Develop a Mobile Application

Date	03 November 2022
Team ID	PNT2022TMID16740
Project Name	Project – IOT ENABLED SMART FARMING

Objective:

To develop a mobile application to send the temperature, humidity, soil moisture values to the mobile app which was developed using MIT App Inventor and to turn on or off the motor in the field using the mobile app

First Screenshot — Python Shell (Top Left)

```
Published Temperature = 29 C Humidity:76 soil moisture:52
Published Temperature = 98 C Humidity:93 soil moisture:44
Published Temperature = 86 C Humidity:21 soil moisture:79
Published Temperature = 100 C Humidity:16 soil moisture:75
Published Temperature = 75 C Humidity:74 soil moisture:65
Published Temperature = 14 C Humidity:23 soil moisture:86
Published Temperature = 67 C Humidity:28 soil moisture:92
Published Temperature = 65 C Humidity:38 soil moisture:10
Published Temperature = 63 C Humidity:1 soil moisture:90
Published Temperature = 84 C Humidity:51 soil moisture:55
Published Temperature = 57 C Humidity:85 soil moisture:42
Published Temperature = 39 C Humidity:52 soil moisture:46
Published Temperature = 51 C Humidity:73 soil moisture:17
Published Temperature = 37 C Humidity:28 soil moisture:41
Published Temperature = 77 C Humidity:89 soil moisture:46
Published Temperature = 91 C Humidity:53 soil moisture:85
Published Temperature = 94 C Humidity:71 soil moisture:34
Published Temperature = 52 C Humidity:44 soil moisture:28
Published Temperature = 67 C Humidity:52 soil moisture:76
Published Temperature = 68 C Humidity:35 soil moisture:63
Published Temperature = 68 C Humidity:68 soil moisture:50
Published Temperature = 16 C Humidity:7 soil moisture:27
Published Temperature = 14 C Humidity:55 soil moisture:41
Published Temperature = 3 C Humidity:57 soil moisture:21
Published Temperature = 57 C Humidity:16 soil moisture:46
Published Temperature = 77 C Humidity:65 soil moisture:92
Published Temperature = 4 C Humidity:77 soil moisture:100
Published Temperature = 81 C Humidity:53 soil moisture:42
Published Temperature = 99 C Humidity:47 soil moisture:33
Published Temperature = 86 C Humidity:69 soil moisture:66
Published Temperature = 31 C Humidity:37 soil moisture:12
Published Temperature = 48 C Humidity:39 soil moisture:58
Published Temperature = 1 C Humidity:25 soil moisture:73
Published Temperature = 88 C Humidity:75 soil moisture:76
Published Temperature = 86 C Humidity:44 soil moisture:68
Published Temperature = 79 C Humidity:90 soil moisture:91
Published Temperature = 47 C Humidity:4 soil moisture:68
Published Temperature = 94 C Humidity:79 soil moisture:67
Command received: MotorON
motor in on
Published Temperature = 31 C Humidity:8 soil moisture:75
Command received: MotorOFF
motor is off
Published Temperature = 29 C Humidity:93 soil moisture:27
Published Temperature = 4 C Humidity:77 soil moisture:6
```

Ln: 102 Col: 0

IBM Watson IoT Platform (Top Right)

19ec138@psgitech.ac.in
ID: 75b0l2

Browse   Action   Device Types   Interfaces   **Add Device**

Search by Device ID   Device Simulator

	Device ID	Status	Device
	12345	Connected	NodeM

The recent events listed show the live stream of data that is coming and goin

Event	Value
IoTSensor	{"temp":29,"humid":93,"soil":27}
IoTSensor	{"temp":31,"humid":8,"soil":75}
IoTSensor	{"temp":94,"humid":79,"soil":67}
IoTSensor	{"temp":47,"humid":4,"soil":68}
IoTSensor	{"temp":79,"humid":90,"soil":91}

