MY PORTFOLIO

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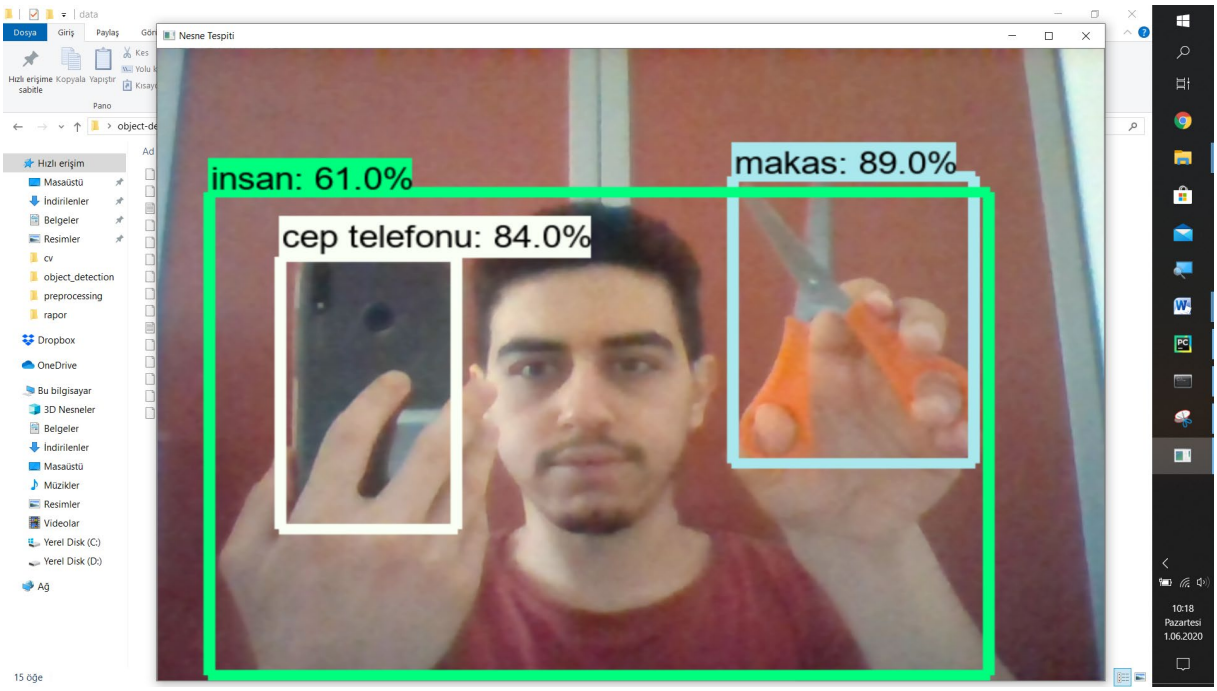
SOFTWARE PROJECTS

Python Based Projects:

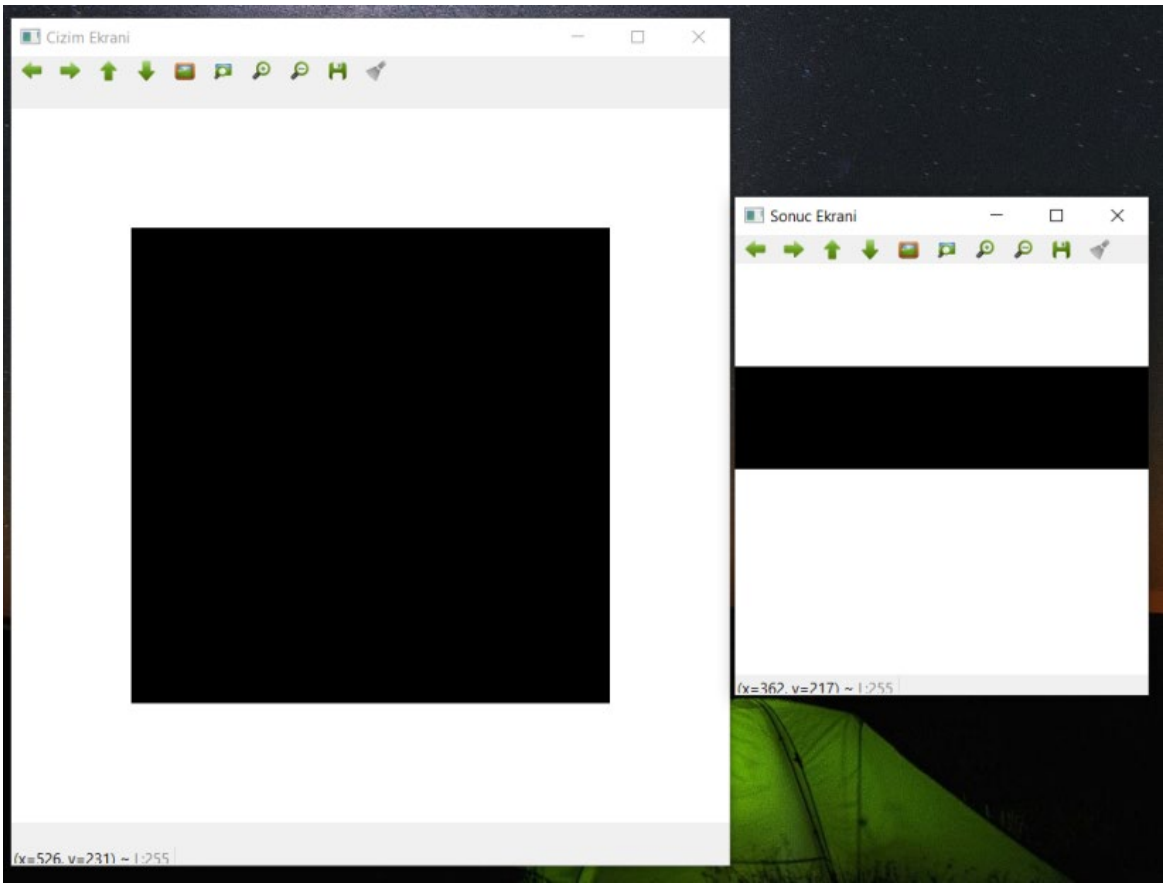
Object Detection On Webcam Via Tensorflow Object Detection API :

