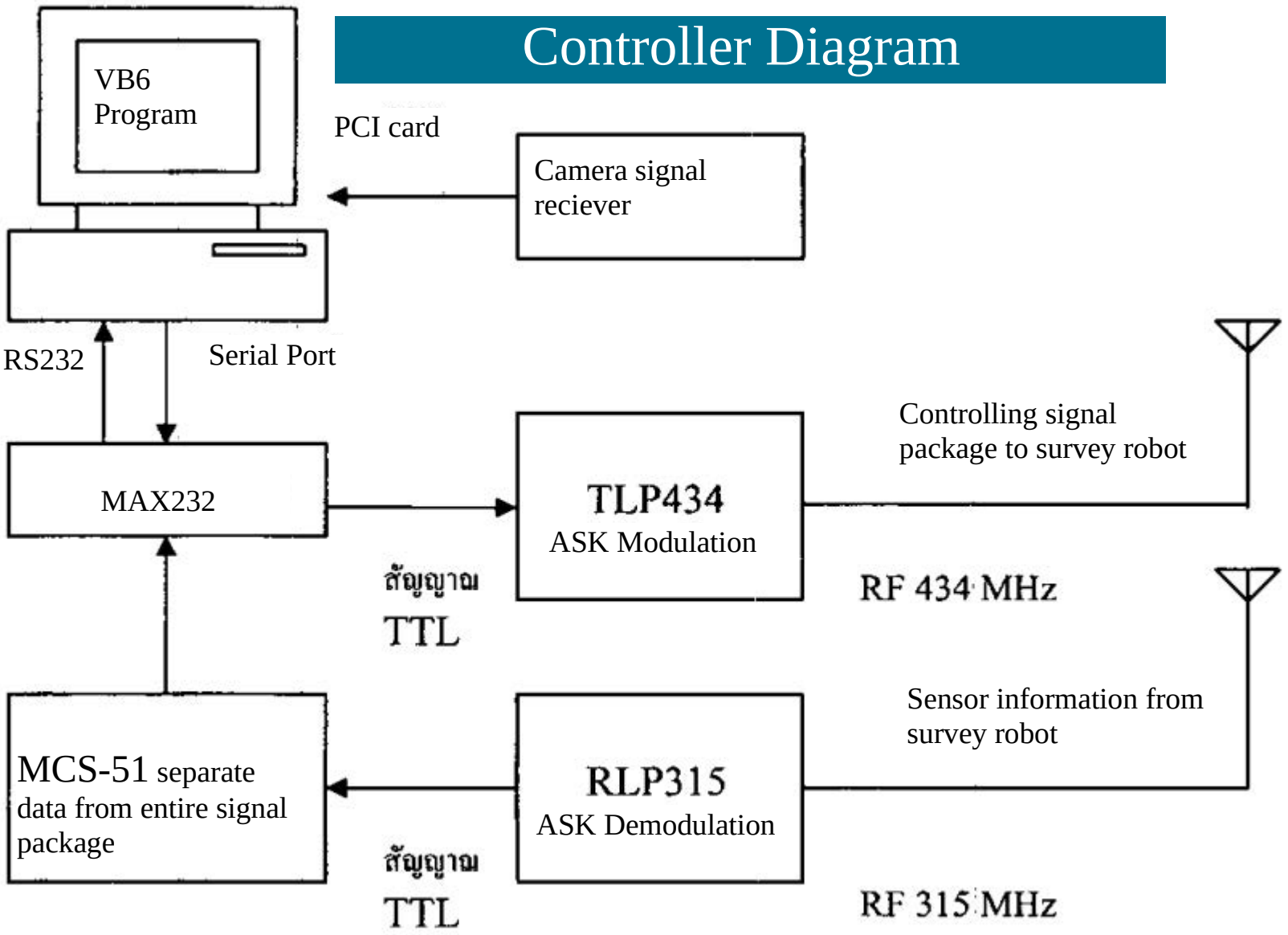
Survey Robot (Senior Project)