Second Screenshot — Python Shell (Bottom Left)

```
Published Temperature = 51 C Humidity:73 soil moisture:17
Published Temperature = 37 C Humidity:28 soil moisture:41
Published Temperature = 77 C Humidity:89 soil moisture:46
Published Temperature = 91 C Humidity:53 soil moisture:85
Published Temperature = 94 C Humidity:71 soil moisture:34
Published Temperature = 52 C Humidity:44 soil moisture:28
Published Temperature = 67 C Humidity:52 soil moisture:76
Published Temperature = 68 C Humidity:35 soil moisture:63
Published Temperature = 68 C Humidity:68 soil moisture:50
Published Temperature = 16 C Humidity:7 soil moisture:27
Published Temperature = 14 C Humidity:55 soil moisture:41
Published Temperature = 3 C Humidity:57 soil moisture:21
Published Temperature = 57 C Humidity:16 soil moisture:46
Published Temperature = 77 C Humidity:65 soil moisture:92
Published Temperature = 4 C Humidity:77 soil moisture:100
Published Temperature = 81 C Humidity:53 soil moisture:42
Published Temperature = 99 C Humidity:47 soil moisture:33
Published Temperature = 86 C Humidity:69 soil moisture:66
Published Temperature = 31 C Humidity:37 soil moisture:12
Published Temperature = 48 C Humidity:39 soil moisture:58
Published Temperature = 1 C Humidity:25 soil moisture:73
Published Temperature = 88 C Humidity:75 soil moisture:76
Published Temperature = 86 C Humidity:44 soil moisture:68
Published Temperature = 79 C Humidity:90 soil moisture:91
Published Temperature = 47 C Humidity:4 soil moisture:68
Published Temperature = 94 C Humidity:79 soil moisture:67
Command received: MotorON
motor in on
Published Temperature = 31 C Humidity:8 soil moisture:75
Command received: MotorOFF
motor is off
Published Temperature = 29 C Humidity:93 soil moisture:27
Published Temperature = 4 C Humidity:77 soil moisture:6
Published Temperature = 59 C Humidity:55 soil moisture:42
Published Temperature = 46 C Humidity:7 soil moisture:54
Published Temperature = 59 C Humidity:17 soil moisture:51
Published Temperature = 32 C Humidity:99 soil moisture:77
Published Temperature = 89 C Humidity:87 soil moisture:78
Published Temperature = 97 C Humidity:51 soil moisture:17
Published Temperature = 9 C Humidity:35 soil moisture:10
Published Temperature = 13 C Humidity:80 soil moisture:40
Published Temperature = 49 C Humidity:11 soil moisture:77
Published Temperature = 35 C Humidity:91 soil moisture:20
Published Temperature = 97 C Humidity:80 soil moisture:53
Published Temperature = 73 C Humidity:8 soil moisture:34
```

Ln: 110 Col: 0

MIT App Inventor (Bottom Right)

iotapp   Screen1 ▼   Add Screen ...   Remove Screen   Publish to Gallery

Palette

Search Components...

User Interface

Layout

- HorizontalArrangement
- HorizontalScrollArrangement
- TableArrangement
- VerticalArrangement
- VerticalScrollArrangement

Media
Drawing and Animation
Maps
Charts
Sensors
Social
Storage
Connectivity
LEGO® MINDSTORMS®
Experimental

Viewer

Display hidden components in Viewer

Phone size (505,320) ▼

Smart Farmer App   9:48

MONITORING LAYOUT

Temperature

Humidity

Soil Moisture

CONTROLLING LAYOUT

Motor ON   Motor OFF

Components

- Screen1
  - Horizont
    - Labe
  - Horizont
    - Labe
    - TextB
  - Horizont
    - Labe
    - TextB
  - Horizont
    - Labe
    - TextB
  - Horizont
    - Labe
    - TextB
  - Horizont
    - Butto
    - Butto

Rename

Media

Upload

Python 3.7.0 Shell

File Edit Shell Debug Options Window Help

```
Published Temperature = 86 C Humidity:44 soil moisture:68
Published Temperature = 79 C Humidity:90 soil moisture:91
Published Temperature = 47 C Humidity:4 soil moisture:68
Published Temperature = 94 C Humidity:79 soil moisture:67
Command received: MotorON
motor in on
Published Temperature = 31 C Humidity:8 soil moisture:75
Command received: MotorOFF
motor is off
Published Temperature = 29 C Humidity:93 soil moisture:27
Published Temperature = 4 C Humidity:77 soil moisture:6
Published Temperature = 59 C Humidity:55 soil moisture:42
Published Temperature = 46 C Humidity:7 soil moisture:54
Published Temperature = 59 C Humidity:17 soil moisture:51
Published Temperature = 32 C Humidity:99 soil moisture:77
Published Temperature = 89 C Humidity:87 soil moisture:78
Published Temperature = 97 C Humidity:51 soil moisture:17
Published Temperature = 9 C Humidity:35 soil moisture:10
Published Temperature = 13 C Humidity:80 soil moisture:40
Published Temperature = 49 C Humidity:11 soil moisture:77
Published Temperature = 35 C Humidity:91 soil moisture:20
Published Temperature = 97 C Humidity:80 soil moisture:53
Published Temperature = 73 C Humidity:8 soil moisture:34
Published Temperature = 23 C Humidity:13 soil moisture:83
Published Temperature = 90 C Humidity:29 soil moisture:29
Published Temperature = 65 C Humidity:9 soil moisture:83
Published Temperature = 40 C Humidity:7 soil moisture:68
Published Temperature = 71 C Humidity:52 soil moisture:80
Published Temperature = 93 C Humidity:78 soil moisture:12
Published Temperature = 54 C Humidity:1 soil moisture:37
Published Temperature = 17 C Humidity:12 soil moisture:39
Published Temperature = 18 C Humidity:97 soil moisture:48
Published Temperature = 64 C Humidity:29 soil moisture:58
Published Temperature = 56 C Humidity:72 soil moisture:93
Published Temperature = 91 C Humidity:91 soil moisture:64
Published Temperature = 67 C Humidity:93 soil moisture:65
Published Temperature = 38 C Humidity:13 soil moisture:47
Published Temperature = 22 C Humidity:45 soil moisture:26
Published Temperature = 78 C Humidity:65 soil moisture:33
Published Temperature = 11 C Humidity:90 soil moisture:53
Published Temperature = 64 C Humidity:44 soil moisture:71
Published Temperature = 100 C Humidity:2 soil moisture:21
Published Temperature = 29 C Humidity:25 soil moisture:58
Published Temperature = 78 C Humidity:58 soil moisture:17
Published Temperature = 90 C Humidity:21 soil moisture:34
```