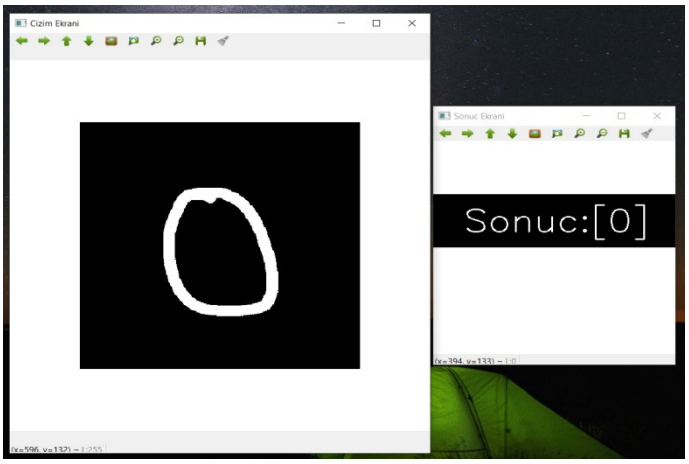
Tensorflow Object Detection API has been builded. An application developed that is able to capture images via webcam with Opencv Library. The app uses one of pre-trained neural nets provided by the API. The selected model trained with **COCO dataset**. It uses **Inception_v2 model as a classifier** and **SSD (Single Shot Detector) model as a detector**.



Hand-Written Digit Classification via MNIST Dataset :

An image classifier application is developed to classify hand-written digits. It uses a UI to let the user draw digits with mouse. UI composed of two separate windows. One window is providing a drawing surface to the user and the other one is showing the result. To be able to show these windows, Opencv library is used. This app uses deep learning technique for classification. Keras deep learning framework is used with MNIST dataset.

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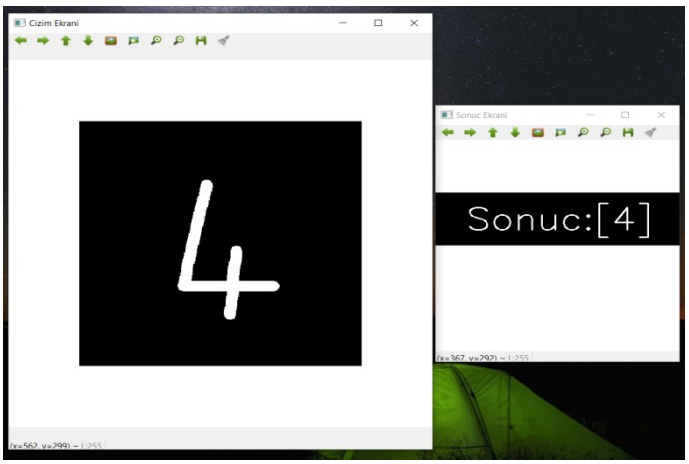
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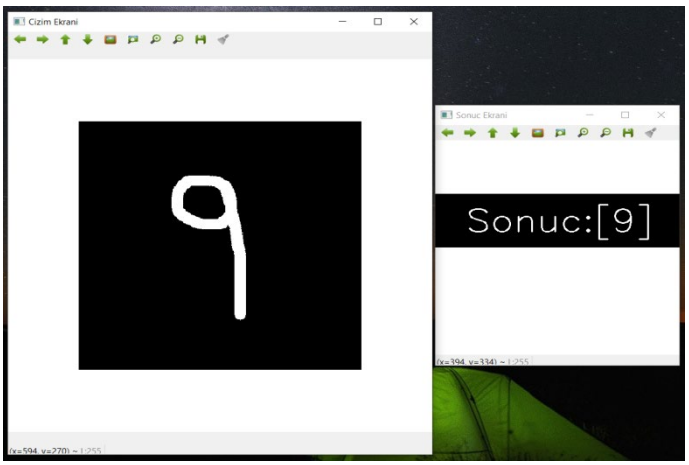
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C# Based Projects:

Car Rental App:

Car rental following app is using MS-SQL Database. It may make transactions like saving, updating,deleting data and showing them on a datagridview as well as printing the data. In toolbar there are some icons related to those.

