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*Date 20/7/2023*

*CSM3313*

*IOT COMPUTING*

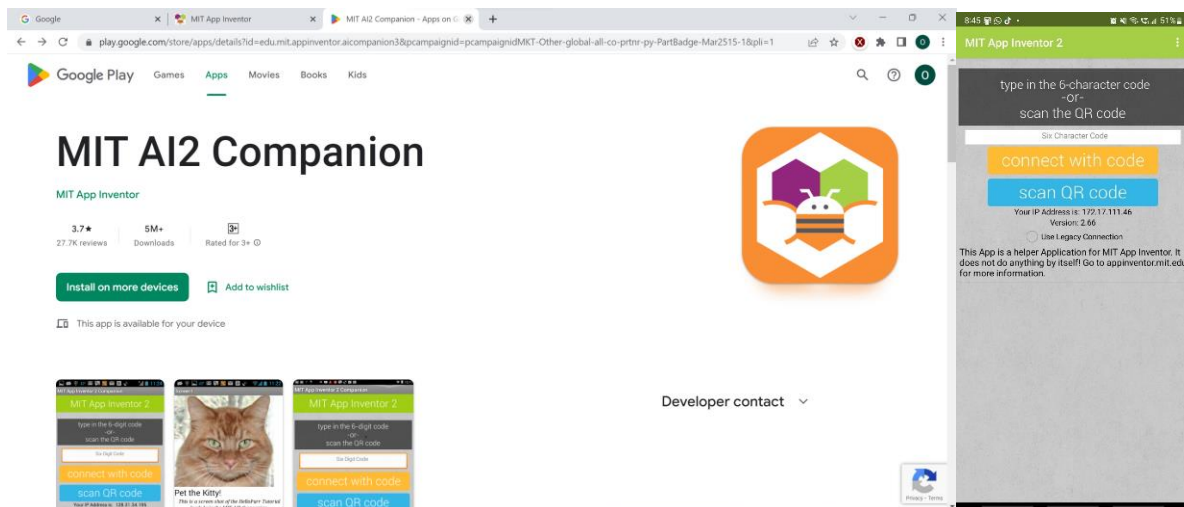
*DR AHMAD SHUKRI BIN MOHD NOOR*

