MINI PROJECT REPORT

TOPIC: Desktop Client for MQTT application

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**Problem Statement:**

Create a desktop GUI client using swing which can send/receive data to/from remote sensors via the internet using MQTT protocols.The desktop client should be able to:

* Connect with the online MQTT server.
* Interact with an led and two sensors via the internet.
* Read values from the sensors.
* Process the values sent by the sensors.

**Features:**

* The main interface (made using swing) consists of three buttons namely:
  + LED Controller – used to control the state of the LED.
  + Proximity Sensor – used to take values from the proximity sensor.
  + Temp Sensor – used to display temperature value from temperature sensor.
* LED Controller form contains two buttons:
  + LED On which sends signal to turn the LED on.
  + LED Off which sends a signal to turn the LED off.
* Proximity Sensor form displays readings sent by the proximity sensor. If the sensor detects an obstacle within a certain range a buzzer will start ringing on the desktop indicating that an obstacle has been detected.
* Temperature Sensor form displays the current temperature, taken from the temperature sensor, in Celsius and Farenheit.

**Classes:**

* Sensor (Interface):

The methods (abstract) in this class are:

1. getReading()
2. setReading()
3. equals()
4. detected()
5. getType()
6. toString()
7. convertFromString()

This class acts as an interface for implementation of other

sensors. Since this is an interface its methods are all abstract in nature.

* ProximitySensor (implements Sensor):

This class is used to implement functionality of the proximity sensor. The methods in this class are (apart from the inherited methods):

1. getDistanceInCM()

This class is used to get values from the proximity sensor and display those values if they lie in a specific range. Also if the value is in said range, a buzzer will start ringing on the desktop.

* TemperatureSensor (implements Sensor):

This class is used to implement functionality of the temperature sensor. The methods in this class are (apart from the inherited methods):

1. getReadingAsCelsius ()
2. getReadingAsFarenheit()

This class is used to get values from the temperature sensor and display those values in Celsius and Farenheit.