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Vellore Institute of Technology

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Fall 2020-21

ECE3501 - IoT FundamentalsProject Report

TITLE

Voice Controlled Home Automation using Proteus

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Introduction:

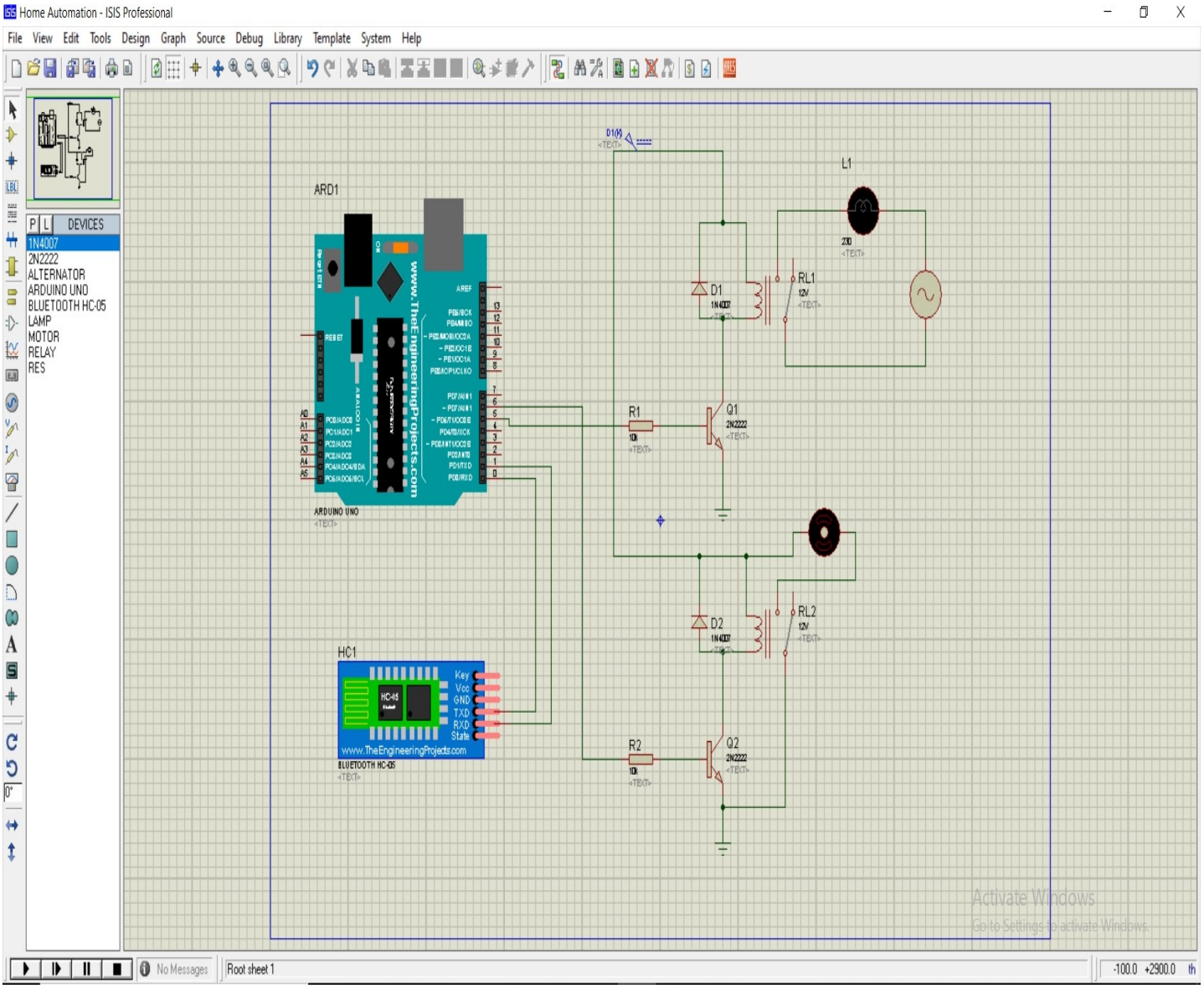
In recent years there has been an increase in smart home technology. Home automation has become the new trend. It allows us to control all our home appliances (lights, fans, thermostat, TV, security cameras) by connecting them to a common remotely controllable network making it much more accessible and convenient. And, while it brings home management to a whole new level, it also helps to maximize home security.

There are many types of Home Automation Systems. Power Line Home Automation Systems (using existing power lines in home automation), Wired Home Automation Systems (installing a wired system that connects into a control center),and Wireless Home Automation Systems (the most popular choice, home automation using wireless technology like Wi-Fi,Bluetooth, and internet).