Software Tools and Programming Language : MSC-51 Assembly Langauge, VB6

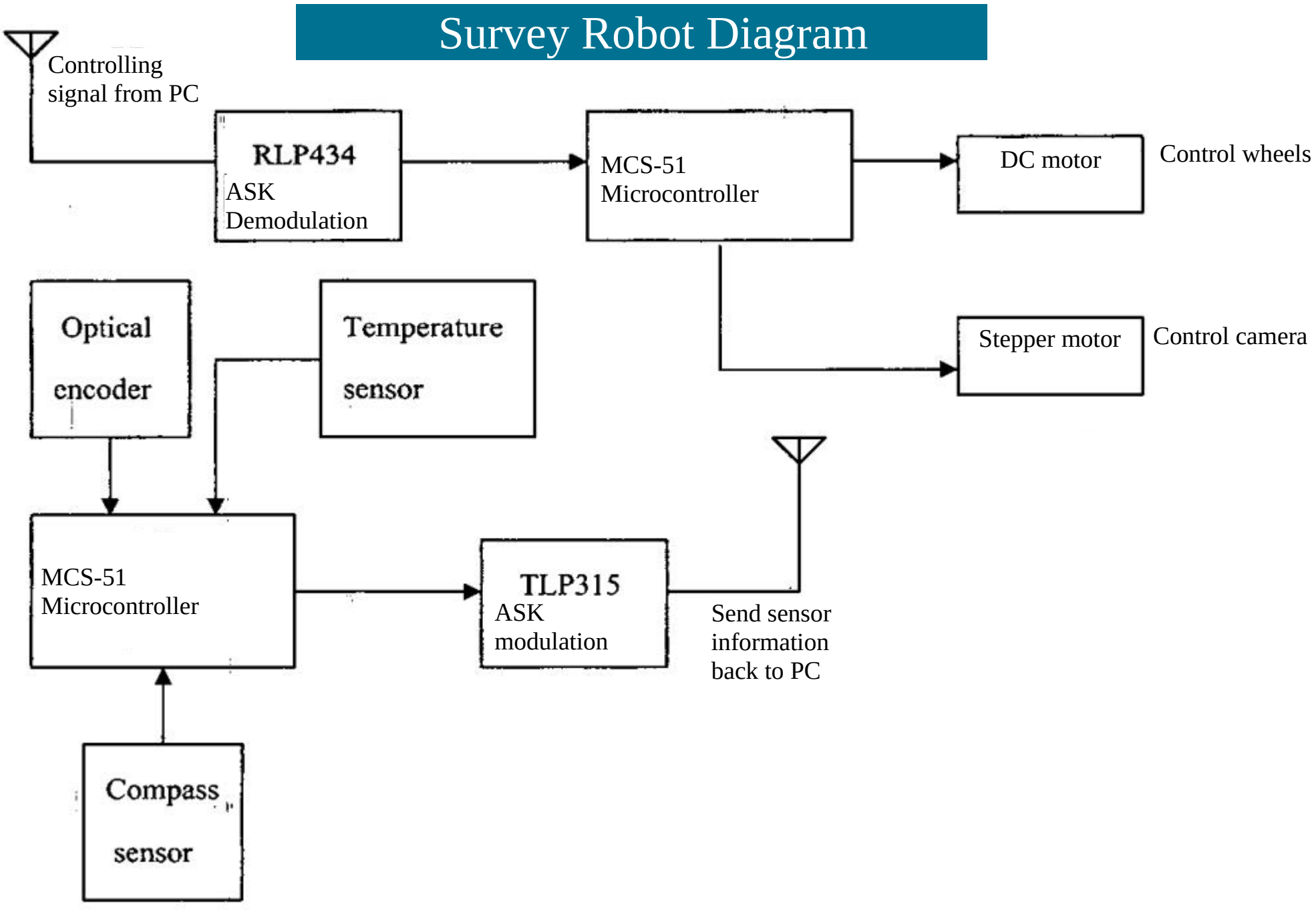
This survey robot can wirelessly control from computer using VB6 application. VB6 app can show real time video from camera installed at robot, show temperature from robot's temperature sensor, show robot's motion record by use data from robot wheel encoder and digital compass sensor. The camera's rotation also can control from VB6 application.