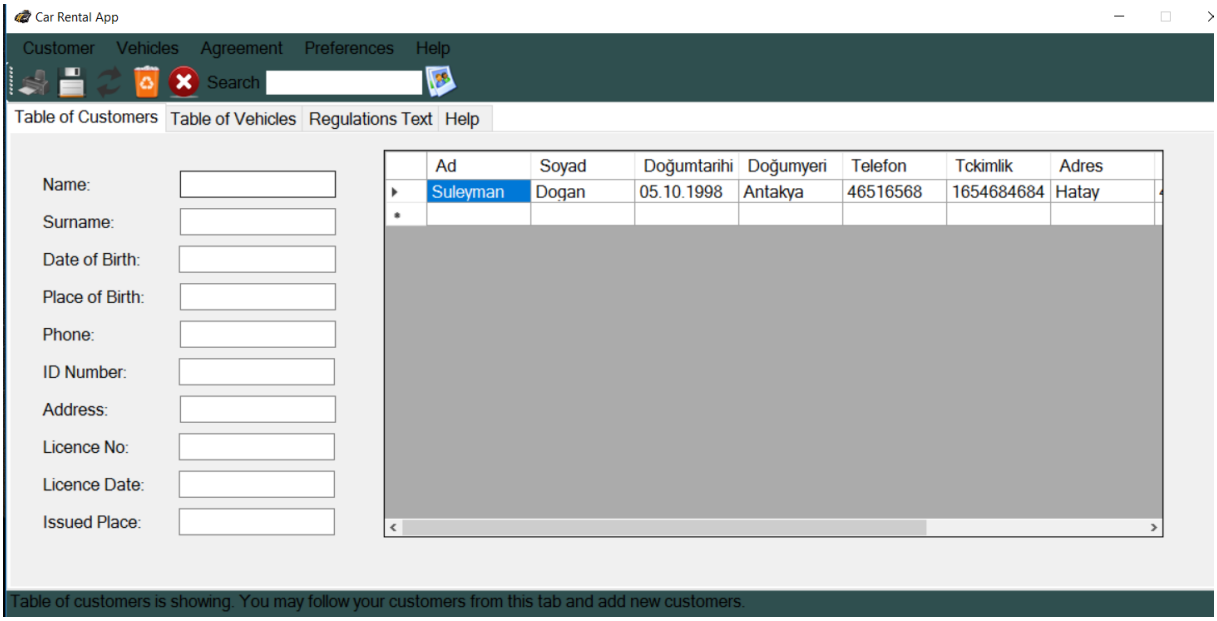
App has four sections controlled by tabcontrol object in C#. These are customers page, vehicles page , regulations page and help.

Customers page to follow status of customers.

Vehicles page to follow status of vehicles.

Regulations page shows a regulation text about car renting.

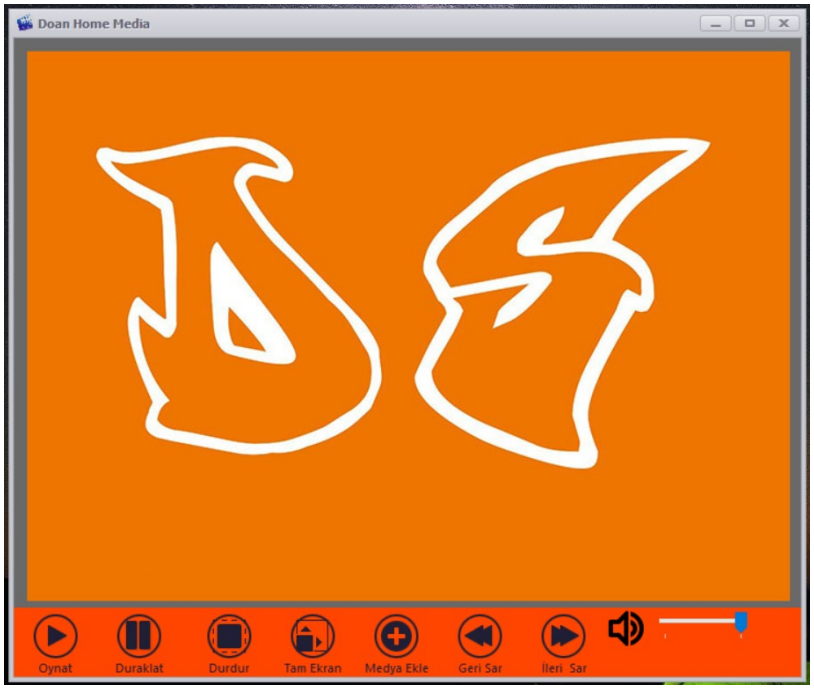
Help page shows a text about usage of application.



