**Create a web application based on .NET framework/Android (Based on Specialization Opted by student) App based and control multiple electrical device.**

**=>**

**Circuit diagram:**

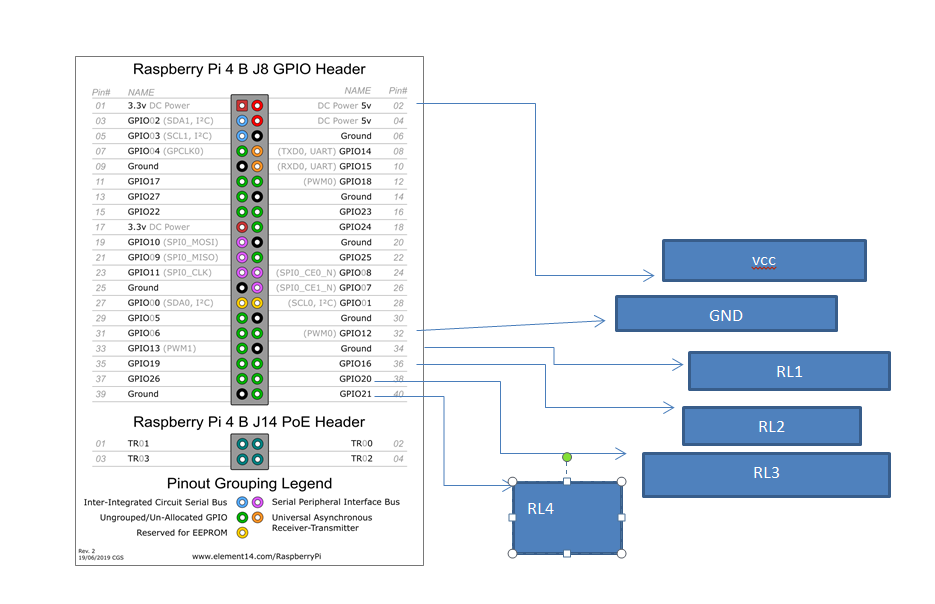
**Attach pin to raspberry pi according to diagram**