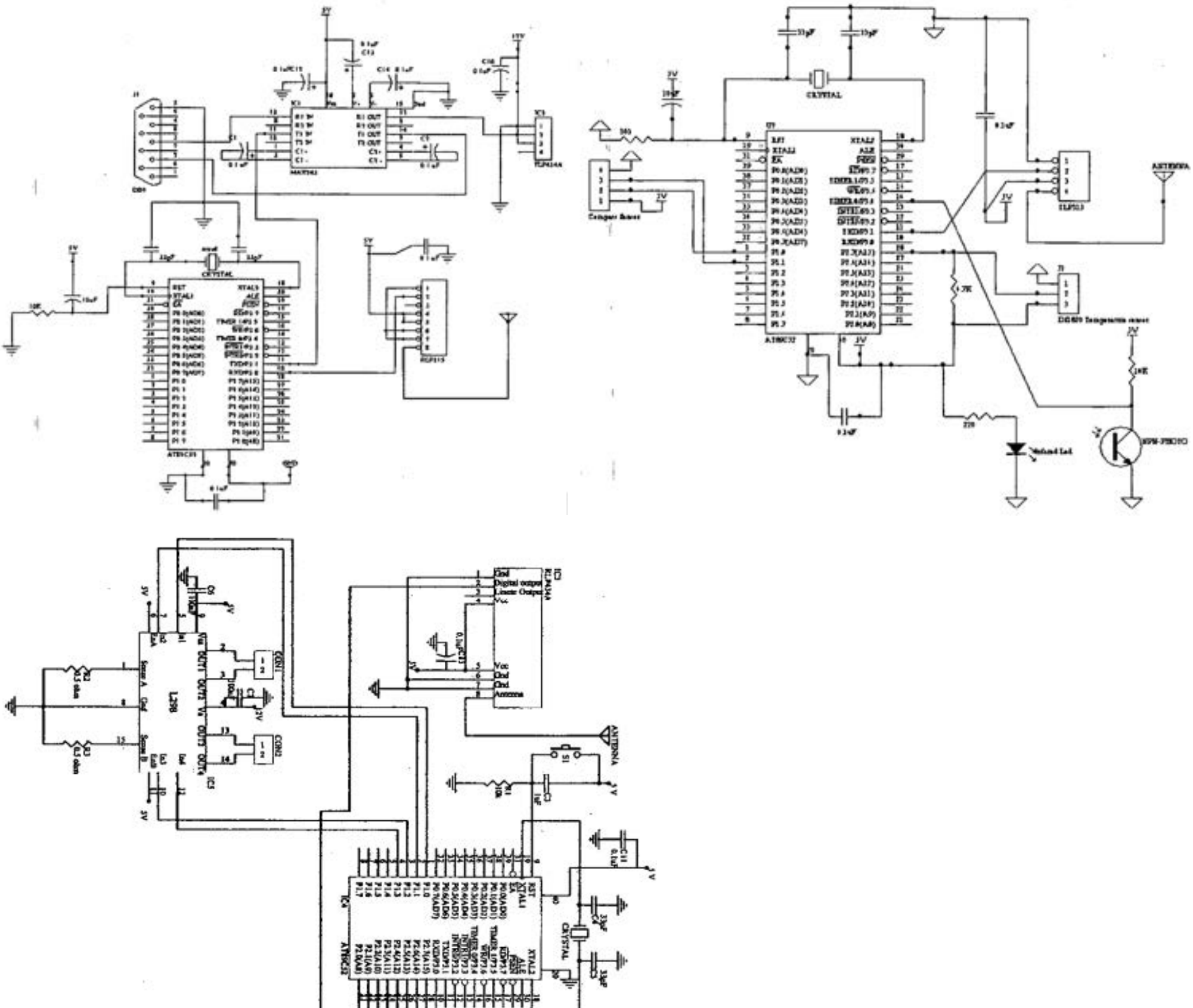
Controller Diagram



Survey Robot Diagram



Schematic


CRYSTAL
ANTENNA
L298
BATTERY
LM7805CV
DIODE
LED
ULN2003A
CON1
CON2
CON3
CON4

Example of assembly code

```
CAMERA_RIGHT:   CJNE A,#09H,HOME
                DJNZ R1,CONTI4
HOME:           LJMP WAIT
CONTI4:         MOV A,R5
                CLR C
                RRC A
                JNC NEXT4
                MOV A,#00001000B
NEXT4:          MOV R5,A
                MOV P2,R5
                ACALL DELAY_100ms
