

Luqhasal

Event-Driven Computing

Pre-Compiling:

Choose the testing timing or real timing by uncommenting the // code line

Compiling:

```
javac *.java
```

Run:

```
java LightControls
```

Implementation pattern: Mealy

Steps taken:

- 1) When in OFF state, you press toggle switch "On / Off" to switch on the light.
 - 2) The light yellow color show. Display change to ON then the countdown timer begins.
 - 3) During the 5 mins warning period, when you press Reset button, the countdown timer change back to ON then repeat again above.
 - 4) Once the countdown timer expires, the BEEP will show for 15 secs then the light off for 15 mins cooling down.
 - 5) The interface return back to OFF state.
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User Acceptance Test

Specification	Status	Remark
15 minutes to reach peak output	✓	Use 1 second for fast start
Cannot be turned back on for 8 minutes.	✓	Testing purpose we use 2 mins to show 15 seconds long audible alert within the range
The system starts with all lights off. Display D will show "OFF".	✓	
If the toggle switch T is set to on, then all lights will come on.	✓	
Display D will show "ON" for 5 seconds and then switch to a countdown timer display, starting from 1:59:55.	✓	Testing purpose we use 6 mins
When there are only 5 minutes remaining, speaker S will start beeping every 15 seconds to alert users.	✓	
During the 5 minute warning period, a user can press button B to reset the timer. D will, again, show "ON" for 5 seconds and then switch to the 1:59:55 countdown.	✓	Before 5 mins warning period, user unable to press button B. To prevent user abusing the reset button unnecessary.
If the timer expires, the lights will be shut off, S will give one long audible alert for 15 seconds, and the display will switch to "COOLING DOWN" for 8 minutes. During this time, toggling T or pressing B will have no effect.	✓	
Holding down button B for 5 seconds when the system is on will bring the system down immediately.	✓	Hold down for 5 seconds and release
If T is on and the system shuts down, then after the cooldown period it must be toggled to off and then back to on to restart the system.	✓	
Turning the toggle switch T off while the system is on will move the system into the countdown mode.	✓	
The 15 second continuous beep sounds for the last 15 seconds BEFORE the lights go off.	✓	