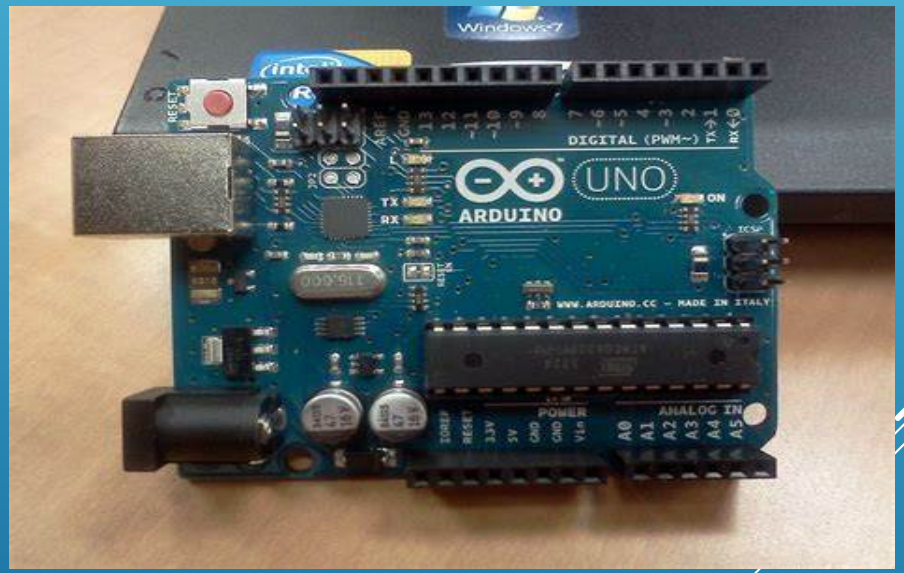
# REPORT FOR "TINKERCAD AND ARDUINO MODULE"

Name –Akshat Agarwal
Roll No- 22MI31002
Section-10
Group ID-
Date- 29/11/2022


TIN
KER
CAD


DIGITAL (PWM~)
UNO
ARDUINO
ON
POWER
ANALOG IN

# Abstract:

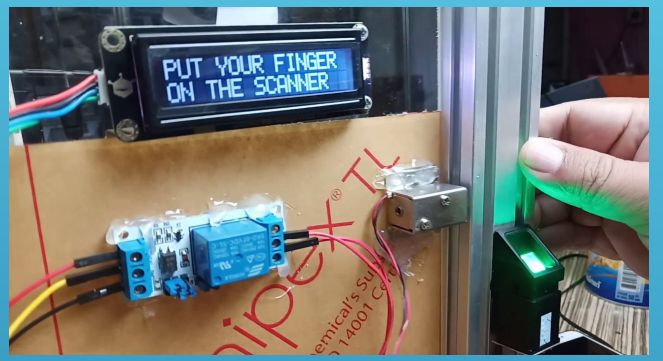

- The project gives us a vivid ground of opportunities to work with TinkerCad Interface and Arduino microprocessor Build-up.
- Working with Arduino was a phenomenal and a learning experience, we learnt how can we connect wires, technical devices, resistors and other circuital elements in different permutations and combinations to derive various outputs.
- TinkerCad software helped us with coding and virtual modelling of the project and we could manipulate the operations in the breadboard and other devices according to our convenience for desired outputs.
- We also got to know that the world of electricity ,processors, equipment is not limited to supplying household electricity but microprocessors and semiconductor chips fundamentals has its own vital applications in the technological world.
- Traffic light and Super Mario Game Background music project elevated our mindset to create various other implementations using the similar concept of Arduino Breadboard, miniature tools like resistors , short bulbs and Aluminium Alloy wires for a completely new connection of devices.
- We were introduced to computational development –cum-virtual robotic toolkit on TinkerCad platform where we were a given an overview of how the coding for microtechnology looks like.

