



VIT[®]

Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

Fall 2020-21

ECE3501 - IoT Fundamentals Project Report

TITLE

Voice Controlled Home Automation using Proteus

Team Members

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Faculty

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Introduction:

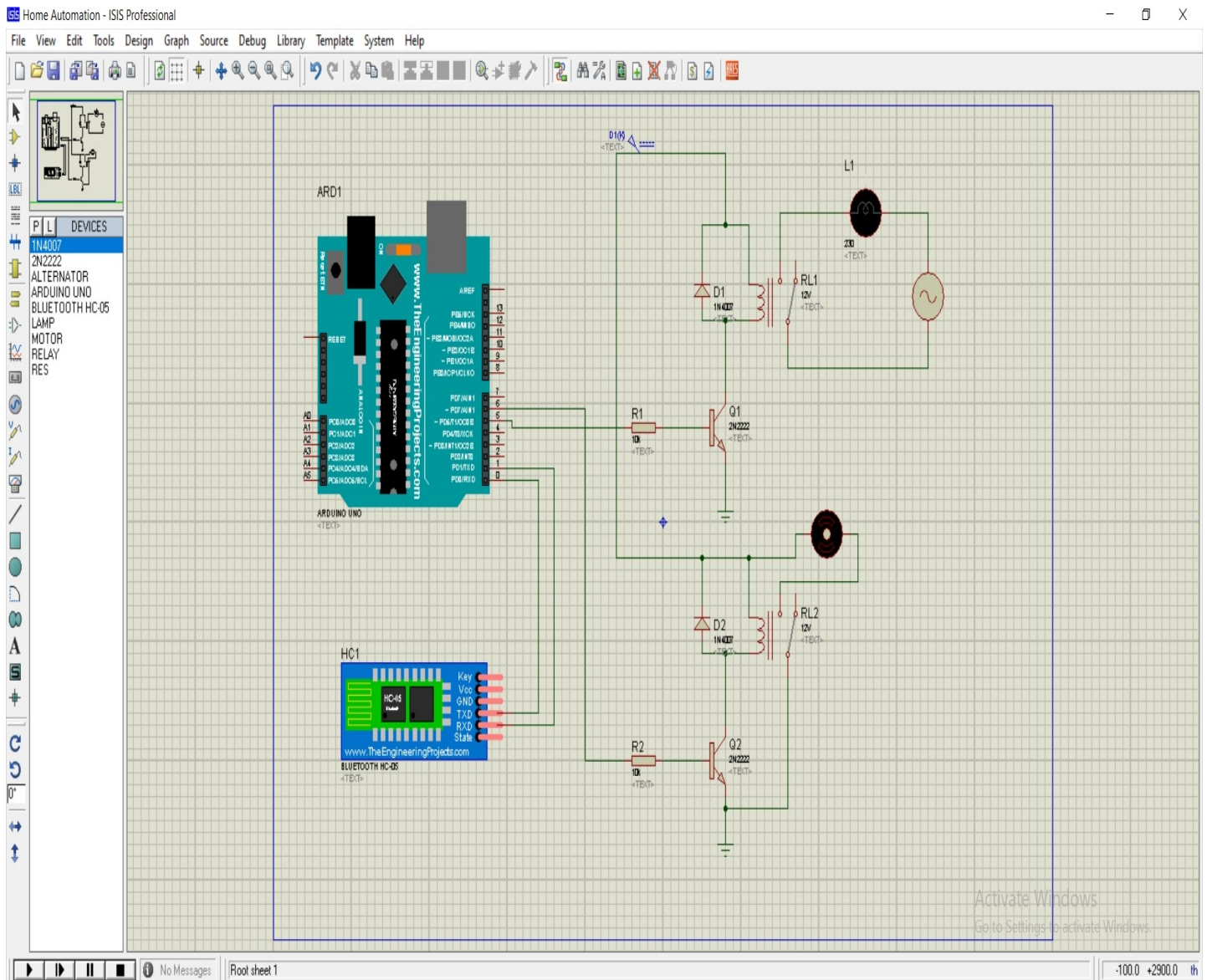
In recent years there has been an increase in smart home technology. Home automation has become the new trend. It allows us to control all our home appliances (lights, fans, thermostat, TV, security cameras) by connecting them to a common remotely controllable network making it much more accessible and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

K Creator Project Test Export Help

Home_Automation Screen1 Add Screen Copy Screen Remove Screen Assets Designer Blocks

Palette Viewer Samsung Galaxy S9 All Components

Palette:

- Button
- Checkbox
- Circular Progress
- Custom Progress
- Date Picker
- Floating Action Button
- Image
- Label
- Linear Progressbar
- List Picker
- Notifier
- Radio Button
- Rating Bar
- Slider
- Snackbar
- Spinner
- Spotlight

Viewer:

Voice Controlled Home Automation

Bluetooth

Tap to Connect

Disconnect

Bluetooth is Connected

Screen1 Properties:

Common properties

About Screen

About Screen Background Color: #000000FF

☐ About Screen Light Theme

About Screen Title: About this application

Accent Color: #FF4081FF

Align Horizontal: Center : 3

Align Vertical: Center : 2

App Name: Home_Automation

Background Color: #FFFFFF

Background Image: 3.jpg

Close Screen Animation: Default

Icon: None

Components:

- Screen1
- Image1
- List_Picker1
- Button1
- Label2
- Button2
- Label1
- Bluetooth_Client1
- Speech_Recognizer1

Code blocks in Kodular:

creator.kodular.io/#5217392114270208

Creator Project Test Export Help

Home_Automation Screen1 Add Screen Copy Screen Remove Screen Assets Designer Blocks

Blocks Viewer

Built-in

- Control
- Logic
- Math
- Text
- Lists
- Dictionaries
- Colors
- Variables
- Procedures
- Screen1
- Image1
- List_Picker1
- Button1
- Label2
- Button2

when List_Picker1 Before Picking

do set List_Picker1 Elements to Bluetooth_Client1 Addresses And Names

when List_Picker1 After Picking

selection

do if call Bluetooth_Client1 Connect address List_Picker1 Selection

then set Label1 Visible to true

set Button2 Visible to true

when Button2 Click

do call Bluetooth_Client1 Disconnect

set Label1 Visible to false

set Button2 Visible to false

when Speech_Recognizer1 Before Getting Text

do set Label2 Text to

when Speech_Recognizer1 After Getting Text

result

do set Label2 Text to Speech_Recognizer1 Result

call Bluetooth_Client1 Send Text

text Speech_Recognizer1 Result

Activate Windows
Go to Settings to activate Windows

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 control the home appliances through voice.