



Project Template:

Project name

A name includes the key concept of your project

Description

Provide a brief overview of the project. Mention its purpose and what it achieves. For example:

- Why did you create this project?
- What's the special part of the project?

Functions

List the key features and functionalities of the project. Some examples could be:

- Control LED lights via a web browser.
- Change LED patterns and colors.
- Adjust brightness or turn lights on/off.

Hardware and Software Used

Hardware:

List all physical components, e.g., 3D-printed Xmas tree model, Arduino microcontroller, LED strip, power supply.

Software:

Mention tools used for development, e.g., Arduino IDE, design software (Fusion 360, TinkerCAD), or programming languages.

Wiring Diagram

Provide details about the wiring setup. Include:

- A clear diagram showing connections.
- A brief description of each key connection (e.g., LED data pin to GPIO, power supply details).

Code

Include a summary or highlights of the code used in the project:

- Briefly describe what the code achieves.
- Add comments in the code for clarity.
- Provide a link to the full repository (e.g., GitHub) if applicable.

Printing Instructions

Provide guidance for 3D printing the project components. Include suggestions for:

- Filament Material (e.g., PLA, PETG).
- Layer Height (e.g., 0.2 mm).
- Infill (e.g., 20%).
- Supports (indicate Yes/No and where they are needed).

Assembly Instructions

Explain how to assemble the project. For example:

- Insert the LED strip into the 3D-printed tree.
- Connect the microcontroller as shown in the wiring diagram.
- Upload the Arduino code to the microcontroller.
- Test the setup to ensure it works as expected.

Demo and Usage Instructions

Explain how users can interact with the project. For example:

- How to connect to the web interface.
- How to use features like toggling LEDs, adjusting brightness, or selecting patterns.

Additional Notes or Tips

Provide any additional information to help users:

- Troubleshooting common issues (e.g., check wiring if LEDs don't light up).
- Suggest optional enhancements (e.g., add new LED patterns, integrate voice control).

Photos and Videos

Encourage users to include high-quality images and videos showcasing:

- The finished project.
- Wiring setup.
- The web interface or control functionality in action.