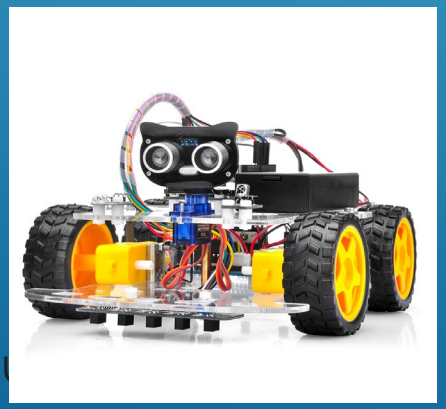
# Introduction

The TinkerCad can also be used for compliance of varios other projects such as-

- Arduino Fingerprint Door Lock.

The Fingerprint Scanner using an embedded system is yet another an excellent example of microtechnology. It is cost efficient from the fact that it consumes less electricity and the code can be manipulated as per our requisites for optimum outcomes. It is easy to make and use.



- Arduino Robot Car

The robot car introduces the user to various organisational and designing methodologies involved while making a car and that too from the very basic level of car-building and it gives a really clear and exalted understanding of assembling a car without spending a bulky amount to learn mechanics and modulation of a car.

# Utilities of TinkerCad and other Software-Embedded Systems

TinkerCad and many other Software-embedded Systems are really providential and should be used as substitutes for many other software on the web. TinkerCad not only helps the user in completing the project or his topic of work but also exposes him to the various privileges and functions in the sphere of microtechnology.

The user can excavate various routes toward the scrumptious and satiable fulfilment of what the modern technology is demanding in a much user-benifitial and  cost-efficient manner.

The user can as well get a detailed  understanding of virtual operations instead of directly falling to work with physical pieces and machines.

The coding antique of a user is also fostered and taken care of while working on such interfaces.

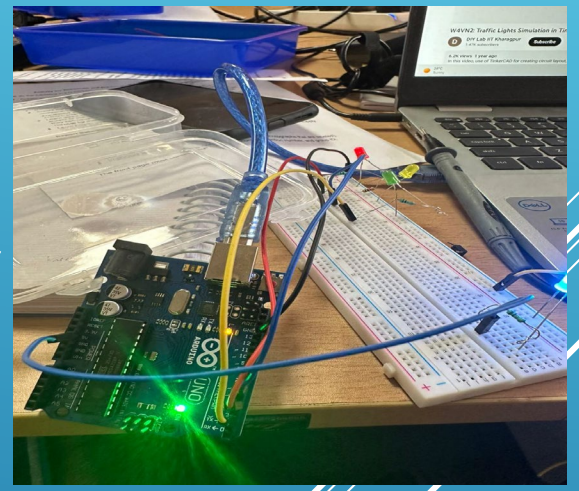
The operations in such softwares are not  only limited to electrical microtechnology but also one can use it for school projects , designing,learning and multiplying his skills.

The user-friendly template of these platforms helps the user to quickly grasp the concepts and gives them a quality experience of knowing.

# TinkerCad

Circuit Requirements: There were two circuits:

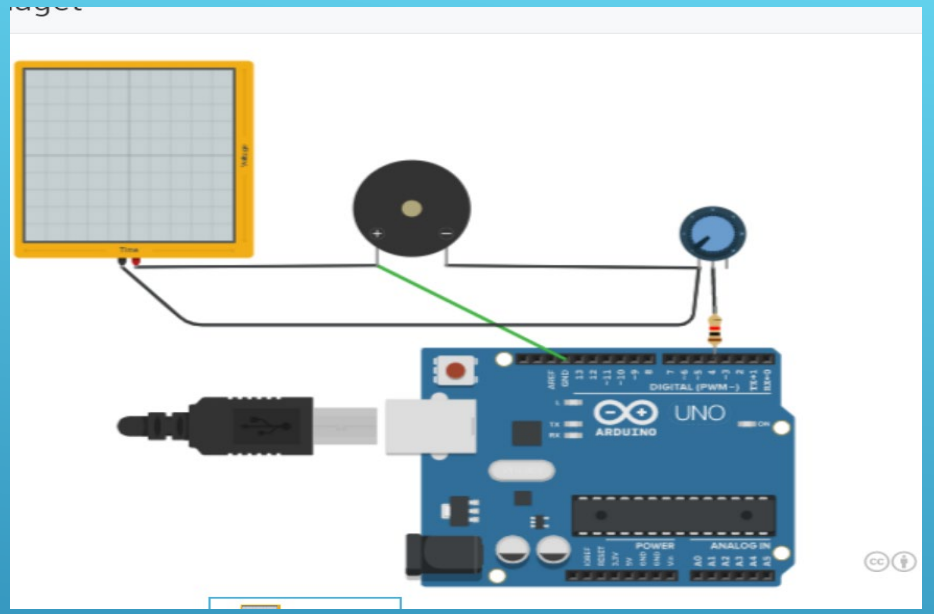
- Traffic Light : The main objective was to get a real life-like experience of working of the traffic lights. It was intended for the traffic lights to blink simultaneously after a time gap of 2seconds(order- red, yellow ,green ,blue. The Voltmeter, Ammeter and the oscilloscope were required to give the appropriate readings of current -voltage –resistance Synchronised pulsations when the button was pressed.