                AJMP CAMERA_RIGHT

DELAY_100ms:    MOV R7,#26
DELAY_100ms_1:  MOV R6,#0E6H
DELAY_100ms_2:  NOP
                NOP
```

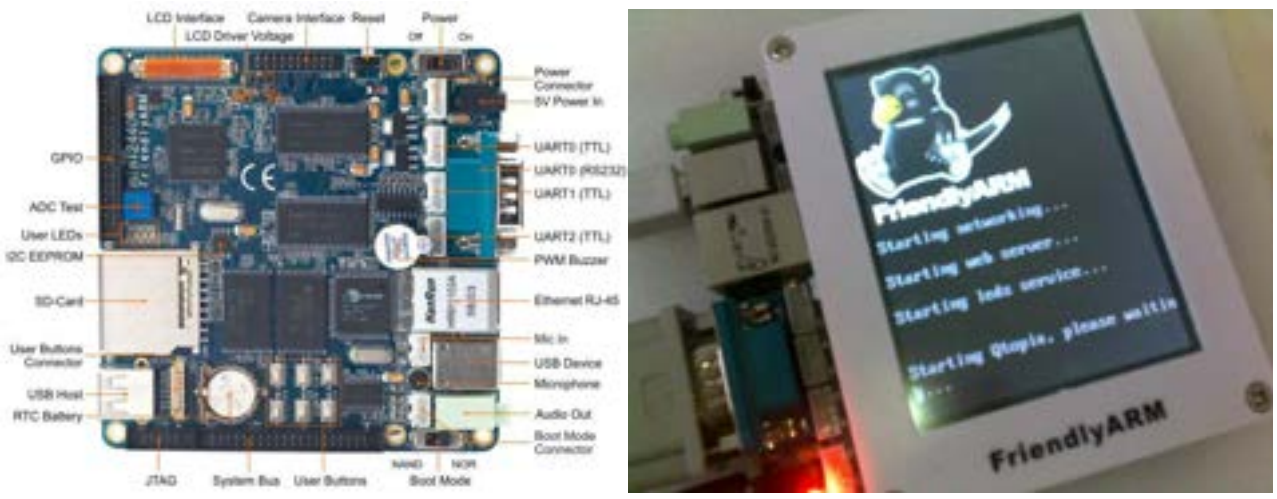
Example of VB6 code

```
Dim dataa(2)
 Dim dat(4)
Private Sub Command10_Click()
ezVidCap1.CaptureFile = txtAVI.Text
ezVidCap1.CaptureVideo
End Sub

Private Sub Command10_MouseDown(Button As Integer, Shift As Integer, X As Single, Y As Single)
Command10.BackColor = &HC0&
End Sub

Private Sub Command11_Click()
ezVidCap1.CaptureEnd
End Sub
```