Media Player App:

Media player application is using windows media player library for playing media content and Dev-express UI tools for a better view.

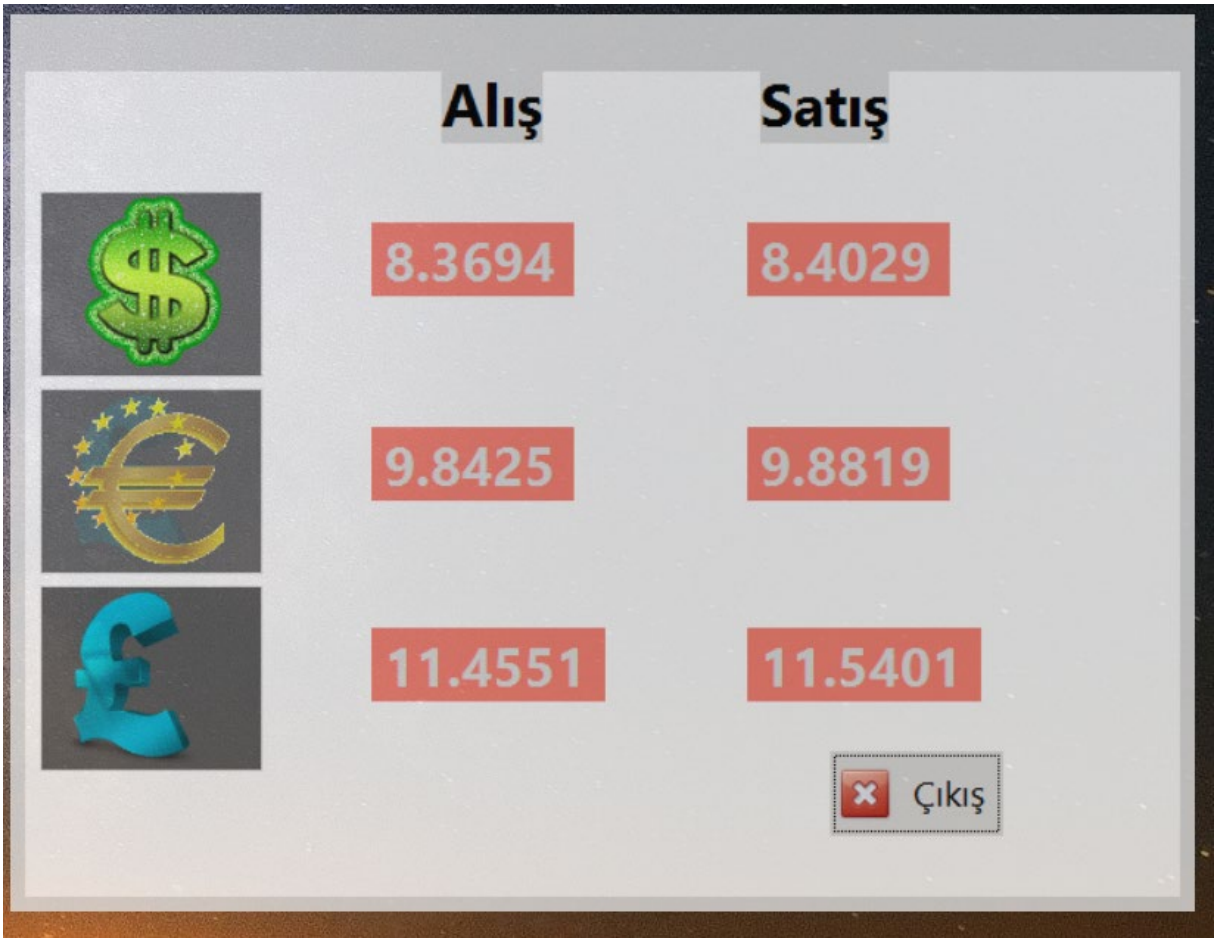
The color of the toolbar and background image changing randomly in loading step according to a predefined image set.



Currency Exchange App:

Currency exchange rate application is using web and xml technologies to get data from Central Bank of Turkey's website.

App shows the currency rates between TRY, USD EURO and GBP.



