IBM NALAIYATHIRAN

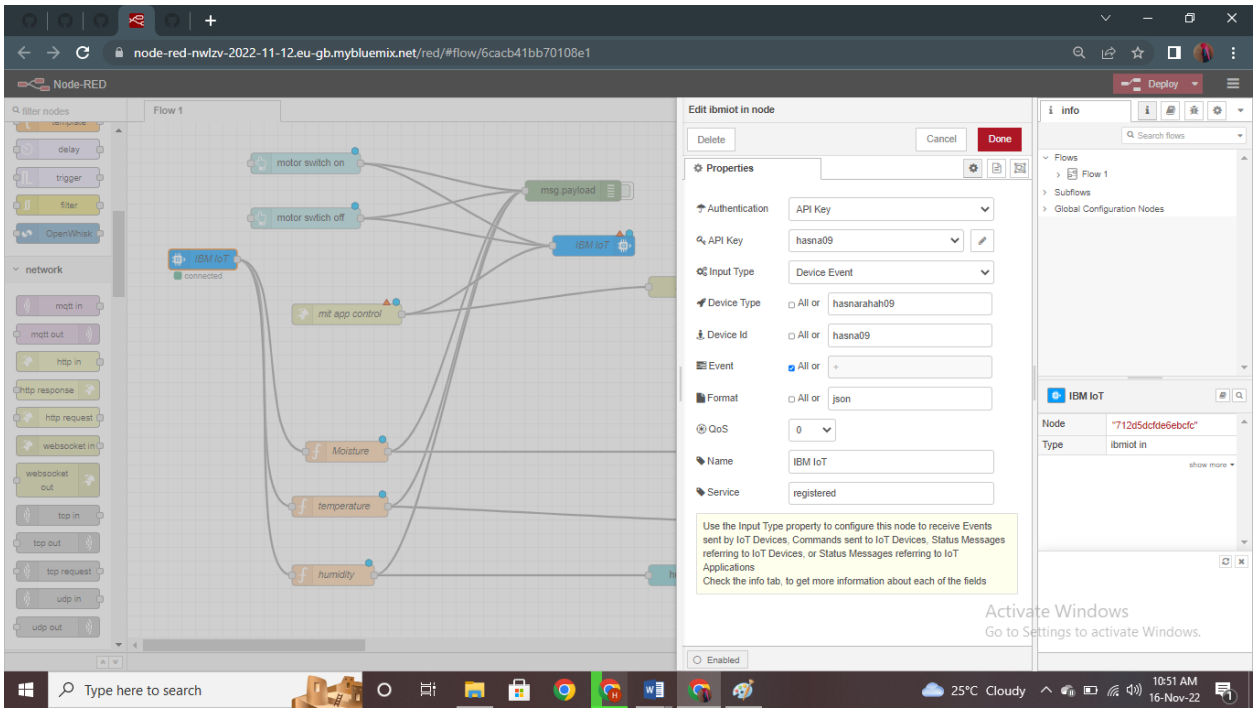
SMART FARMER-IOT ENABLED SMART FARMING APPLICATION

SPRINT 3

Title	Smart farmer-IoT enabled smart farming application
Domain	Internet of Things
Team ID	PNT2022TMID44170
Project Name	Project – Smart Farmer-IoT Enabled smartFarming Application

Configuration of Node-Red to send commands to IBM cloud

ibmiot out node I used to send data from Node-Red to IBM Watson device. So, afteradding it to the flow we need to configure it with credentials of our Watson device.



We used a function node to analyses the data received and assign command to each number.

The Java script code for the

analyses is:

if(msg.payload===1)

msg.payload={"command”:

“ON"}; else

if(msg.payload===0)

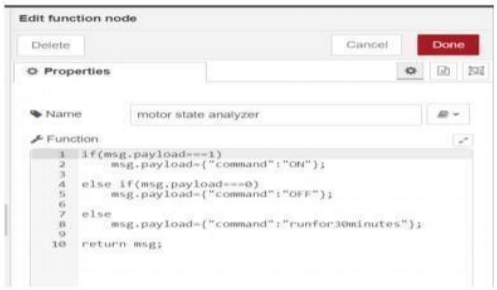
msg.payload={"command”:

“OFF"};

Then we use another function node to parse the data and get the command and represent it visually with text node.

