

project development phase sprint 1

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|--------------|---|
| Date | 14 NOV 2022 |
| Team ID | PNT2022TMID11461 |
| Project Name | IOT Based Smart Crop Protection System For Agriculture |

To develop a web application using node red using node red

The screenshot displays the MIT App Inventor web application development environment. The browser address bar shows the URL `ai2.appinventor.mit.edu/#5796383014387712`. The interface is divided into several sections:

- User Interface Components:** A list of components on the left, including Button, CheckBox, DatePicker, Image, Label, ListPicker, ListView, Notifier, PasswordTextBox, Slider, Spinner, Switch, TextBox, TimePicker, and WebViewer.
- Phone Preview:** A central area showing a mobile phone screen with a diagram of an IoT-based smart crop protection system. The diagram includes a Drone, Cloud Server, Weather Station, and a field with cows. A green banner across the field reads "Monitoring for Monitoring Devices".
- Properties Panel:** A panel on the right showing the properties of the selected component (Screen1). Properties include AboutScreen, AccentColor, AlignHorizontal, AlignVertical, AppName (set to "iot_based_smart_crop"), BackgroundColor, BackgroundImage, BigDefaultText, BlocksToolkit, CloseScreenAnimation, DefaultFileScope, HighContrast, and Icon.
- Media Panel:** A panel at the bottom right showing a media gallery with a file named "iot.jpeg" and an "Upload File..." button.

The Windows taskbar at the bottom shows the system clock as 11:20 AM on 19-11-2022, and the temperature as 29°C.

IBM

IBM-30185-1662617556

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iot_based_smart_crop

Screen2 - Add Screen ... Remove Screen Publish to Gallery

DesignerBlocks

Search Components...

User Interface

Button

CheckBox

DatePicker

Image

Label

ListPicker

ListView

Notifier

PasswordTextBox

Slider

Spinner

Switch

TextBox

TimePicker

WebView

Viewer

☐ Display hidden components in Viewer

Phone size (505,320) ▾

Screen2

Iot based smart crop protection

Register now

UserName

Email Id

Password

Address

Phone no

Submit

Text for Label1

Text for Label2

Text for Label3

Text for Label4

Text for Label5

Components

Screen2

TextBox1

TextBox2

HorizontalArrangement1

VerticalArrangement1

TextBox3

TextBox4

TextBox5

TextBox6

TextBox7

Button1

VerticalArrangement2

Label1

Label2

Label3

Label4

Label5

Rename

Delete

Media

Properties

Screen2

AboutScreen

AlignHorizontal

Left : 1 ▾

AlignVertical

Top : 1 ▾

BackgroundColor

Default

BackgroundImage

None...