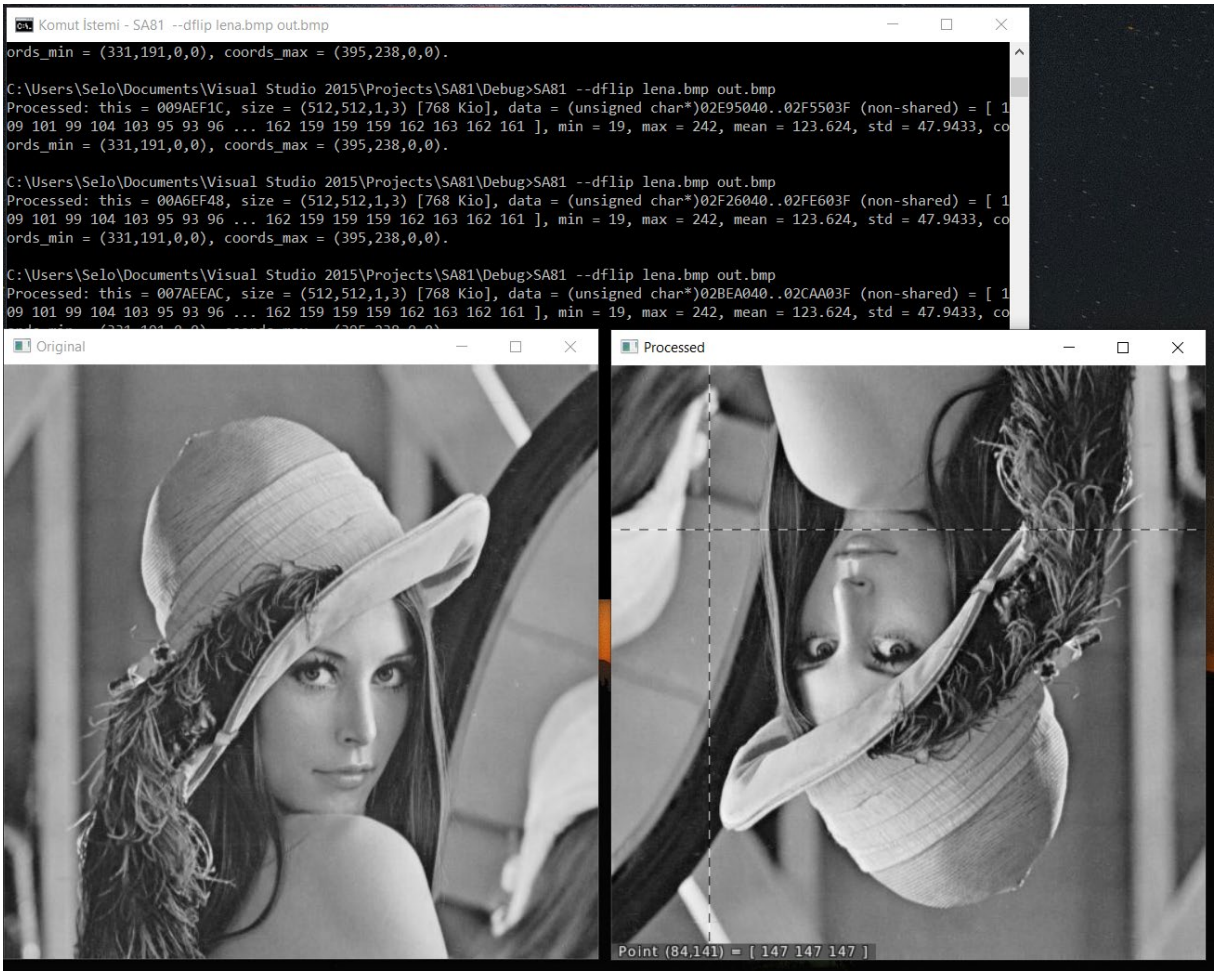
C++ Based Projects:

Image Processing App:

An image processing command line application that is able to implement following fundamental operations:

- Basic operations (Resizing,Rotation,Flipping,Negative, …)
- Histogram Equalization and Spatial Filtering(Laplacien,Convolution …)
- Basic Morphological Operations (Dilation,Erosion,Opening,Closing …)
- Frequency Domain Filtering (Low pass, High pass , Band pass …)