MIT App Inventor — iotapp (Blocks view)

Projects · Connect · Build · Settings · Help · My Projects · View Trash · Guide · Report an Issue · English · 19ec138@psgitech.ac.in

Not secure | http://ai2.appinventor.mit.edu/#5721328091791360

Blocks · Viewer

Built-in: Control, Logic, Math, Text, Lists, Dictionaries, Colors, Variables, Procedures

Screen1 — HorizontalArrangemen (Label1), HorizontalArrangemen (Label2, TextBox1), HorizontalArrangemen

Show Warnings

---

iot final code.py - F:\1 Sem 7\IBM project\iot final code.py (3.7.0)

File Edit Format Run Options Window Help

```
authToken = "12345678"

# Init...
def my...
    pr...
    st...
    if...
    el...

try:

except

# Conn...
device...

while ...

# Disc...
deviceC11.
```

Python 3.7.0 Shell

File Edit Shell Debug Options Window Help

```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
============== RESTART: F:\1 Sem 7\IBM project\iot final code.py ==============
2022-11-08 23:25:34,002  ibmiotf.device.Client    INFO    Connected successfully: d:75b012:NodeMCU:12345
Published Temperature = 49 C Humidity:35 soil moisture:57
Published Temperature = 1 C Humidity:61 soil moisture:1
Published Temperature = 59 C Humidity:8 soil moisture:80
Published Temperature = 44 C Humidity:49 soil moisture:95
Published Temperature = 6 C Humidity:46 soil moisture:35
Published Temperature = 74 C Humidity:73 soil moisture:17
Published Temperature = 33 C Humidity:51 soil moisture:77
Published Temperature = 57 C Humidity:21 soil moisture:56
Command received: MotorON
motor in on
Published Temperature = 19 C Humidity:50 soil moisture:24
Command received: MotorOFF
motor is off
Published Temperature = 32 C Humidity:56 soil moisture:72
Published Temperature = 34 C Humidity:42 soil moisture:57
Published Temperature = 20 C Humidity:3 soil moisture:85
Published Temperature = 3 C Humidity:83 soil moisture:46
Published Temperature = 66 C Humidity:25 soil moisture:97
Published Temperature = 78 C Humidity:57 soil moisture:26
Published Temperature = 75 C Humidity:41 soil moisture:75
Published Temperature = 80 C Humidity:55 soil moisture:81
Published Temperature = 62 C Humidity:85 soil moisture:73
Published Temperature = 25 C Humidity:35 soil moisture:99
```

Ln: 20 Col: 0

Node-RED

Not secure | http://169.51.194.85:31069/r...   Deploy

Q filter nodes · Flow 1 · debug

Nodes: g V1 model manager, speech to text, speech to text custom builder, text to speech, text to speech custom builder, tone analyzer v3

dashboard: button, dropdown, switch, slider, numeric, text input

Flow nodes: IBM IoT (connected), [get] /sensor, [get] /control, msg.payload, inject

all nodes · all

```
11/8/2022, 11:25:41 PM  node: f2f2649a.0d0d98
iot-2/type/NodeMCU/id/12345/evt/IoTSensor/fmt/json :
msg.payload : Object
▶{ temp: 57, humid: 21, soil: 56 }

11/8/2022, 11:25:41 PM  node: f2f2649a.0d0d98
iot-2/type/NodeMCU/id/12345/evt/IoTSensor/fmt/json :
msg.payload : number
57

11/8/2022, 11:25:42 PM  node: 7ec5bdeb258cfece
msg.payload : Object
▶{ command: "MotorON" }

11/8/2022, 11:25:42 PM  node: 7ec5bdeb258cfece
msg.payload : Object
▶{ command: "MotorOFF" }

11/8/2022, 11:25:42 PM  node: f2f2649a.0d0d98
iot-2/type/NodeMCU/id/12345/evt/IoTSensor/fmt/json :
msg.payload : Object
▶{ temp: 19, humid: 50, soil: 24 }

11/8/2022, 11:25:43 PM  node: f2f2649a.0d0d98
iot-2/type/NodeMCU/id/12345/evt/IoTSensor/fmt/json :
msg.payload : number
19

11/8/2022, 11:25:43 PM  node: f2f2649a.0d0d98
msg.payload : Object
```

Ln: 28 Col: 0