Traffic Light Lamp

Group 14

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User Story Priority list

The following list is the priority in which user cases are implemented. The user stories depend on each other for our project, so the order in which user cases are implemented matters.

1. As a user, I want to be able to control the light with a desktop app.
2. As a user, I can adjust the brightness and colour of the lights to suit my needs.
3. As a user, I want to be able to change the pattern of the lights.
4. As a user, I want to be able to control the light with my voice for ease of use
5. As a user, I can set the light to respond to the audio in the room

User Stories

As a user, I want to be able to control the light with a desktop app

Front

```
* A user can turn the light on and off with the remote control (3 points)
```

Back

```
* Try turning on the light with voice control
* Try turning off the light with voice control
```

As a user, I can adjust the brightness and colour of the lights to suit my needs

Front

```
* User is able to adjust brightness (1 point)
* User is able to change colour to preset values (1 point)
* User is able to change colour by hex value (2 point)
```

Back

```
* Try changing brightness to a higher than default value
* Try changing brightness to a lower than default value
* Try changing brightness to maximum value
* Try changing brightness to minimum value
* Try changing colour to each of the given presets
* Try changing colour by hex code
```

As a user, I want to be able to change the pattern of the lights

Front

```
* User is able to change light to a strobing pattern (1 point)
* User is able to change light to traffic light routine pattern (2 points)
* User is able to change light to a breathing pattern (1 point)
```

Back

```
* Try changing light to a strobing pattern
* Try changing light to a traffic light routine pattern
* Try changing light to a breathing pattern
* Try changing light back to default still pattern
```

As a user, I want to be able to control the light with my voice for ease of use

Front

```
* A user can turn the light on and off with voice control (2 points)
* A user can change the light's settings with voice control (2 points)
* A user can change the light's mode with voice control (2 points)
```

Back

```
* Try turning the light on with voice control
* Try turning the light off with voice control
* Try changing the light's brightness higher and lower than default values
with voice control
* Try changing the light's colour to three different values with voice
control
* Try changing the light to a different mode with voice control
```

As a user, I can set the light to respond to the audio in the room

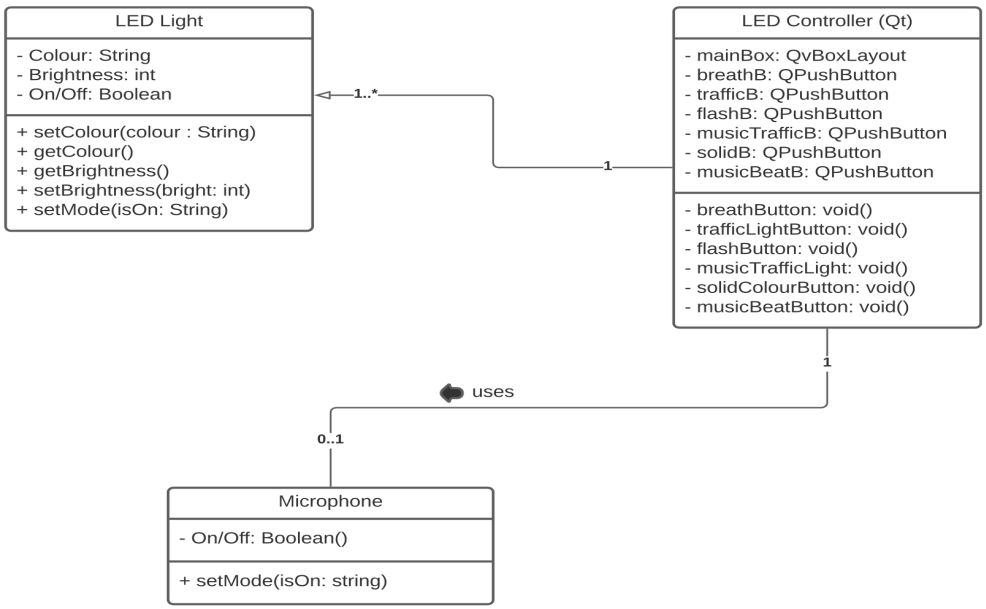
Front

```
* User is able to change light to flash to the beat of music (2 points)
* User is able to change light to traffic light routine that blinks to the
beat of music (3 points)
```

Back

```
* Try activating the audio-sensitive regular mode with music playing in the
room
* Try activating the audio-sensitive regular mode with no music playing in
the room
* Try activating the audio-sensitive regular mode with music playing near the
light
* * Try activating the audio-sensitive traffic mode with music playing in the
room
* Try activating the audio-sensitive traffic mode with no music playing in
the room
* Try activating the audio-sensitive traffic mode with music playing near the
light
```

UML Diagram



The above UML diagram is the class diagram for the software component of our traffic light project. The main component of our project is defined within our LED controller class where we will be creating all the buttons containing all light patterns controlled by the user through a graphical interface. We plan to incorporate more design features once we start programming the traffic light project in future deliverables of the project. The LED controller class includes the LED light class in order to obtain features such as colour and brightness. The microphone is used by the LED controller class to activate voice control, this portion of the project will be more clear as we move forward and implement other features.