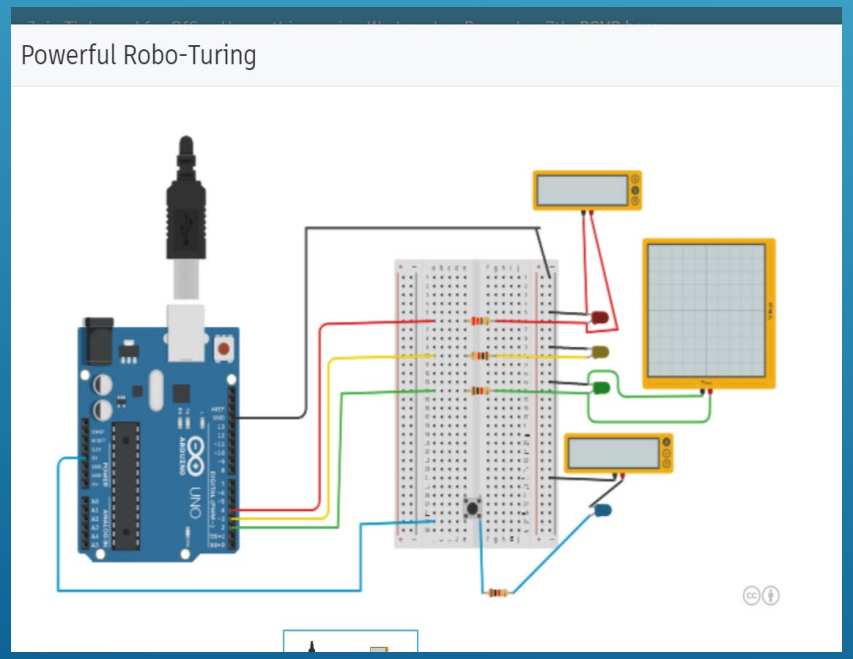


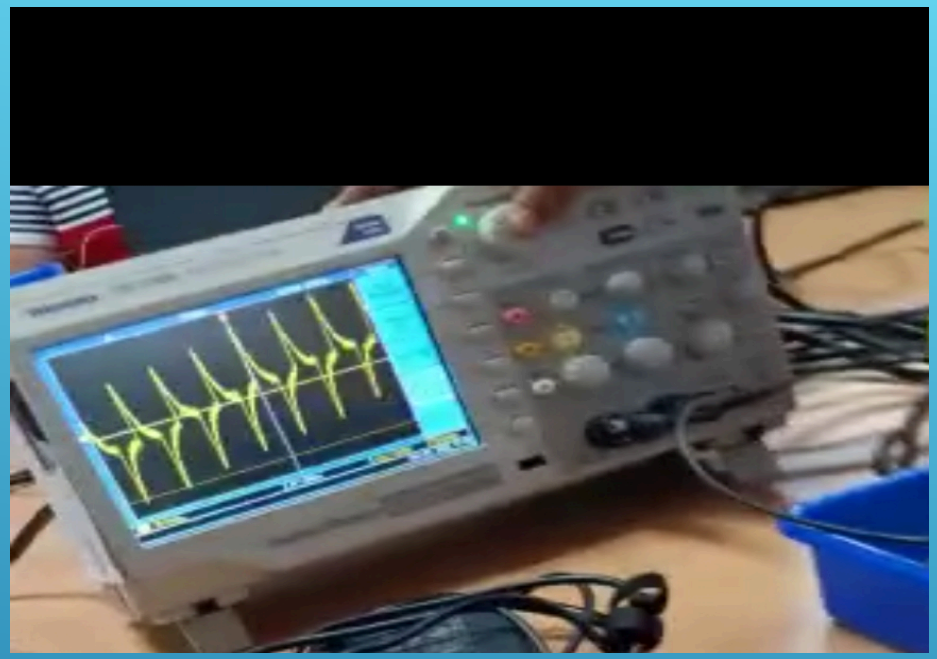
- Mario Background Music : The main aim was to get the similar background music through the brass chip speaker as the sound plays in the famous game “The super mario.”