BigDefaultText

☐

CloseScreenAnimation

Default ▾

HighContrast

☐

OpenScreenAnimation

Default ▾

ScreenOrientation

Unspecified ▾

Scrollable

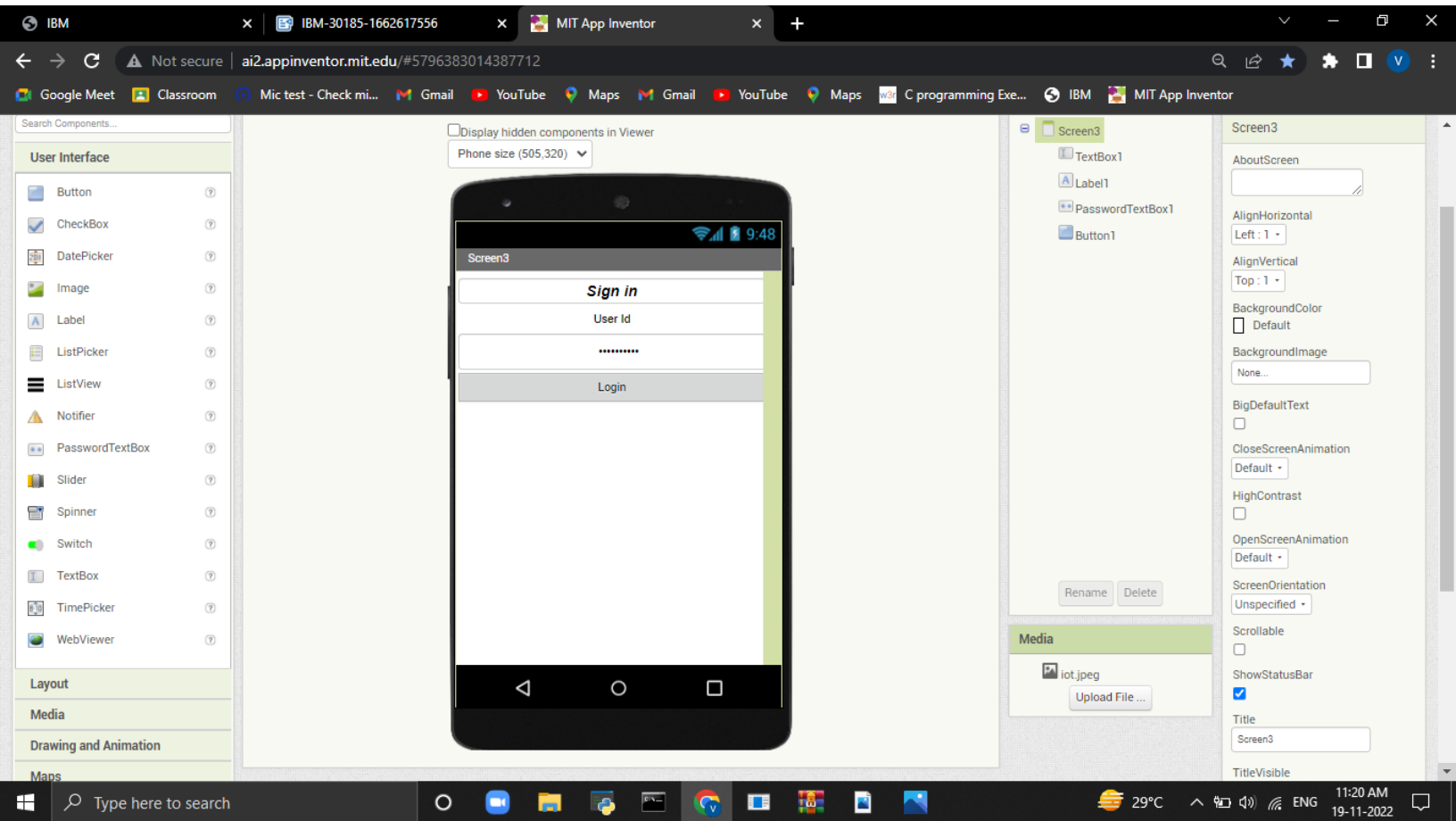
☐

Type here to search

29°C

11:20 AM

19-11-2022



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iot_based_smart_crop Screen4 Add Screen Remove Screen Publish to Gallery Designer Blocks

Palette Search Components... User Interface Button CheckBox DatePicker Image Label ListPicker ListView Notifier PasswordTextBox Slider Spinner Switch TextBox TimePicker WebViewer

Viewer ☐ Display hidden components in Viewer Phone size (505,320) Screen4 Humidity Temperature Soil moisture Sensor Detection Check

Components Screen4 TextBox1 Label1 HorizontalArrangement1 Label2 HorizontalArrangement2 Label3 HorizontalArrangement3 Label4 HorizontalArrangement4 Button1

Properties Screen4 AboutScreen Left: 1 AlignVertical Top: 1 BackgroundColor Default BackgroundImage None... BigDefaultText CloseScreenAnimation Default HighContrast OpenScreenAnimation Default ScreenOrientation Unspecified Scrollable

Type here to search 29°C 11:21 AM 19-11-2022

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iot_based_smart_crop Screen1 Add Screen Remove Screen Publish to Gallery Designer Blocks

Blocks Built-in Control Logic Math Text Lists Dictionaries Colors Variables Procedures Screen1 Image1 Any component

Viewer when Screen1 .BackPressed do open another screen screenName Screen2

Show Warnings

Type here to search 29°C 11:23 AM 19-11-2022

MIT App Inventor interface showing a project titled "iot_based_smart_crop". The interface includes a Blocks palette on the left, a Viewer area in the center, and a Media area at the bottom. The Viewer area displays a logic block for "when Button1.TouchUp" with the following code:

```
when Button1.TouchUp
do
  if length(Label1.Text) <= 0
  then
    set Label1.Text to "User name must not be empty"
  else
    if length(Label1.Text) <= 15
    then
      set Label3.Text to "Password maximum 15 characers"
    else
      if not contains(text: TextBox2.Visible, piece: "@")
      then
        set Label2.Text to "Email Id"
      else
```

The interface also shows a list of components in the Blocks palette, including Screen2, TextBox1, TextBox2, HorizontalArrangement1, VerticalArrangement1, TextBox3, TextBox4, TextBox5, TextBox6, TextBox7, Button1, VerticalArrangement2, Label1, Label2, Label3, Label4, and Label5.