Components Required:

1. Arduino UNO
2. Bluetooth HC-05
3. BJT Transistor(BC-547)
4. Relay
5. Motor(As Fan)
6. Bulb(As Tube Light)
7. Resistors
8. Diodes(IN4007)
9. Kodular software for implementing the code for appcreation

Circuit Diagram:



NOTE:

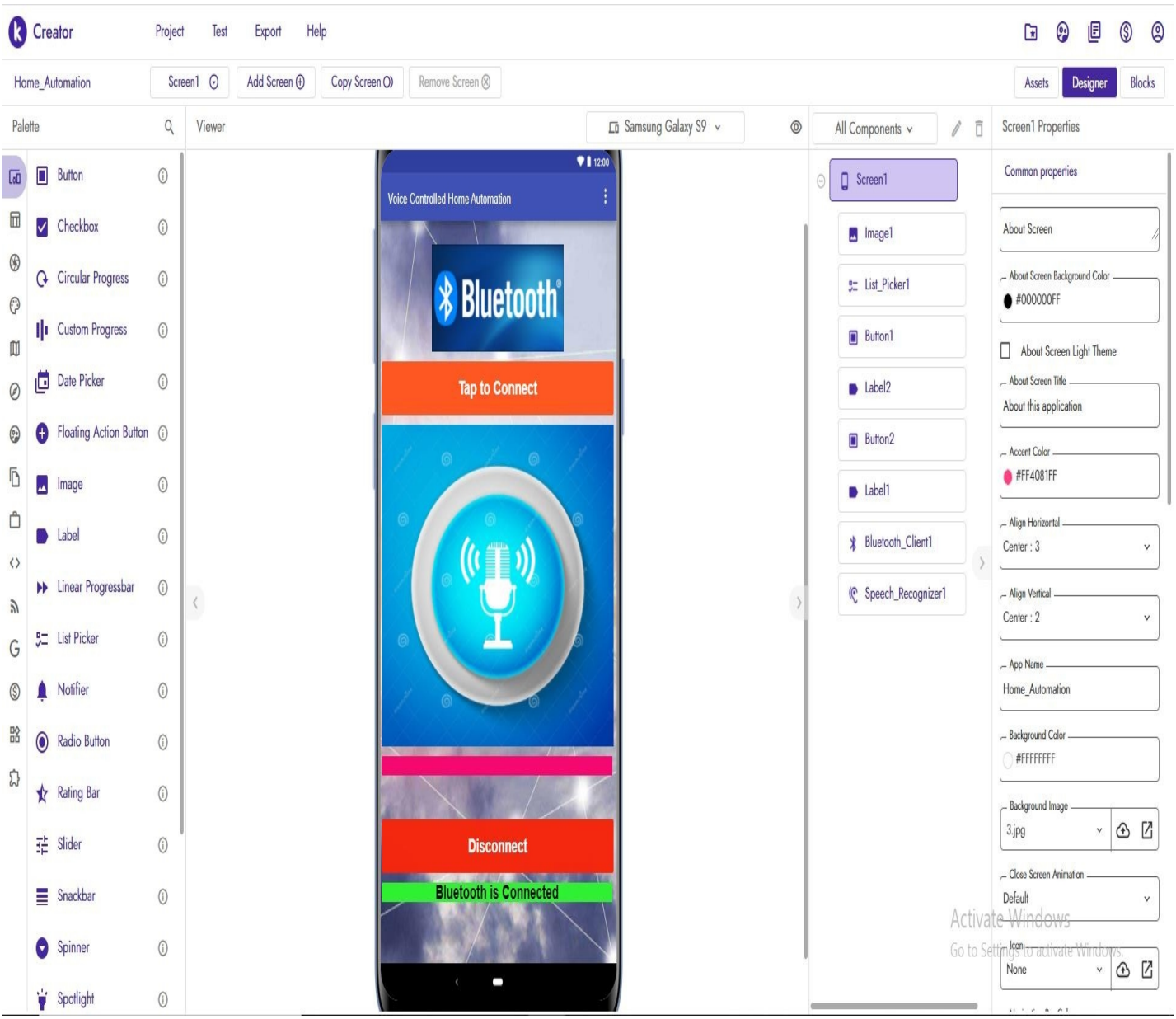
We need to make sure that Bluetooth Module Port should match with the Bluetooth port in Laptop.
The hex file of theArduino code should be placed in the Arduino module.