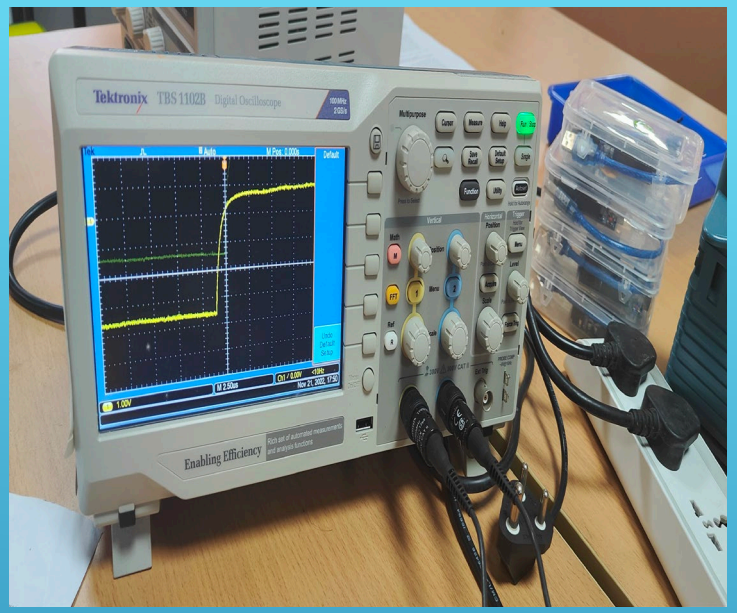
Parts used in the circuits:

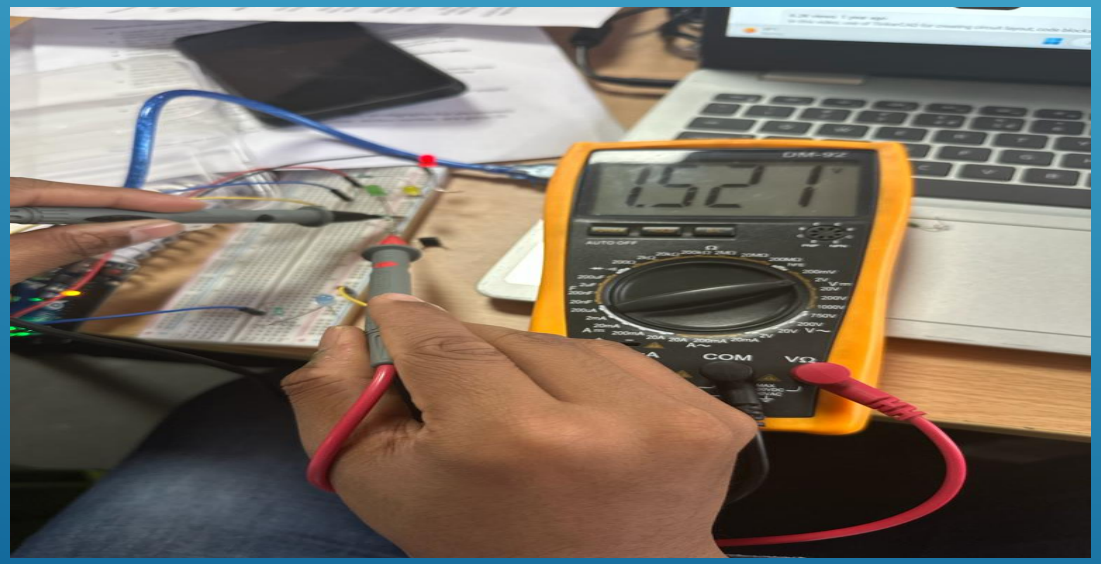
- Breadboard
- Resistors
- Micro bulbs
- Oscilloscope
- Potentiometer
- Multimeter