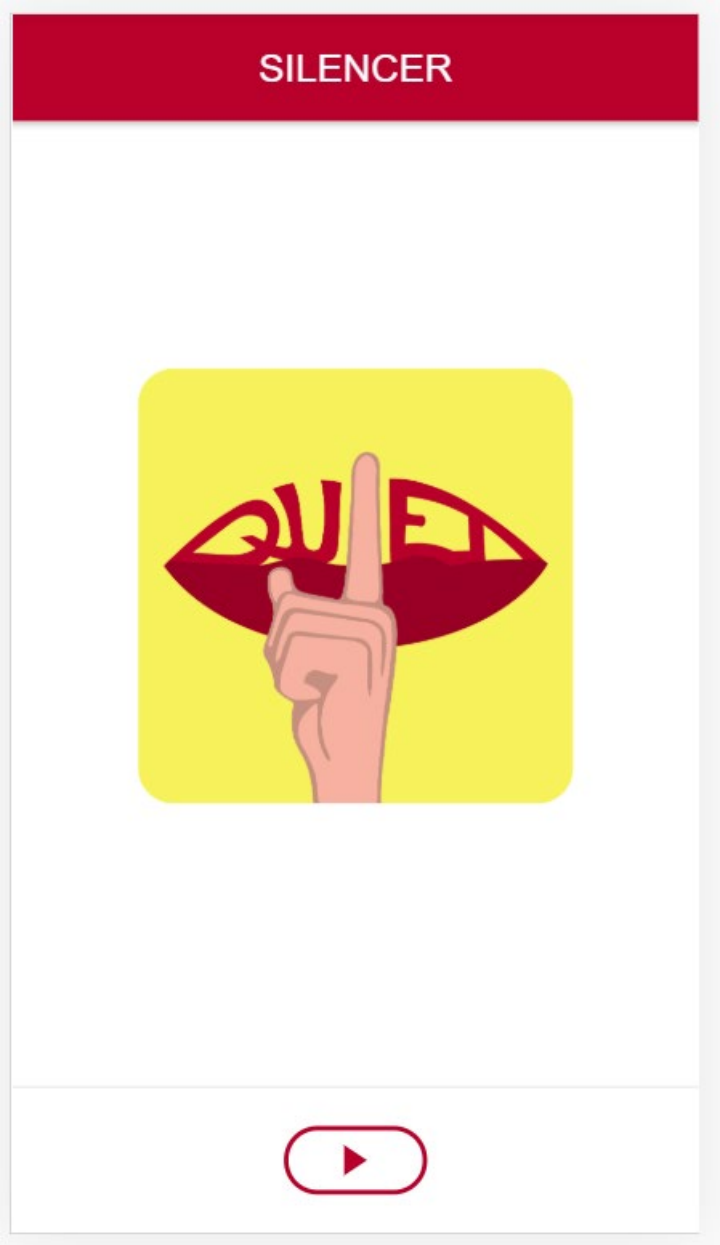
This app is developed from scratch to understand essential concepts of image processing. CImg library is used just for reading-writing images as well as showing the results.



Mobile Projects:

Quiet Phone Silencer App:

Quiet is an android based automatic phone silencer application.It detects user's location via GPS. If the user is in specified location then it makes the phone silent. This app is developed via Ionic framework. Client-side scripting is done with AngularJS.