**Pin no. 32-RL1**

**Pin no. 36-RL2**

**Pin no. 38-RL3**

**Pin no. 40-RL14**



**Python code:**

**Import RPi.GPIO as GPIO**

**from firebase import firebase**

**GPIO.setmode(GPIO.BOARD)**

**GPIO.setup(32,GPIO.OUT)**

**GPIO.setup(36,GPIO.OUT)**

**GPIO.setup(38,GPIO.OUT)**

**GPIO.setup(40,GPIO.OUT)**

**firebase = firebase.FirebaseApplication('https://raspiberrypi-18mca8142.firebaseio.com/', None)**

**result = firebase.get('/dh11', None)**

**while(True):**

**if(result[‘rl1’]==1):**

**GPIO.output(32,GPIO.HIGH)**

**else:**

**GPIO.output(32,GPIO.LOW)**

**#RL2**

**if(result[‘rl2’]==1):**

**GPIO.output(36,GPIO.HIGH)**

**else:**

**GPIO.output(36,GPIO.LOW)**

**#RL3**

**if(result[‘rl3’]==1):**

**GPIO.output(38,GPIO.HIGH)**

**else:**

**GPIO.output(38,GPIO.LOW)**

**#RL4**

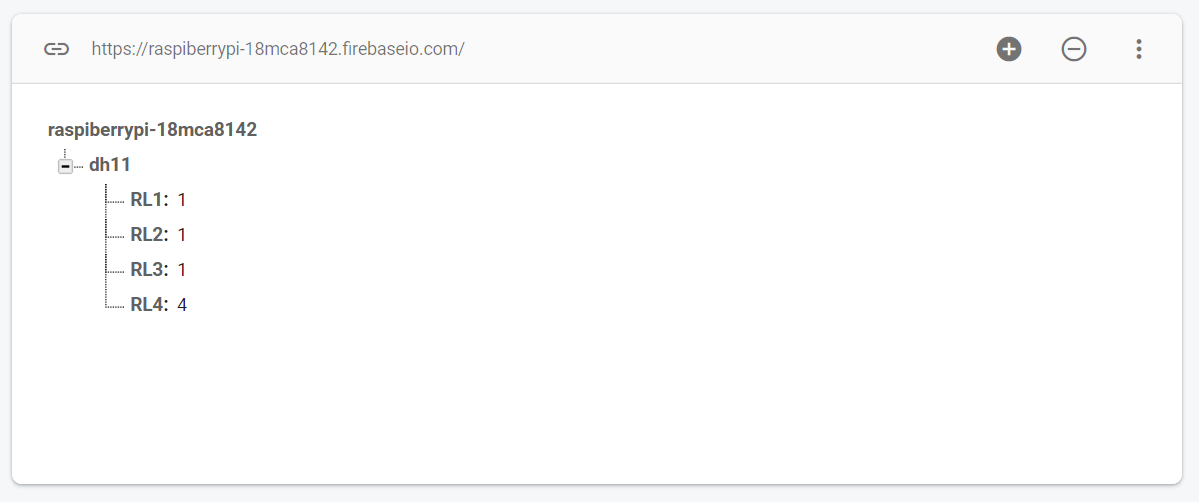
**if(result[‘rl4’]==1):**

**GPIO.output(40,GPIO.HIGH)**

**else:**

**GPIO.output(40,GPIO.LOW)**

**DATABASE DIAGRAM:**



**ANDROID CODE**

**Now we are going to make application in android studio:**

**Xml code:**

*<?***xml version="1.0" encoding="utf-8"***?>*<**LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity"  
 android:orientation="vertical"**>  
  
  
 <**Switch  
 android:id="@+id/RL1"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="RL1"** />  
 <**Switch  
 android:id="@+id/RL2"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="RL2"** />  
 <**Switch  
 android:id="@+id/RL3"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="RL3"** />  
 <**Switch  
 android:id="@+id/RL4"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="RL4"** />  
  
 <**TextView  
 android:layout\_width="match\_parent"  
 android:layout\_height="100dp"  
 android:text="rajeev singh 18mca8142"** />  
</**LinearLayout**>

**Mainactivity.java**

**package** com.example.cu\_iot\_assignment;  
  
**import** androidx.appcompat.app.AppCompatActivity;  
  
**import** android.os.Bundle;  
**import** android.view.View;  
**import** android.widget.Switch;  
  
**import** com.google.firebase.database.DatabaseReference;  
**import** com.google.firebase.database.FirebaseDatabase;  
  
**public class** MainActivity **extends** AppCompatActivity {  
 Switch **rl1**,**rl2**,**rl3**,**rl4**;  
  
 **private** FirebaseDatabase **database**;  
 **private** DatabaseReference **databaseReference**;  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_main***);  
 **rl1**=findViewById(R.id.***RL1***);  
 **rl2**=findViewById(R.id.***RL2***);  
 **rl3**=findViewById(R.id.***RL3***);  
 **rl4**=findViewById(R.id.***RL4***);  
 **rl1**.setOnClickListener(**new** View.OnClickListener() {  
 @Override  
 **public void** onClick(View v) {  
 **database** = FirebaseDatabase.*getInstance*();  
 **databaseReference** = **database**.getReference(**"dh11"**);  
 **if**(**rl1**.isChecked()) {  
  
 **databaseReference**.child(**"RL1"**).setValue(1);  
 }  
 **else** {  
 **databaseReference**.child(**"RL1"**).setValue(0);  
 }  
  
 }  
 });  
 **rl2**.setOnClickListener(**new** View.OnClickListener() {  
 @Override  
 **public void** onClick(View v) {  
 **database** = FirebaseDatabase.*getInstance*();  
 **databaseReference** = **database**.getReference(**"dh11"**);  
 **if**(**rl1**.isChecked()) {  
  
 **databaseReference**.child(**"RL2"**).setValue(1);  
 }  
 **else** {  
 **databaseReference**.child(**"RL2"**).setValue(0);  
 }  
  
 }  
 });  
 **rl3**.setOnClickListener(**new** View.OnClickListener() {  
 @Override  
 **public void** onClick(View v) {  
 **database** = FirebaseDatabase.*getInstance*();  
 **databaseReference** = **database**.getReference(**"dh11"**);  
 **if**(**rl1**.isChecked()) {  
  
 **databaseReference**.child(**"RL3"**).setValue(1);  
 }  
 **else** {  
 **databaseReference**.child(**"RL3"**).setValue(0);  
 }  
  
 }  
 });  
 **rl4**.setOnClickListener(**new** View.OnClickListener() {  
 @Override  
 **public void** onClick(View v) {  
 **database** = FirebaseDatabase.*getInstance*();  
 **databaseReference** = **database**.getReference(**"dh11"**);  
 **if**(**rl1**.isChecked()) {  
  
 **databaseReference**.child(**"RL4"**).setValue(1);  
 }  
 **else** {  
 **databaseReference**.child(**"RL4"**).setValue(0);  
 }  
  
 }  
 });  
 }  
}

**Diagram:**