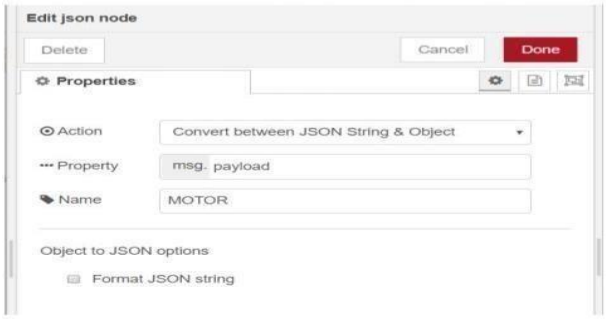
The Java script code for that function node is:

```
var state=msg.payload;
msg.payload = state.command;
return msg;
```



The above images show the java script codes of analyser and state function nodes.

Then we add edit Json node to the conversion between JSON string & object and finally connect it to IBM IoT Out.

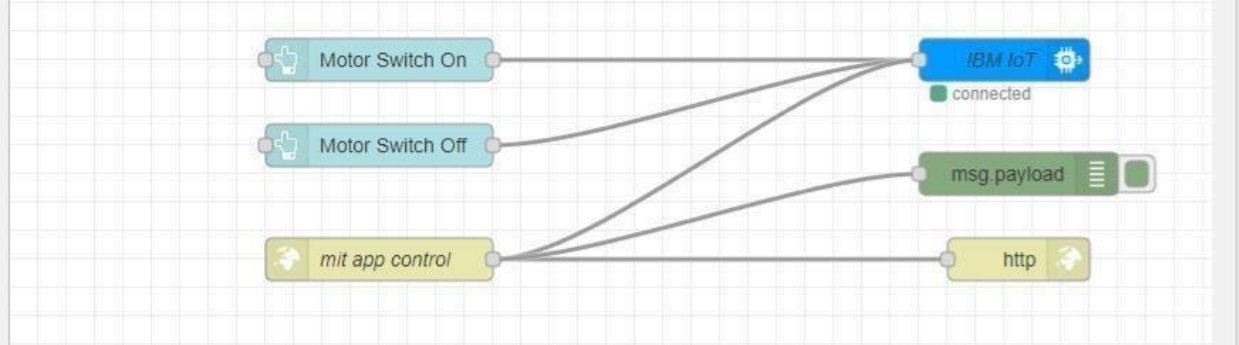


Edit JSON node needs to be configured like this

Here we add two buttons in UI

- for motor on

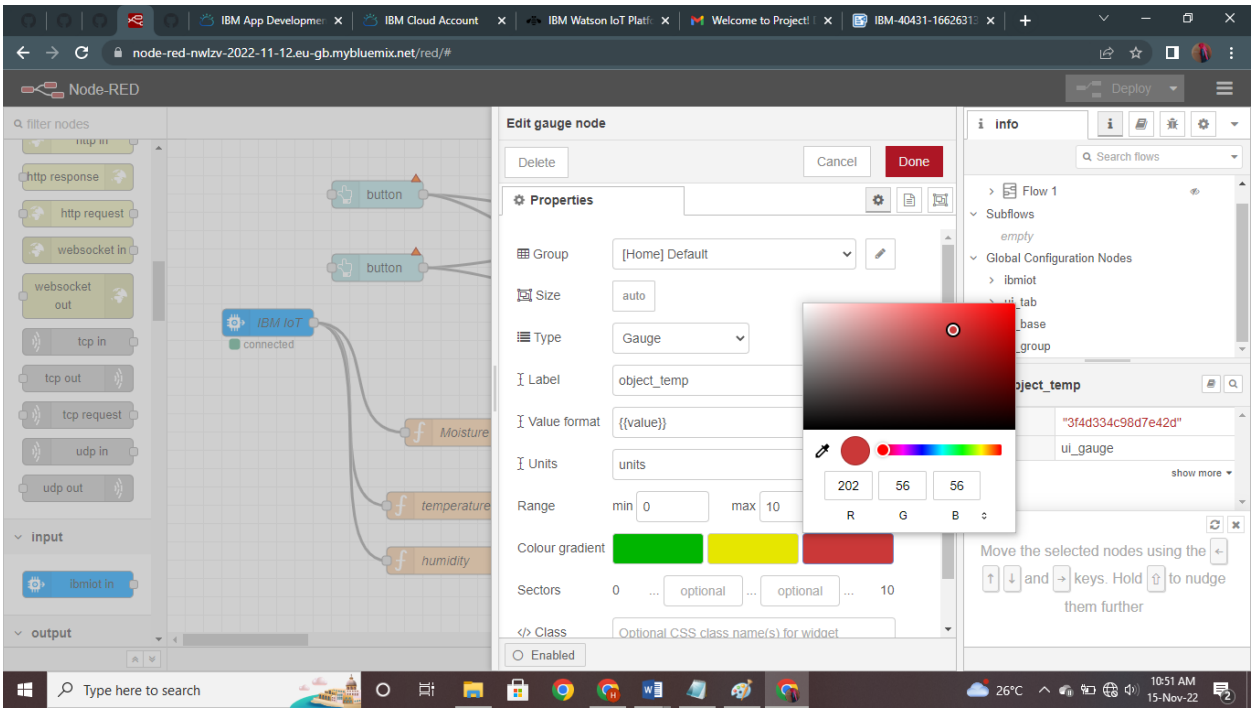
- for motor off



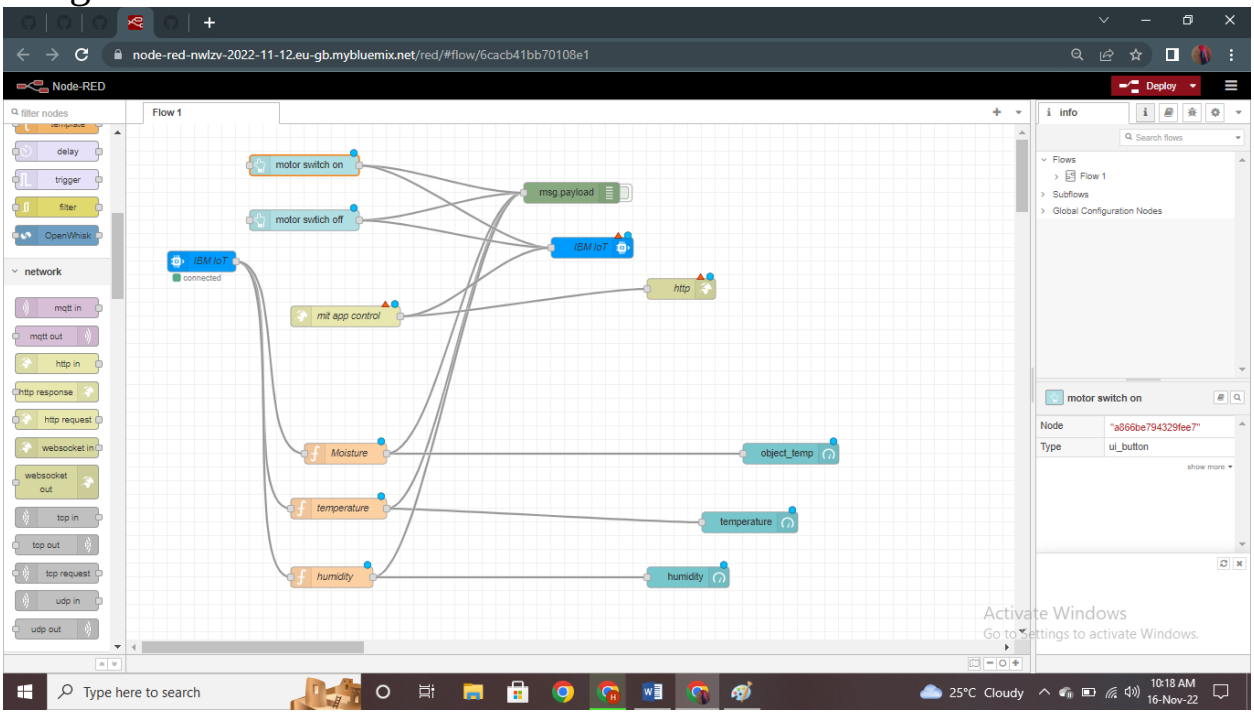
This is the program flow for sending commands to IBM cloud.