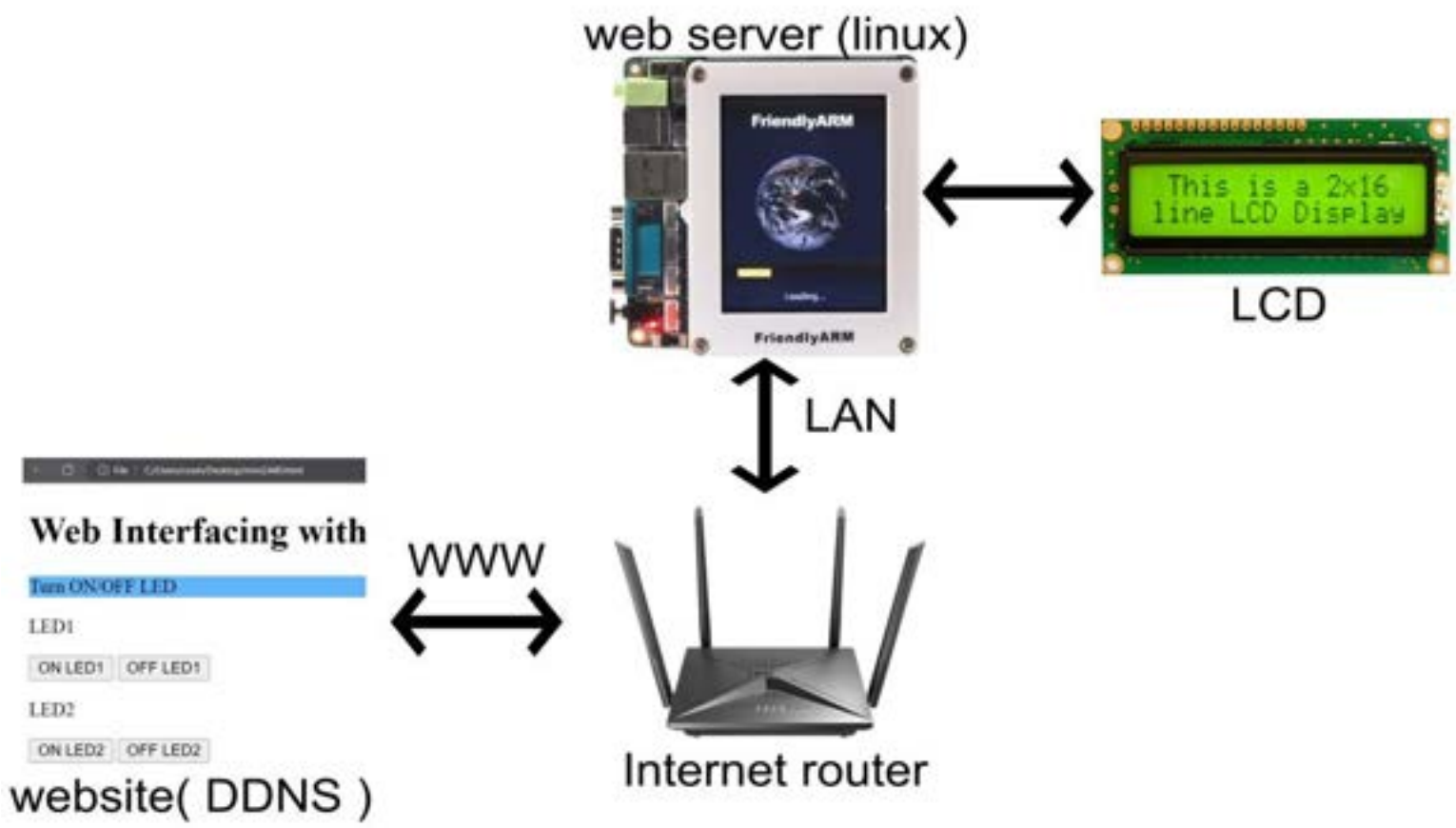
Simple Web Interfacing For Controlling Device Demo (Embedded Linux)

Software Tools and Programming Language ： C++, HTML, Linux Qtopia

This simple website can turn ON/OFF LED on linux board, read button status (button is pressed or not), send text from text box to LCD that connect with linux. Web server will use CGI to run script that using linux device driver to control its peripheral device.