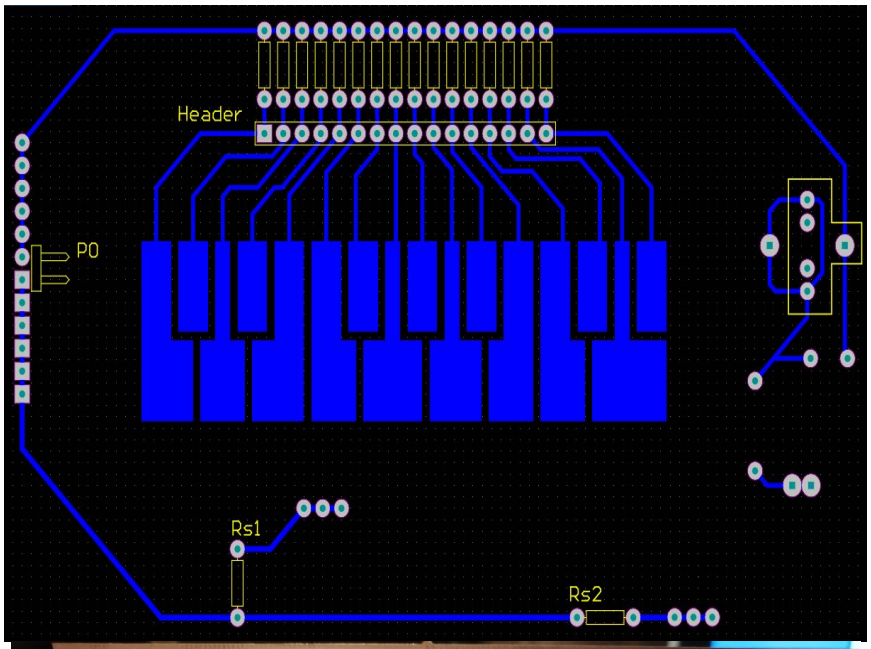
ELECTRONICS PROJECTS

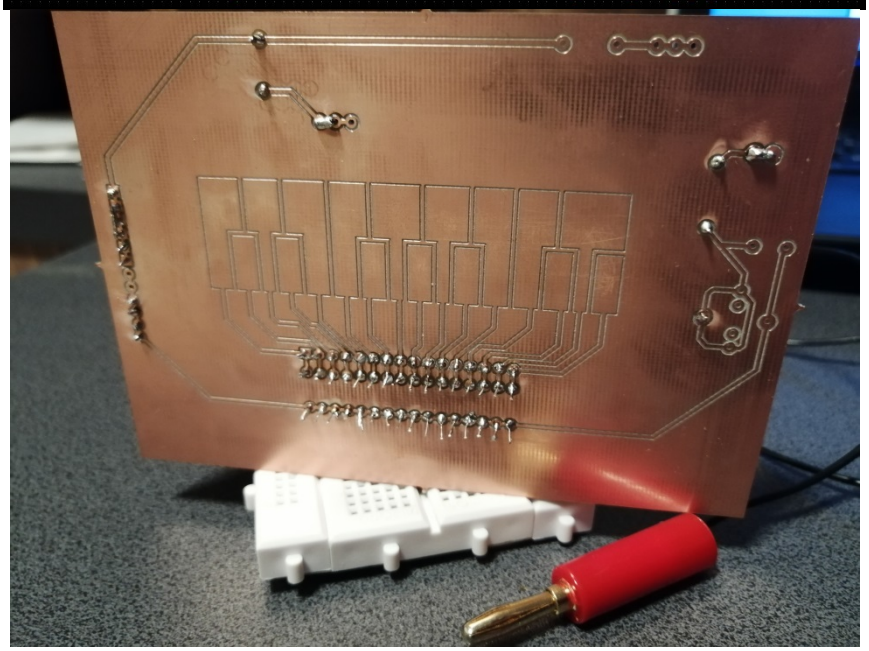
Microcontroller Based Electronic Music Production:

ATMega-328P MCU has been used to produce sounds electronically.

Specifications:

- Analog signals mimicked via PWM.
- Thanks to the Phase-correct PWM Mode, sound of four different musical instruments have been produced.
- Sinewave amplitude values calculated via FM (Frequency Modulation) and stored in arrays.
- Arrays traversed by interrupt routines and then the waveform has been produced via direct digital synthesis (DDS) method.
- A 16 Note Stylophone circuit designed on Altium Designer, as an input method.



