

CS417 - Group 2 User Manual

Motion Alarm System

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List of Patterns:

- Strategy
- Adapter
- Abstract Factory
- Builder
- Composition
- Decorator
- State
- Singleton
- Iterator

The motion alarm system uses the GrovePi along with the LED, button, buzzer, and ultrasonic sensor to detect movement. The program uses a logging system that tracks the date and time of the event that triggered or deactivated the system as well as the sensor that caused the trip or deactivation.

Starting the program is as simple as cloning the latest git submission, navigating to the “finalproject/dist” folder in the GrovePi terminal, and executing the finalproject.jar file with the following command:

```
java -jar finalproject.jar
```

The program will automatically arm the system. If there is an event the system will log and reactivate. The button will deactivate the system and log the event. In this case, the user will be prompted with several options such as print logs, set strategy, rearm, logout, or exit program or delete logs if the current user is an administrator or delete user if the current user is a moderator. The strategy option will allow for a silent trip of the system, a red LED light to turn on, or a buzzer to activate in the event of a trip.

Properties format:

The properties file format is the name of the component in all capital letters assigning the port number that the component is set to. The default settings are as follows:

```
GREEN_LED_PORT=2
```

```
RED_LED_PORT=7  
BUZZER_PORT=8  
RANGER_PORT=4  
BUTTON_PORT=3
```

There is a part of the system that may not function properly on some occasions. The ultrasonic sensor has proven to be unreliable in some cases during testing. In this case many faulty logs may be generated. Some of the patterns such as the state pattern are not utilized in their full potential because of the problems we've run into with one point of control. However, the design patterns allow for future expansion of the program in later versions.