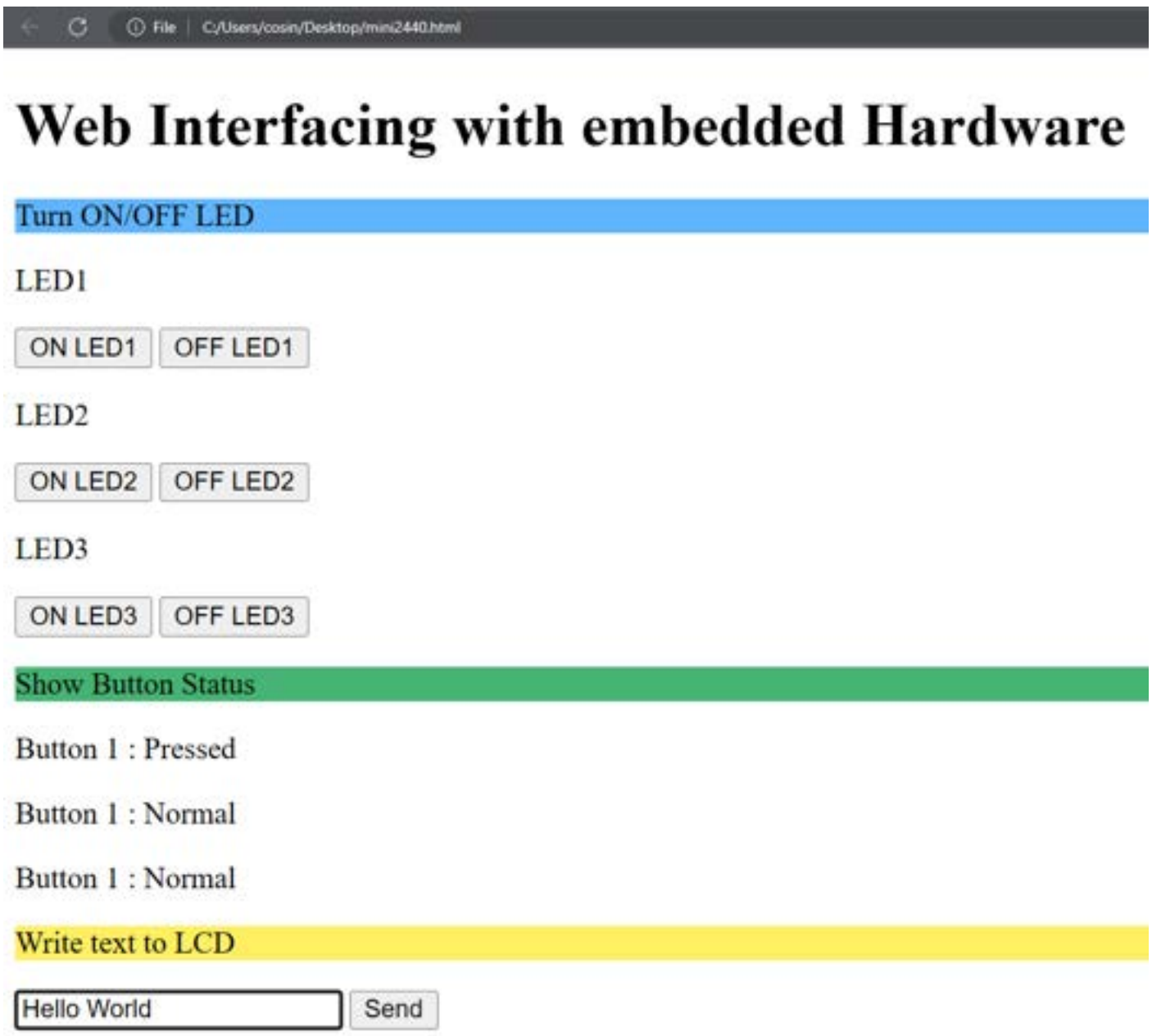


Mini2440 Board (ARM9 CPU, installed linux Qtopia)



System Diagram

Website



Example Of C++ Code

```c
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <sys/ioctl.h>

int main(int argc, char **argv)
{
    int on;
    int led_no;
    int fd;
    if (argc != 3 || sscanf(argv[1], "%d", &led_no) != 1 || sscanf(argv[2],"%d", &on) != 1 ||
        on < 0 || on > 1 || led_no < 0 || led_no > 3) {
        fprintf(stderr, "Usage: leds led_no 0|1\n");
        exit(1);
    }
    fd = open("/dev/leds0", 0);
    if (fd < 0) {
        fd = open("/dev/leds", 0);
    }
    if (fd < 0) {
        perror("open device leds");
        exit(1);
    }
    ioctl(fd, on, led_no);
    close(fd);
    return 0;
}
```