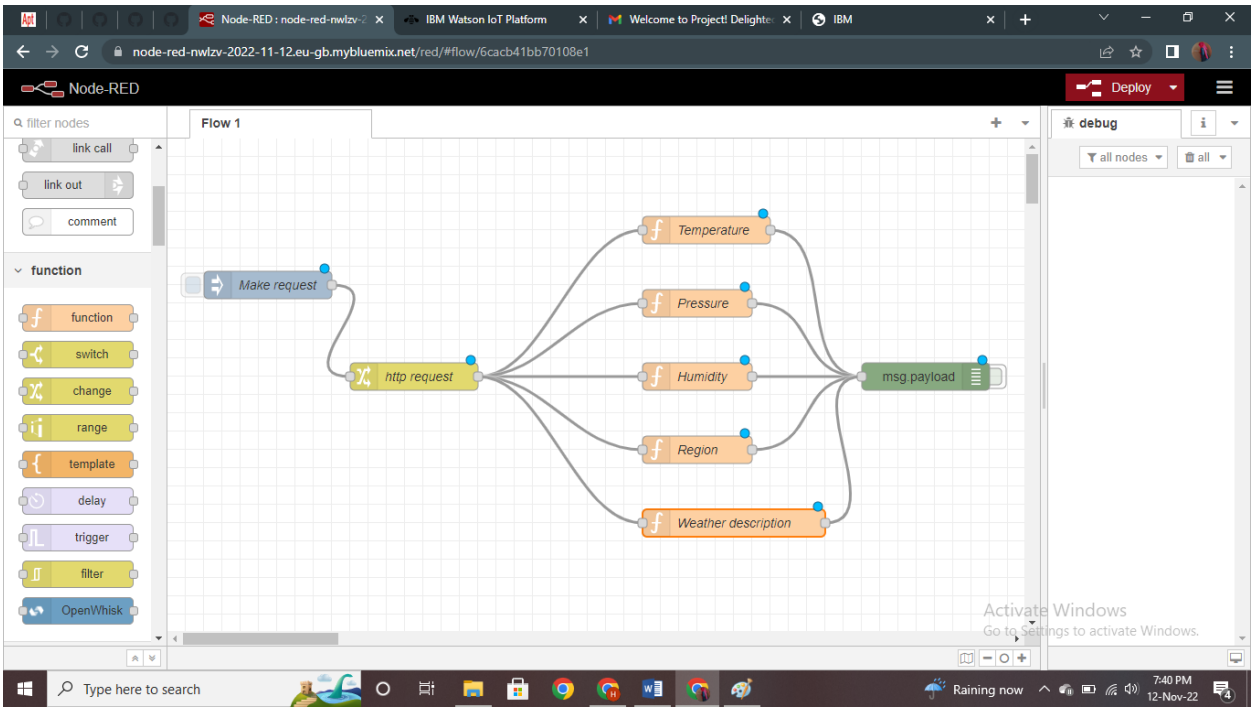
Adjusting User Interface

- In order to display the parsed JSON data a Node-Red dashboard is created here we are using Gauges, text and button nodes to display in the UI and helps tomonitor the parameters and control the farm equipment.
- Below images are the Gauge, text and button node configurations.



