WOKWI Code for Home Automation:

```
#define BLYNK_TEMPLATE_ID "TMPL39q_q3i08"
#define BLYNK_TEMPLATE_NAME "Smart Home"
#define BLYNK_AUTH_TOKEN "hvXi_cfDTEbb0IZBKfzwIdSOF5z_MLJC"
#define BLYNK_PRINT Serial


#include <WiFi.h>
#include <WiFiClient.h>
#include <BlynkSimpleEsp32.h>

char auth[] = BLYNK_AUTH_TOKEN;

// Your WiFi credentials.
// Set password to "" for open networks.
char ssid[] = "Wokwi-GUEST";
char pass[] = "";

BlynkTimer timer;


#define button1_pin 26
#define button2_pin 25
#define button3_pin 33
#define button4_pin 32

#define relay1_pin 13
#define relay2_pin 12
#define relay3_pin 14
#define relay4_pin 27

int relay1_state = 0;
int relay2_state = 0;
int relay3_state = 0;
int relay4_state = 0;


//Change the virtual pins according the rooms
#define button1_vpin    V1
#define button2_vpin    V2
#define button3_vpin    V3
#define button4_vpin    V4

//------------------------------------------------------------------------------
--
// This function is called every time the device is connected to the
Blynk.Cloud
// Request the latest state from the server
```

```
BLYNK_CONNECTED() {
  Blynk.syncVirtual(button1_vpin);
  Blynk.syncVirtual(button2_vpin);
  Blynk.syncVirtual(button3_vpin);
  Blynk.syncVirtual(button4_vpin);
}

//------------------------------------------------------------------------
// This function is called every time the Virtual Pin state change
//i.e when web push switch from Blynk App or Web Dashboard
BLYNK_WRITE(button1_vpin) {
  relay1_state = param.asInt();
  digitalWrite(relay1_pin, relay1_state);
}
//------------------------------------------------------------------------
BLYNK_WRITE(button2_vpin) {
  relay2_state = param.asInt();
  digitalWrite(relay2_pin, relay2_state);
}
//------------------------------------------------------------------------
BLYNK_WRITE(button3_vpin) {
  relay3_state = param.asInt();
  digitalWrite(relay3_pin, relay3_state);
}
//------------------------------------------------------------------------
BLYNK_WRITE(button4_vpin) {
  relay4_state = param.asInt();
  digitalWrite(relay4_pin, relay4_state);
}
//------------------------------------------------------------------------


void setup()
{
  // Debug console
  Serial.begin(115200);
  //------------------------------------------------------------------
  pinMode(button1_pin, INPUT_PULLUP);
  pinMode(button2_pin, INPUT_PULLUP);
  pinMode(button3_pin, INPUT_PULLUP);
  pinMode(button4_pin, INPUT_PULLUP);
  //------------------------------------------------------------------
  pinMode(relay1_pin, OUTPUT);
  pinMode(relay2_pin, OUTPUT);
  pinMode(relay3_pin, OUTPUT);
  pinMode(relay4_pin, OUTPUT);
  //------------------------------------------------------------------
  //During Starting all Relays should TURN OFF
  digitalWrite(relay1_pin, HIGH);
```

```
  digitalWrite(relay2_pin, HIGH);
  digitalWrite(relay3_pin, HIGH);
  digitalWrite(relay4_pin, HIGH);
  //----------------------------------------------------------------------
  Blynk.begin(auth, ssid, pass);
  // You can also specify server:
  //Blynk.begin(auth, ssid, pass, "blynk.cloud", 80);
  //Blynk.begin(auth, ssid, pass, IPAddress(192,168,1,100), 8080);
  //----------------------------------------------------------------------
  //Blynk.virtualWrite(button1_vpin, relay1_state);
  //Blynk.virtualWrite(button2_vpin, relay2_state);
  //Blynk.virtualWrite(button3_vpin, relay3_state);
  //Blynk.virtualWrite(button4_vpin, relay4_state);
  //----------------------------------------------------------------------
}

void loop()
{
  Blynk.run();
  timer.run();
  // You can inject your own code or combine it with other sketches.
  // Check other examples on how to communicate with Blynk. Remember
  // to avoid delay() function!

  listen_push_buttons();
}

//MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM
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void listen_push_buttons() {
  //----------------------------------------------------------------------------
  if (digitalRead(button1_pin) == LOW) {
    delay(200);
    control_relay(1);
    Blynk.virtualWrite(button1_vpin, relay1_state); //update button state
  }
  //----------------------------------------------------------------------------
  else if (digitalRead(button2_pin) == LOW) {
    delay(200);
    control_relay(2);
    Blynk.virtualWrite(button2_vpin, relay2_state); //update button state
  }
  //----------------------------------------------------------------------------
  else if (digitalRead(button3_pin) == LOW) {
    delay(200);
    control_relay(3);
    Blynk.virtualWrite(button3_vpin, relay3_state); //update button state
  }
```

```
  //---------------------------------------------------------------------------
  else if (digitalRead(button4_pin) == LOW) {
    delay(200);
    control_relay(4);
    Blynk.virtualWrite(button4_vpin, relay4_state); //update button state
  }
  //---------------------------------------------------------------------------
}
//MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM



//MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM
void control_relay(int relay) {
  //-------------------------------------------------
  if (relay == 1) {
    relay1_state = !relay1_state;
    digitalWrite(relay1_pin, relay1_state);
    Serial.print("Relay1 State = ");
    Serial.println(relay1_state);
    delay(50);
  }
  //-------------------------------------------------
  else if (relay == 2) {
    relay2_state = !relay2_state;
    digitalWrite(relay2_pin, relay2_state);
    delay(50);
  }
  //-------------------------------------------------
  else if (relay == 3) {
    relay3_state = !relay3_state;
    digitalWrite(relay3_pin, relay3_state);
    delay(50);
  }
  //-------------------------------------------------
  else if (relay == 4) {
    relay4_state = !relay4_state;
    digitalWrite(relay4_pin, relay4_state);
    delay(50);
  }
  //-------------------------------------------------
}
//MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM
```