Arduino Code:

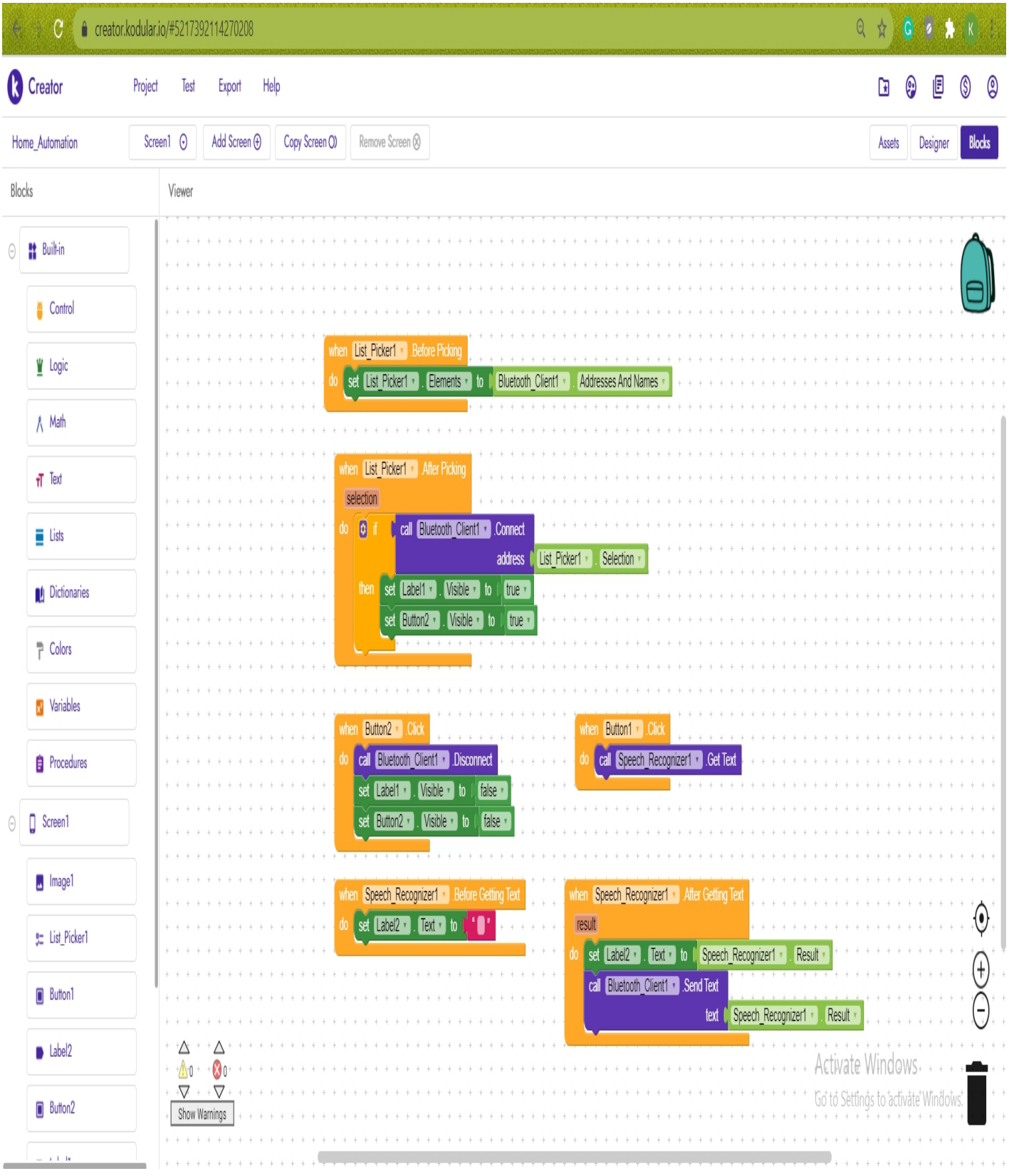
```
String readString;void setup()
{
  // put your setup code here, to run once:Serial.begin(9600);
  pinMode(6,OUTPUT);
  pinMode(5,OUTPUT);
}
void loop() {
  // put your main code here, to run repeatedly:while(Serial.available()){
    delay(3);
    char c = Serial.read();
    readString+=c;
  }

  if(0 < readString.length())
  {
    Serial.println(readString);
```

```
    if(readString == "turn on light")
    { digitalWrite(5, HIGH);}

    else if(readString == "turn off light")
    { digitalWrite(5, LOW);}

    else if(readString == "turn on fan")
    { digitalWrite(6, HIGH);}

    else if(readString == "turn off fan")
    { digitalWrite(6,LOW);}

    else if(readString == "turn on all")
    { digitalWrite(6, HIGH);
      digitalWrite(5, HIGH);
    }
    else if(readString == "turn off all")
    { digitalWrite(6, LOW);
      digitalWrite(5, LOW);

    }
    readString="";
  }
}
```

Kodular app Schematic:



Code blocks in Kodular:



Project Simulation: https://photos.app.goo.gl/DWxr5Y3rSzWEKwLh6

The above video is the Simulation video of our project.

References: https://www.youtube.com/watch?v=Kz8hKM4lnFk

https://www.electronicshub.org/voice-activated-home-automation/

Conclusion:

We have successfully created a home automation app to controlthe home appliances through voice.