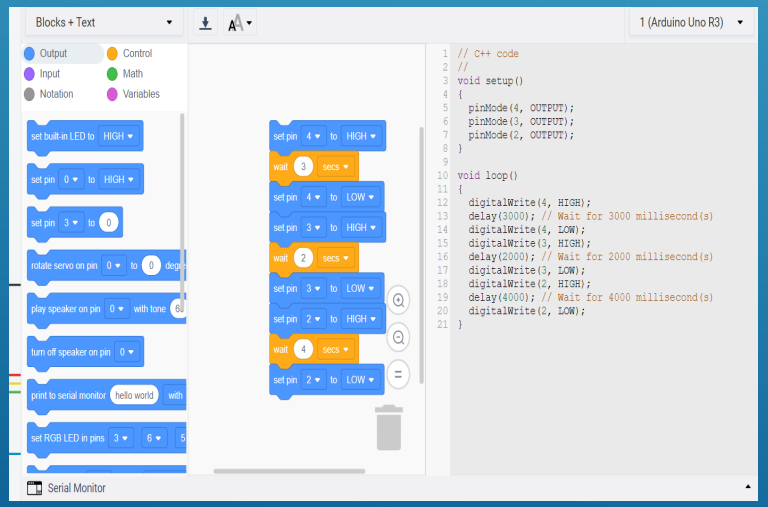

Tektronix
TBS 1102B
Digital Oscilloscope
Enabling Efficiency

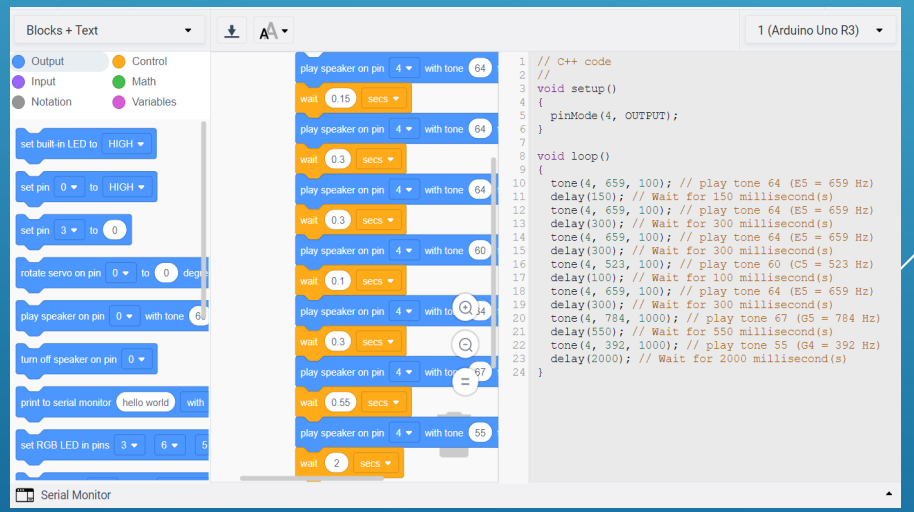

1.521
COM

# Arduino

On the Arduino IDE, we develop our code both with blocks and texts for the full-fledged compilation of our design both in the virtual and real format. Arduino provides us with its compiler as well as the interpretor to generate the code.

The algorithm is designed in such a way that every command is operated in a harmonious manner. Here is a depiction of the code used in the Traffic Light and Mario Background music.



# References


- Arduino IDE
- www.TinkerCad.com
- Diy project Kharagpur(Youtube channel)
- Boombin web(Image Extracts)

# Declaration

"I confirm that all content in this report is my own and that I have not copied this from a friend/classmate/online site or any other location."

Signed by-

_____

**********