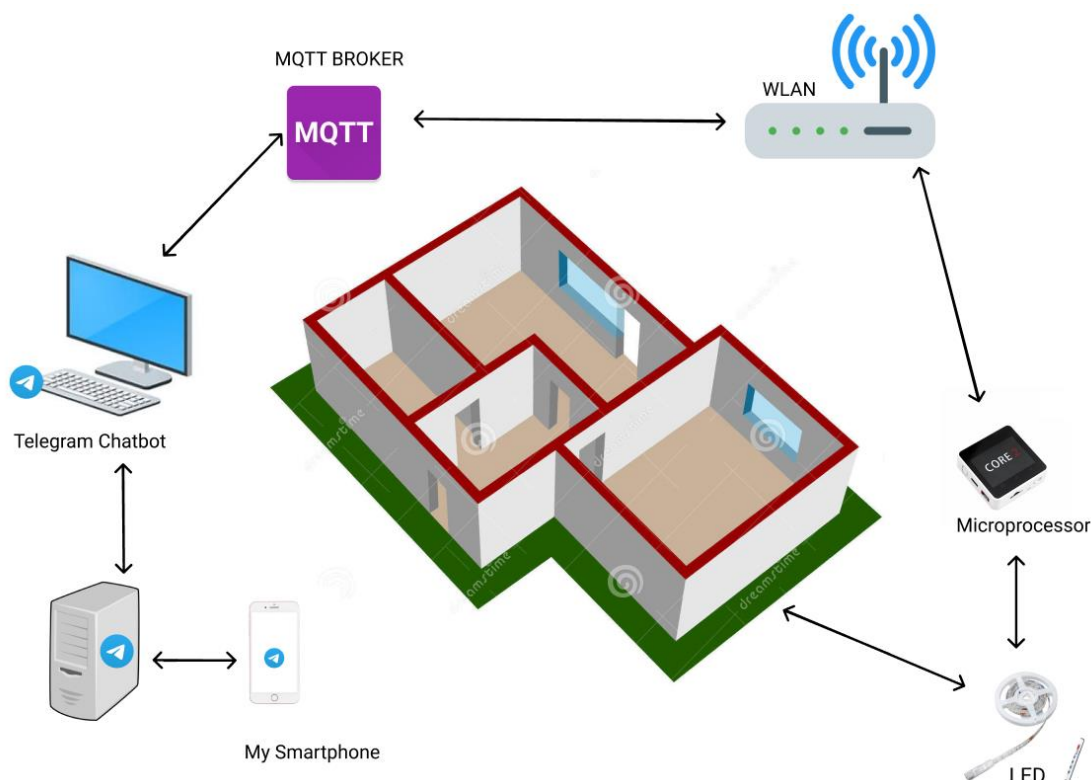# M242 mini project - LightUp

LightUp

Our product is called LightUp. This system lets you control all the lights in your house remotely with just one easy-to-use app. You can choose from a wide range of settings for your lights. You will be able to switch your lights on or off with just one command and you even have the option to choose from several different colors. There will also be a few existing options that have default presets ready for you. You are just a few buttons away to enjoy your home with your new lights.
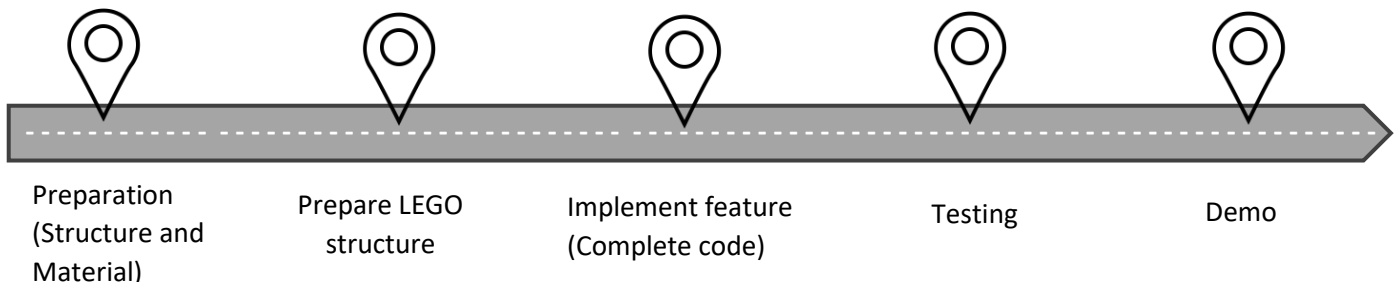
How to use LightUp?

For this to work in your house, all you need to do is download Telegram: (https://desktop.telegram.org/) Go on your telegram app and open the chat with your Bot. Give in the room name and the setting you want for your light. For example, "Bedroom: Red". This command will trigger your lights and change the setting according to your command. With these easy steps customize your whole house.

How does LightUp work?

This program is coded in python and is registered as a private **chatbot** on **Telegram**. This Telegram chatbot helps us receive all the user commands. The user gives a command on their smartphone, and we receive these through Telegram in our application. We are using a **MQTTbroker** to communicate between different devices. Different devices such as laptop and smartphone. We have our **WLAN** which establishes a wireless connection between our devices. The messages are transmitted wirelessly to the **microprocessor**. In our case that would be the **M5Stack core 2**. The command is executed and you get your wished light setting. Once the command is executed the user shall also be informed.

Milestones

| Preparation (Structure and Material) | Prepare LEGO structure | Implement feature (Complete code) | Testing | Demo |

Definition of Done (DoD)

❖ The program should consist of a working chatbot
- The chatbot should be private. Only the user shall be able to see it on their devices.

❖ A LEGO-based structure should exist
- Should at least represent 2 rooms
- Every room should have LED Lights

❖ Features that should be concluded:
- Different rooms should be able to be configured as options
- This should be possible for each room individually
  - Switch lights on/off
  - Change the color of the lights
  - Use additional preset settings

Our team

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Architecture designer
Developer

Tamanna Rajput - 3rd apprentice year TBZ

Client based Communicator
Developer