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
                      V1
#define button1_vpin
#define button2_vpin
                      V2
#define button3 vpin
                     V3
#define button4_vpin
                      ۷4
//-----
// 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);
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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();
}
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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
 }
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else if (digitalRead(button4 pin) == LOW) {
  delay(200);
  control_relay(4);
  Blynk.virtualWrite(button4 vpin, relay4 state); //update button state
 }
 //----
}
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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);
 }
}
```

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