Node-RED interface showing a flow titled "Flow 1". The flow includes the following components:

- msg payload
- function
- switch
- humidity
- switch
- function
- http request
- function
- http
- msg payload
- template

The flow is connected to an IBM IoT node. The debug console shows the following log entries:

```
11/19/2022, 10:05:21 AM node: f2f2649a.0d0d98
iot-2/type/abcd/1234/evt/event_1/fmt/json :
msg.payload : Object
{
  randomNumber: 26, temp: 25, hum: 82
}

11/19/2022, 10:06:25 AM node: f2f2649a.0d0d98
iot-2/type/abcd/1234/evt/event_1/fmt/json :
msg.payload : Object
{
  randomNumber: 72, temp: 36, hum: 98
}

11/19/2022, 10:06:53 AM node: f2f2649a.0d0d98
iot-2/type/abcd/1234/evt/event_1/fmt/json :
msg.payload : Object
{
  randomNumber: 76, temp: 20, hum: 94
}

11/19/2022, 10:07:24 AM node: f2f2649a.0d0d98
iot-2/type/abcd/1234/evt/event_1/fmt/json :
msg.payload : Object
{
  randomNumber: 73, temp: 64, hum: 97
}

11/19/2022, 10:07:24 AM node: f2f2649a.0d0d98
iot-2/type/abcd/1234/evt/event_1/fmt/json :
msg.payload : Object
{
  randomNumber: 15, temp: 80, hum: 85
}
```

The screenshot displays the Node-RED web interface in a browser. The main workspace shows a flow named 'Flow 1'. On the left, there is a 'dashboard' tab with a 'gauge' widget. The main flow starts with an 'IBM IoT' node (blue) which is connected. This node branches into three parallel paths. Each path consists of a 'function' node (orange) followed by a sensor node (teal): 'temperature', 'humidity', and 'msg.payload'. The 'msg.payload' node is connected to a 'msg.payload' output node (green). The right sidebar shows a 'debug' console with log messages for each path, displaying random numbers, temperatures, and humidities.

```

graph LR
    IoT[IBM IoT] --> F1[function]
    IoT --> F2[function]
    IoT --> F3[function]
    F1 --> Temp[temperature]
    F2 --> Hum[humidity]
    F3 --> Payload[msg.payload]
    Temp --> Out1[msg.payload]
    Hum --> Out2[msg.payload]
    Payload --> Out3[msg.payload]
  
```

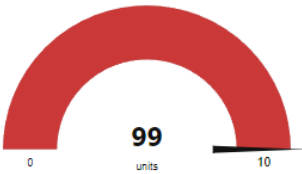
Debug Console Log:

```

{ randomNumber: 11, temp: 69, hum: 86 }
11/19/2022, 10:32:29 AM node: f2f2649a.0d0d98
iot-2/type/abcd/id/1234/evt/event_1/fmt/json:
msg.payload: Object
{ randomNumber: 4, temp: 74, hum: 92 }
11/19/2022, 10:32:59 AM node: f2f2649a.0d0d98
iot-2/type/abcd/id/1234/evt/event_1/fmt/json:
msg.payload: Object
{ randomNumber: 16, temp: 12, hum: 87 }
11/19/2022, 10:33:29 AM node: f2f2649a.0d0d98
iot-2/type/abcd/id/1234/evt/event_1/fmt/json:
msg.payload: Object
{ randomNumber: 41, temp: 58, hum: 99 }
11/19/2022, 10:33:59 AM node: f2f2649a.0d0d98
iot-2/type/abcd/id/1234/evt/event_1/fmt/json:
msg.payload: Object
{ randomNumber: 59, temp: 23, hum: 89 }
  
```

crop protection

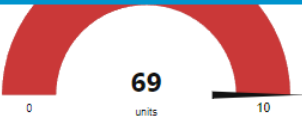
Humidity



MOTOR ON

MOTOR OFF

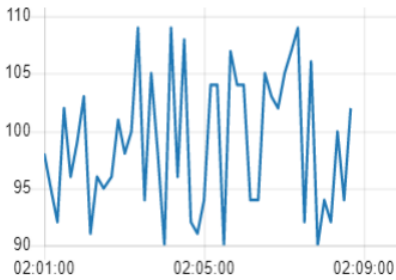
sensor data

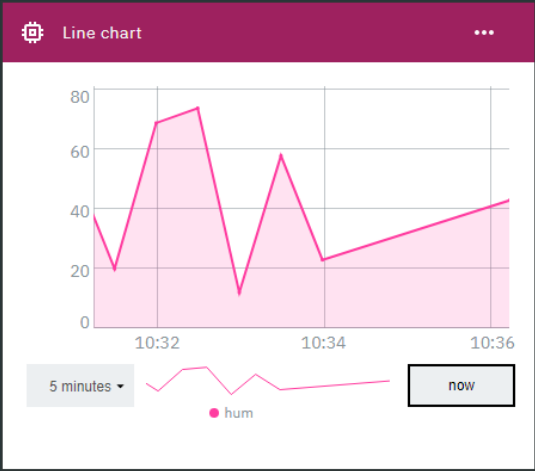


MOTOR ON

MOTOR OFF

sensor data





1 Simulation running