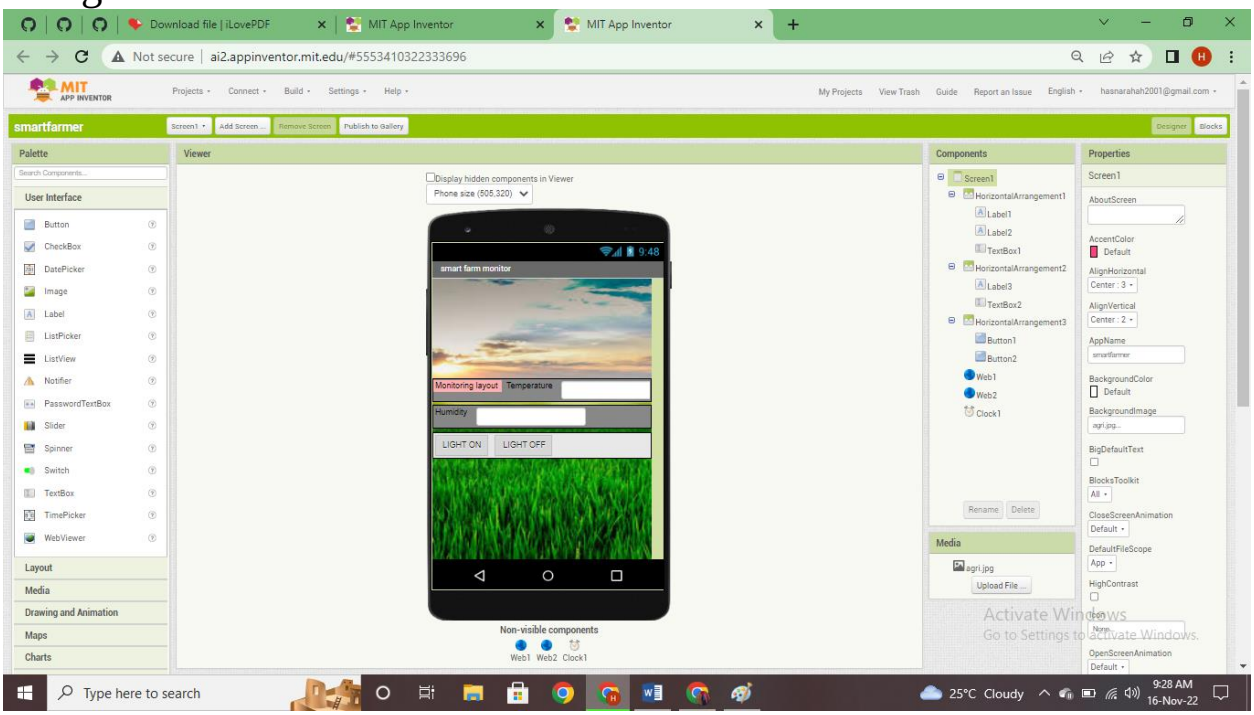
Program Flow



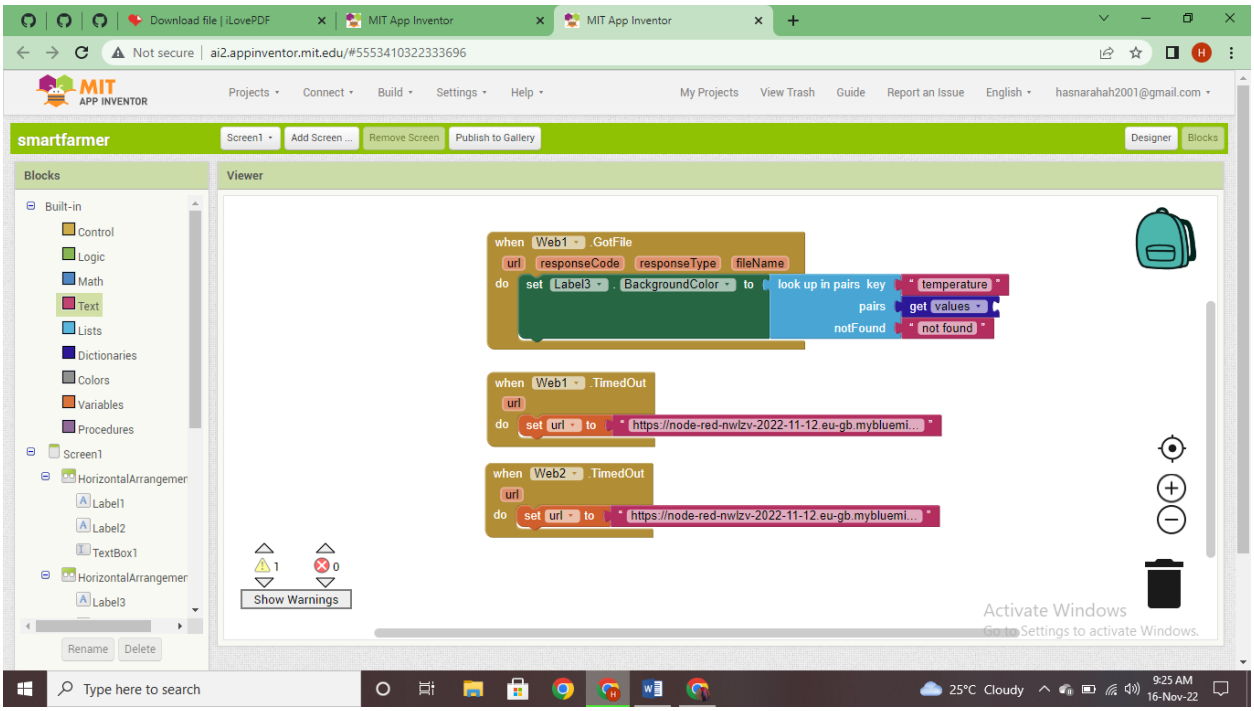


MIT APP INVENTOR:

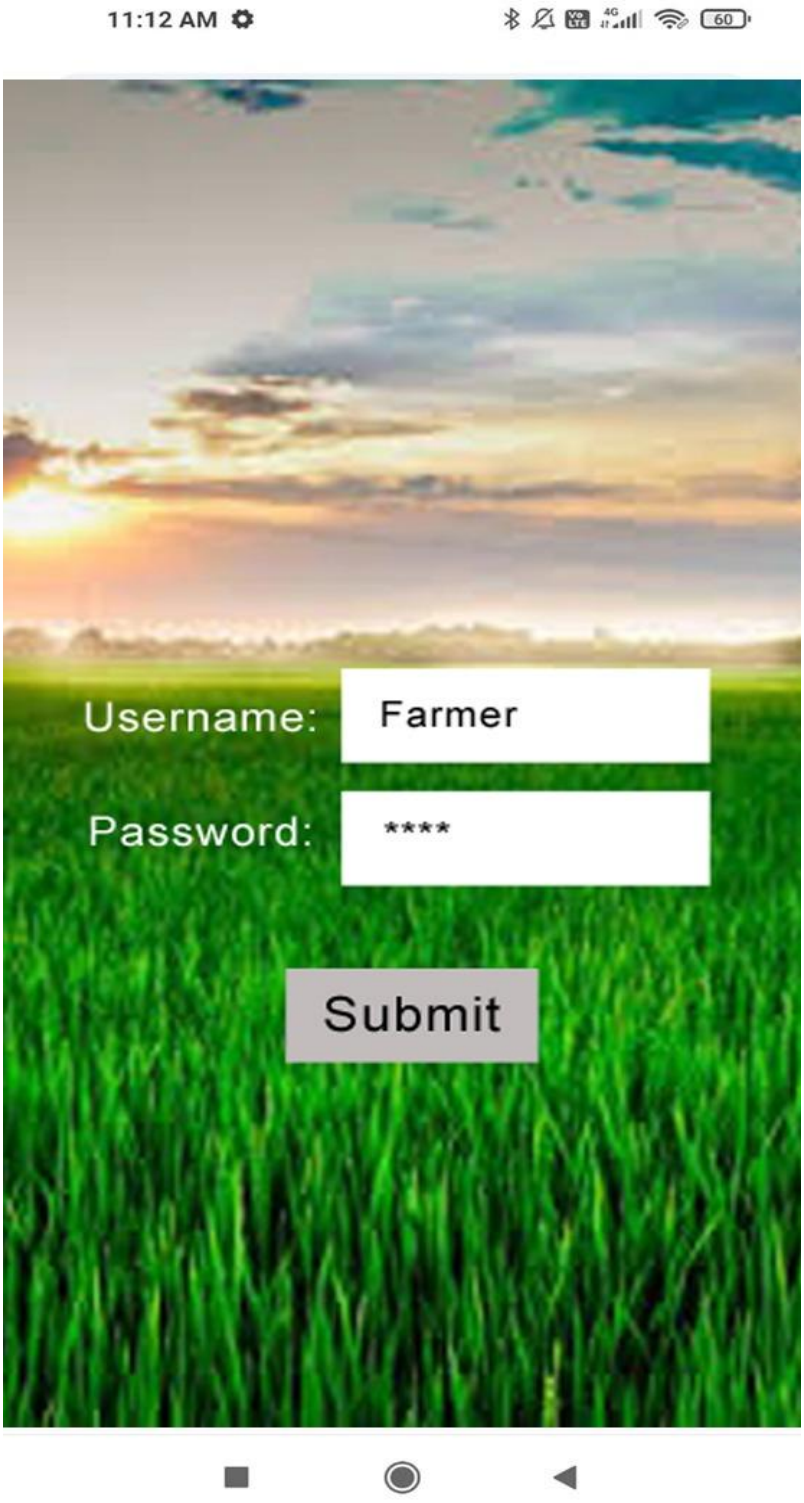
Designer screen



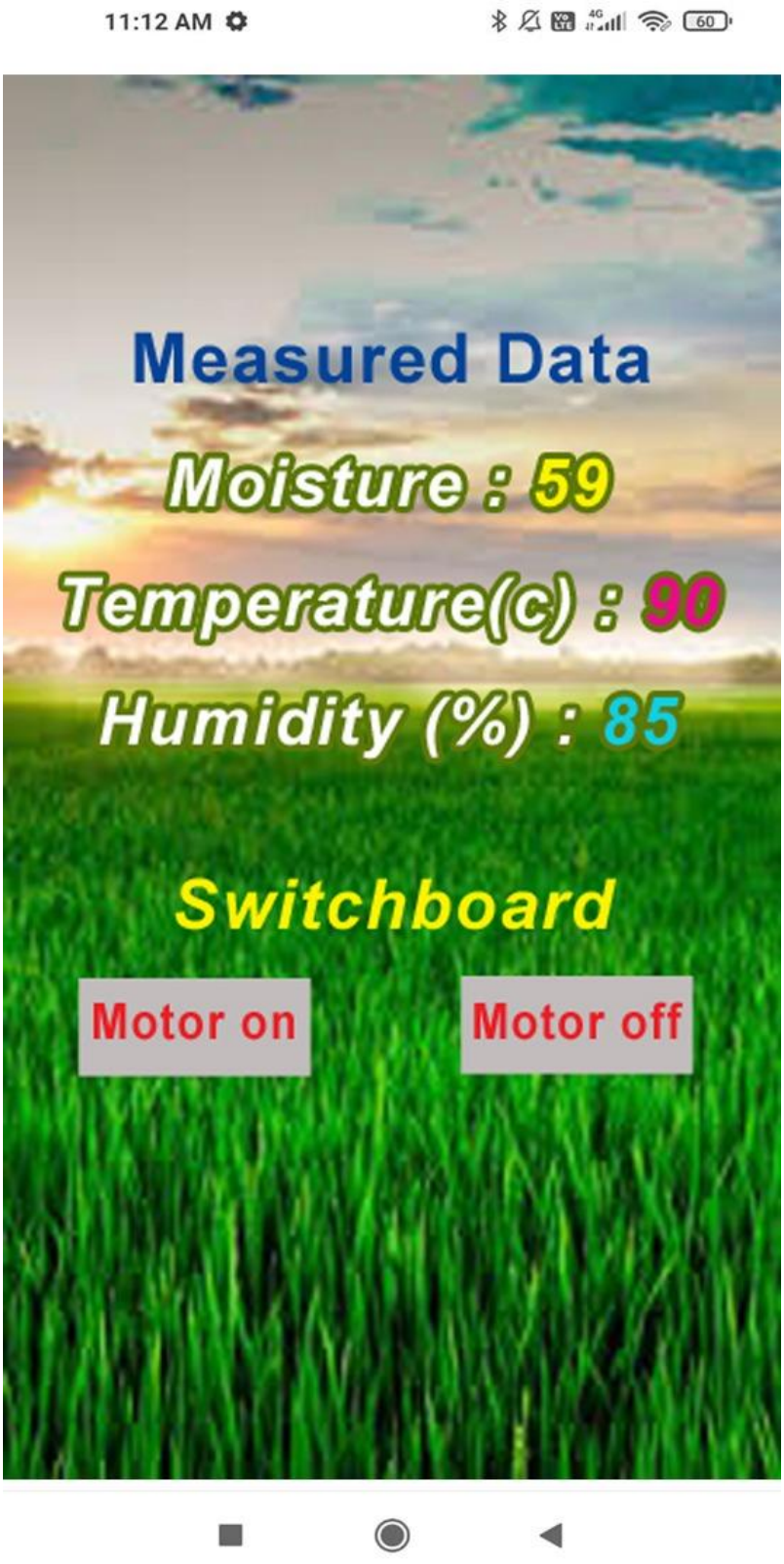
Blocks screen:



DEVELOPED APP MOBILE SCREEN
SCREEN1



SCREEN2


11:12 AM
Measured Data
Moisture : 59
Temperature(c) : 90
Humidity (%) : 85
Switchboard
Motor on
Motor off