**ESP32 Voice Control using Blynk, Alexa, Google Assistant, and Siri**

**1. Using Blynk Cloud to Control ESP32 via Voice**

**Step 1: Set Up ESP32 with Blynk**

1. Install the **Blynk IoT** app from Play Store/App Store.
2. Create a new project and choose **ESP32** as the device.
3. Copy the **Auth Token** from the Blynk app.
4. Install the **Blynk Library** in Arduino IDE.
5. Upload the following code to your ESP32:

#define BLYNK\_PRINT Serial

#include <WiFi.h>

#include <BlynkSimpleEsp32.h>

char auth[] = "YOUR\_BLYNK\_AUTH\_TOKEN";

char ssid[] = "YOUR\_WIFI\_SSID";

char pass[] = "YOUR\_WIFI\_PASSWORD";

void setup() {

Serial.begin(115200);

Blynk.begin(auth, ssid, pass);

pinMode(2, OUTPUT);

}

BLYNK\_WRITE(V1) {

int value = param.asInt();

digitalWrite(2, value);

}

void loop() {

Blynk.run();

}

1. In the Blynk app, create a **Button Widget**:
   * Select **V1** as the Virtual Pin.
   * Set mode to **Switch**.

🚀 Now you can turn the LED on/off using the Blynk app!

**2. Using Alexa with Blynk**

**Step 1: Link Blynk with Alexa**

1. Open the **Amazon Alexa App**.
2. Go to **Skills & Games** and search for **Blynk Smart Home**.
3. Enable the skill and link your Blynk account.
4. Alexa will discover the **Virtual Pin V1** as a device.
5. Say **"Alexa, turn on LED"** or **"Alexa, turn off LED"**.

🚀 Your ESP32 LED is now voice-controlled with Alexa!

**3. Using Google Assistant with Blynk**

**Step 1: Link Blynk with Google Assistant**

1. Open **Google Home App**.
2. Tap **+ Add → Set up device → Works with Google**.
3. Search for **Blynk Smart Home** and link your account.
4. Google Assistant will detect the ESP32 device.
5. Say **"Hey Google, turn on LED"** or **"Hey Google, turn off LED"**.

🚀 Now, Google Assistant controls your ESP32!

**4. Using Siri Shortcuts for iPhone Users**

**Step 1: Create a Siri Shortcut for Blynk**

1. Open the **Shortcuts** app on your iPhone.
2. Tap the **+ (Add Shortcut)** button.
3. Tap **Add Action → Web → Get Contents of URL**.
4. Enter the URL:
   * **Turn On:** https://blynk.cloud/external/api/update?token=YOUR\_BLYNK\_AUTH\_TOKEN&V1=1
   * **Turn Off:** https://blynk.cloud/external/api/update?token=YOUR\_BLYNK\_AUTH\_TOKEN&V1=0
5. Name the shortcut **Turn on LED** and save it.
6. Repeat for "Turn off LED".

🚀 Now say **"Hey Siri, Turn on LED"** and it will work instantly!

**🎤 Conclusion: Choose Your Preferred Method!**

✅ **Blynk App:** Easiest for direct control ✅ **Alexa:** Works with Echo devices ✅ **Google Assistant:** Ideal for Android users ✅ **Siri Shortcuts:** Best for iPhone users

Would you like additional customization? Let me know! 🚀