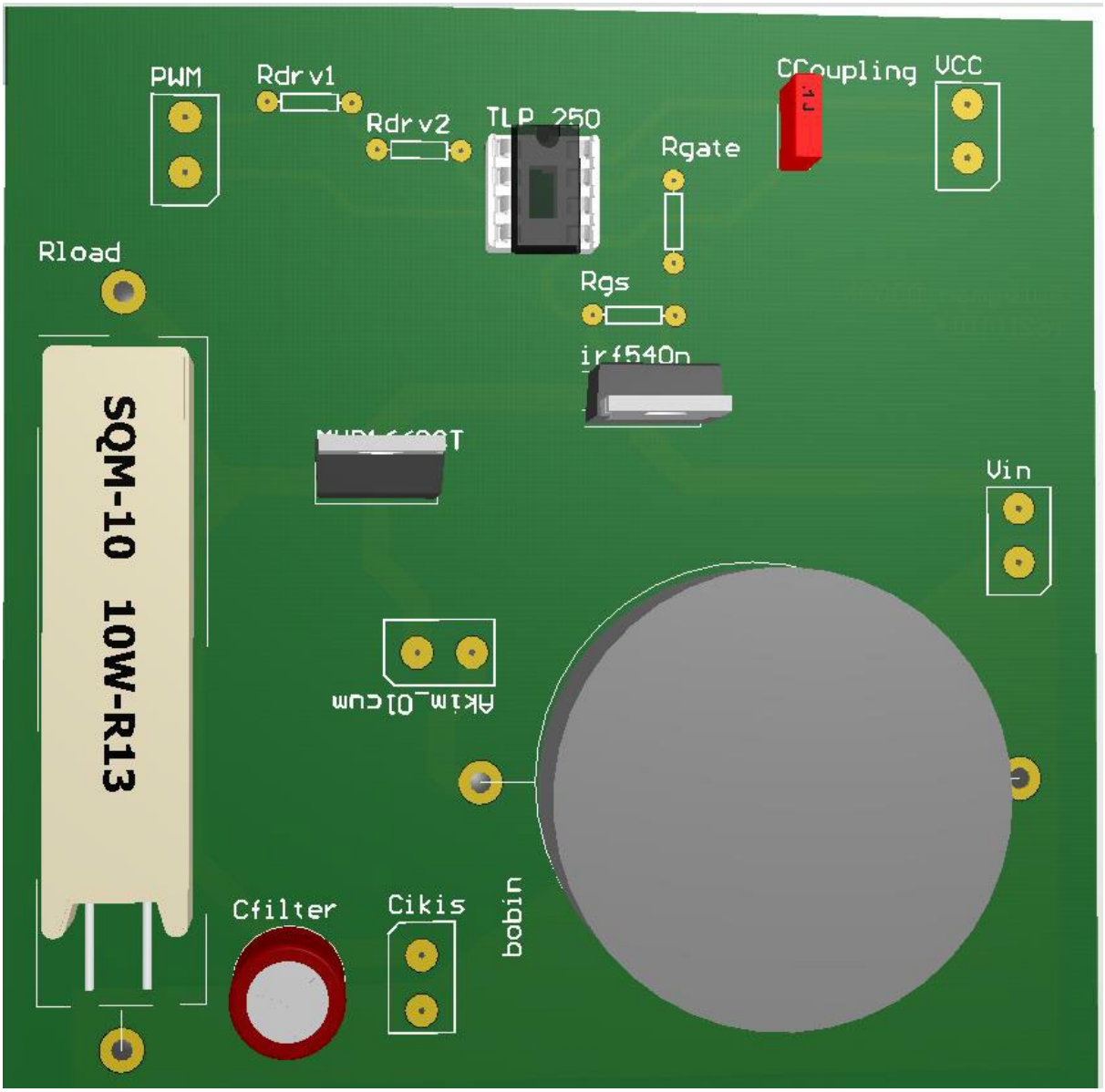


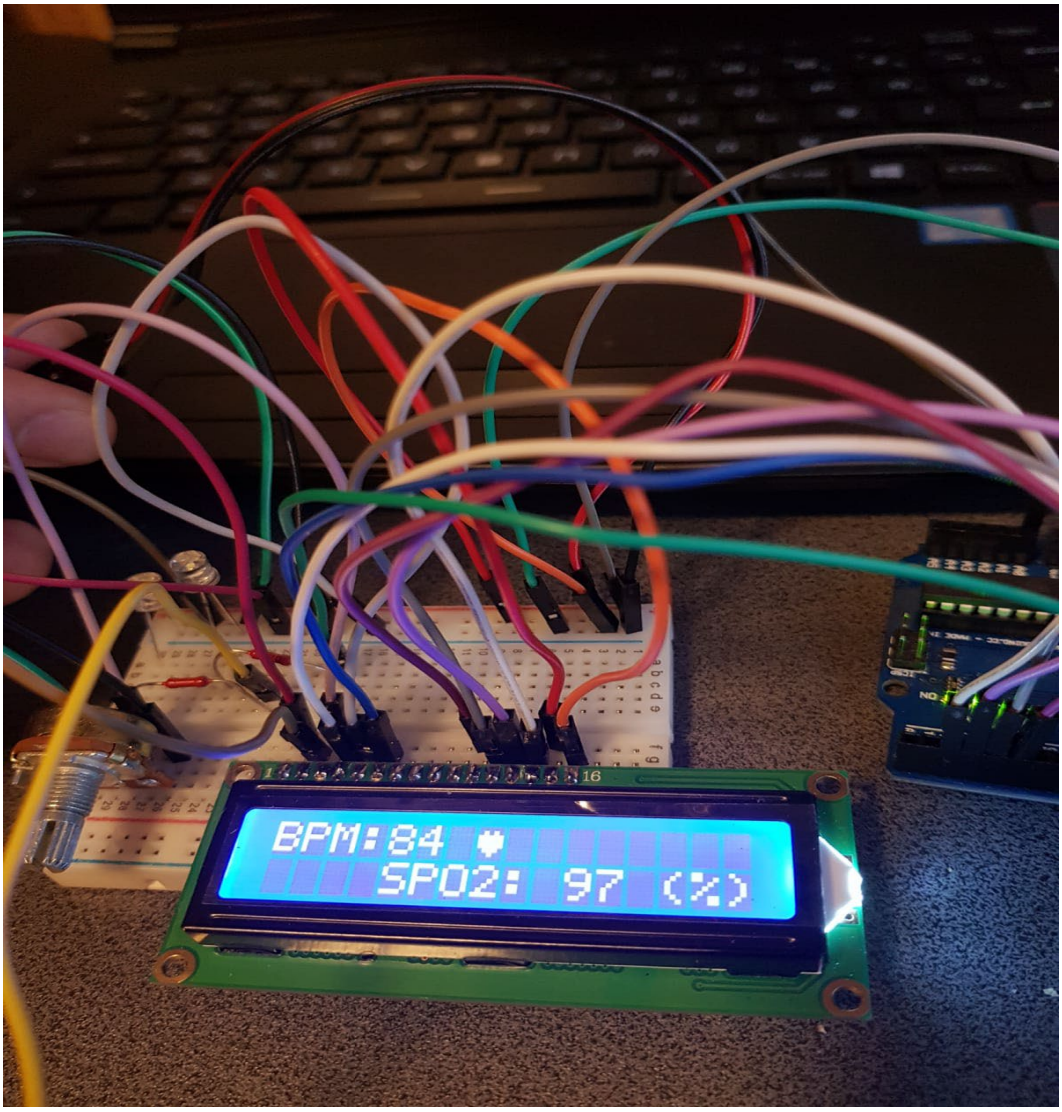
DC-DC Inverting Type Buck-Boost Converter Circuit:

Basic level dc-dc power converter has been designed and produced.

Specifications:

- It uses floating gate drive topology.
- TLP-250 mosfet driver IC has been used.
- Input Voltage is 12 Volts output voltage is varying between 5-18 Volts according to Duty Cycle.
- Designed on Altium Designer.



Arduino Based Pulse Meter:

Pulse Oximeter Sensor, Arduino Uno ,16x2 LCD used and produced an entry level pulse-meter device.Pulse Oximeter Sensor can measure the average pressure of veins on fingertip. With that info, the pulse value is calculated and then the Saturated Oxygen level of Blood is (SPO2) is estimated.