Experiment1.3

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Section/Group: DM-612-B
Semester: 06
Date of Performance:06/03/23
Subject Name: IOT LAB
Subject Code:20CSP-358

1. Aim:

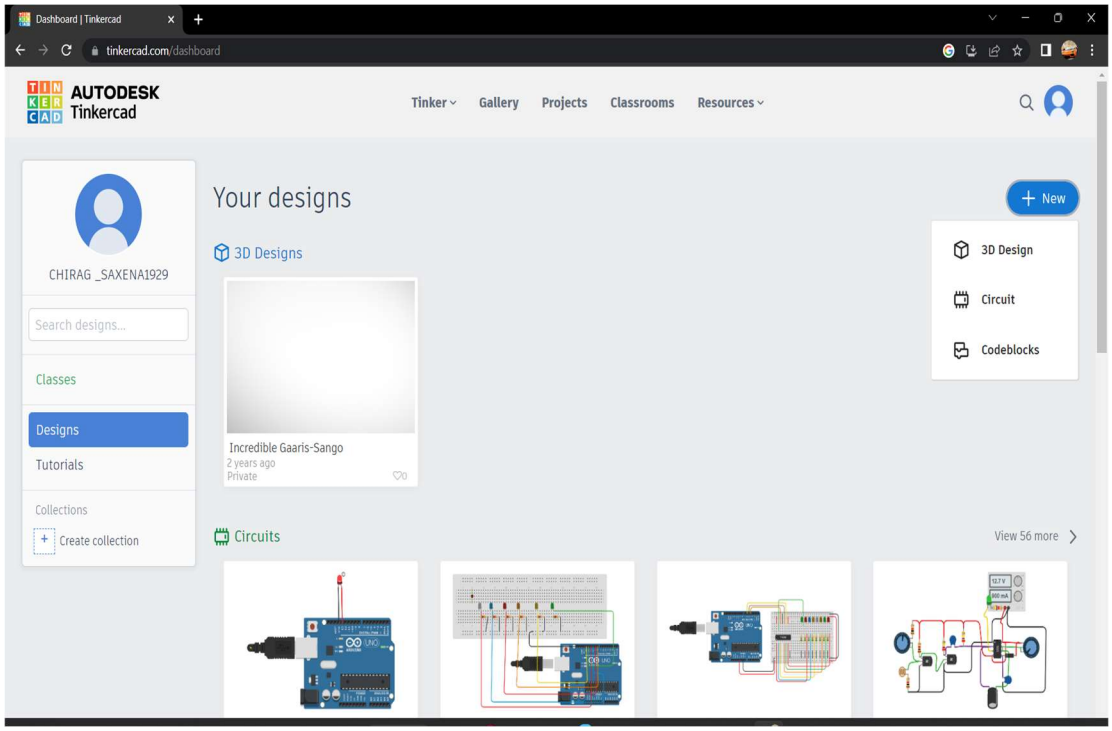
Demonstration of Autodesk Tinkercad Simulation Platform.

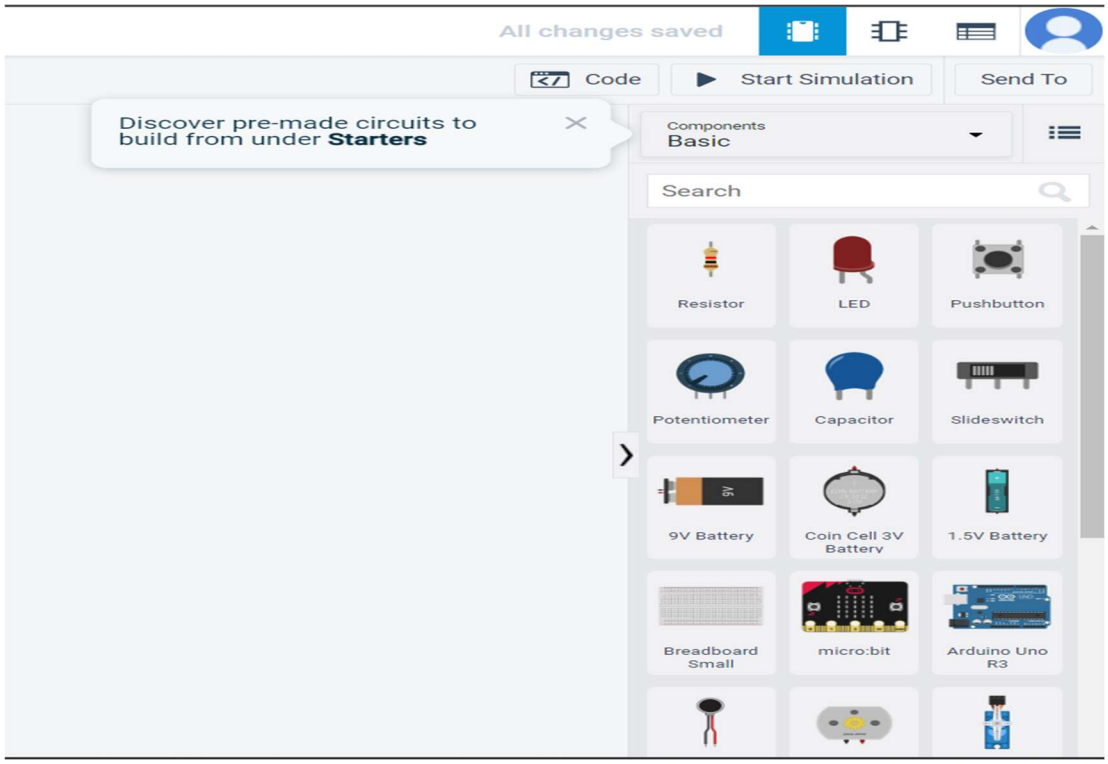
2. Objective:

1. Learn about IoT based simulations.
2. Testing and model in IoT based simulation platform.

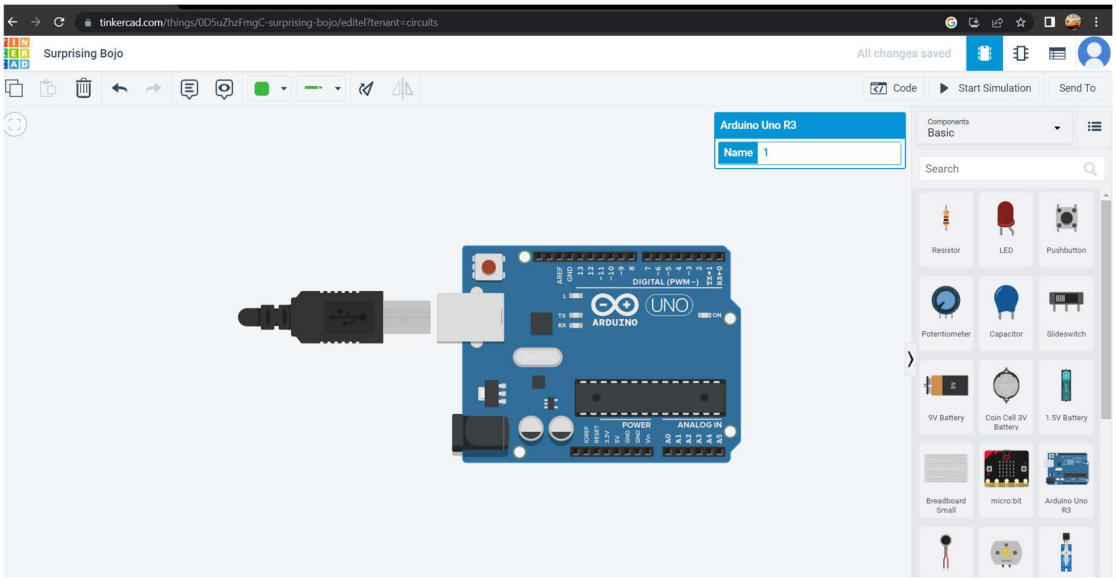
3. Script and Output:

Tinkercad - https://www.tinkercad.com is an excellent tool that allows you to simulate Arduino-based systems (and a lot more). You can (perhaps you SHOULD) simulate all exercises and even your own designs before trying them on real hardware. It also allows you to do programming using blocks. You can download / copy-paste the generated code later into Arduino IDE to program the real Arduino board, rather than having to write it from scratch. Create a new personal account on Tinkercad website (you can also use your Google account to log in). Then select Circuits on the left pane, and click Create new Circuit.


Dashboard | Tinkercad
tinkercad.com/dashboard
AUTODESK Tinkercad
Tinker
Gallery
Projects
Classrooms
Resources
CHIRAG _SAXENA1929
Search designs...
Classes
Designs
Tutorials
Collections
Create collection
Your designs
New
3D Design
Circuit
Codeblocks
3D Designs
Incredible Gaaris-Sango
2 years ago
Private
Circuits
View 56 more


All changes saved
Code
Start Simulation
Send To
Discover pre-made circuits to build from under Starters
Components
Basic
Search
Resistor
LED
Pushbutton
Potentiometer
Capacitor
Slideswitch
9V Battery
Coin Cell 3V Battery
1.5V Battery
Breadboard Small
micro:bit
Arduino Uno R3

You can rotate it to portrait mode if you wish, which will allow more space for other components to be added. You can add more components and wire them up as desired. Clicking on the lead of a component allows you to start a connecting wire from there. Clicking on a wire allows you to change its color.



Programming and Simulation

To program the Arduino,

1. Click on Code
2. You can choose Blocks or Blocks+Text or Text*. For beginners, it is recommended to

use Blocks + Text.

a. This allows you to see the C++ code generated corresponding to your blocks.

b. You can copy this code later into Arduino IDE to program the real Arduino, rather than having to write it from scratch.

c. You can also download the code as an Arduino-compatible .ino file.

3. You can code by selecting the blocks and connecting them appropriately.

4. You can start the simulation by clicking Start Simulation.
*Note: You can go between Blocks and Blocks+Text anytime. You can go from Blocks /
Blocks+Text to Text, but you can't go back from Text to either of the other two (converting
blocks to text is easy, converting text to blocks is computationally non-trivial).