*OMAR ISMAIL ABDJALEEL ALOMORY*

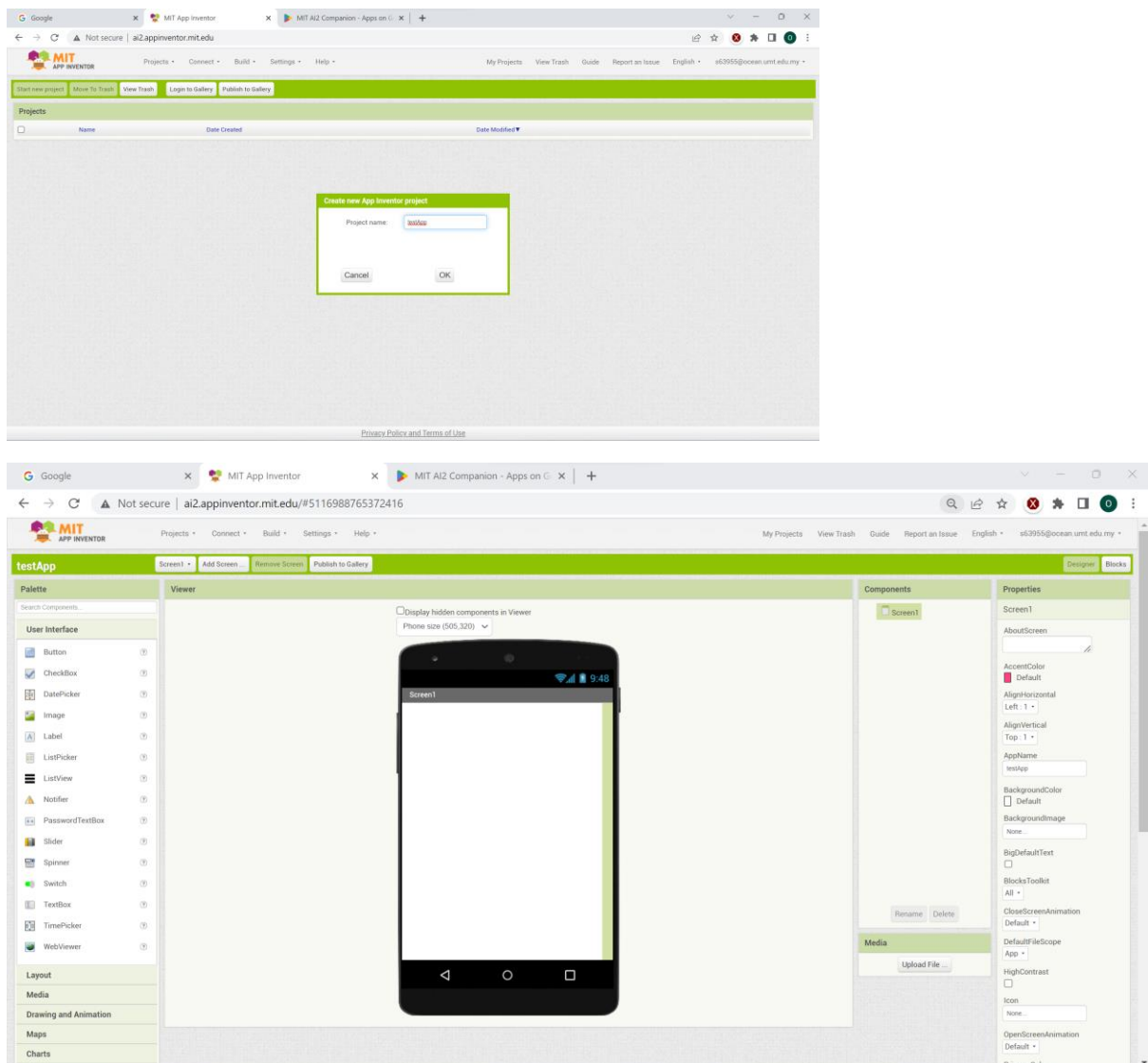
*LAB 3(MP2)*

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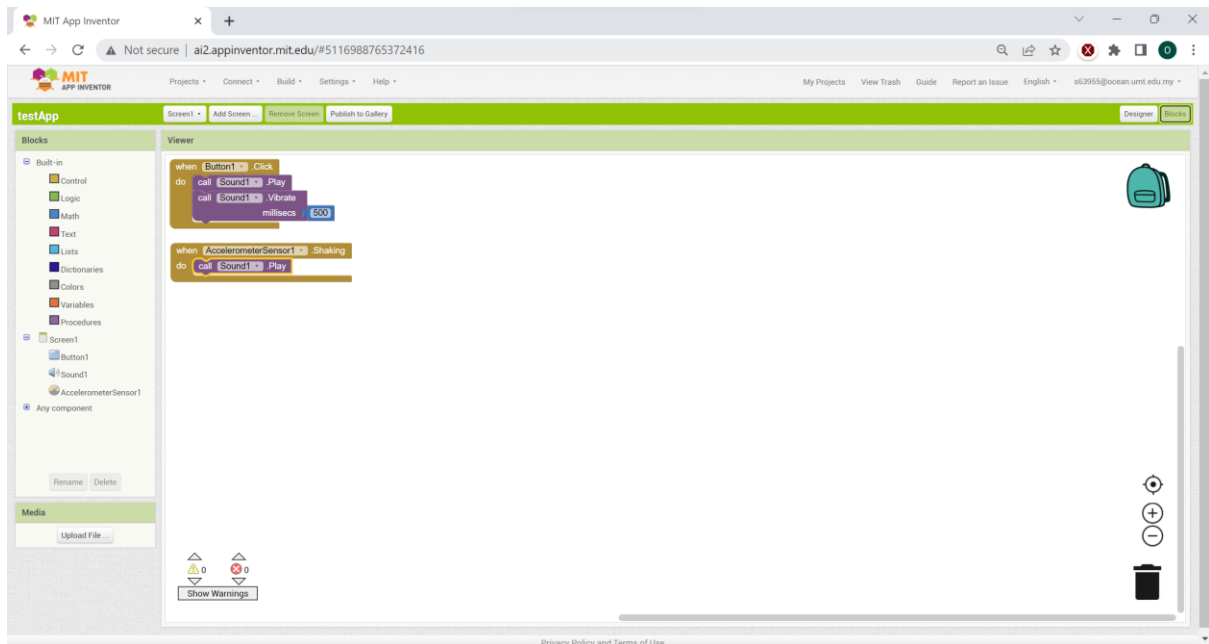
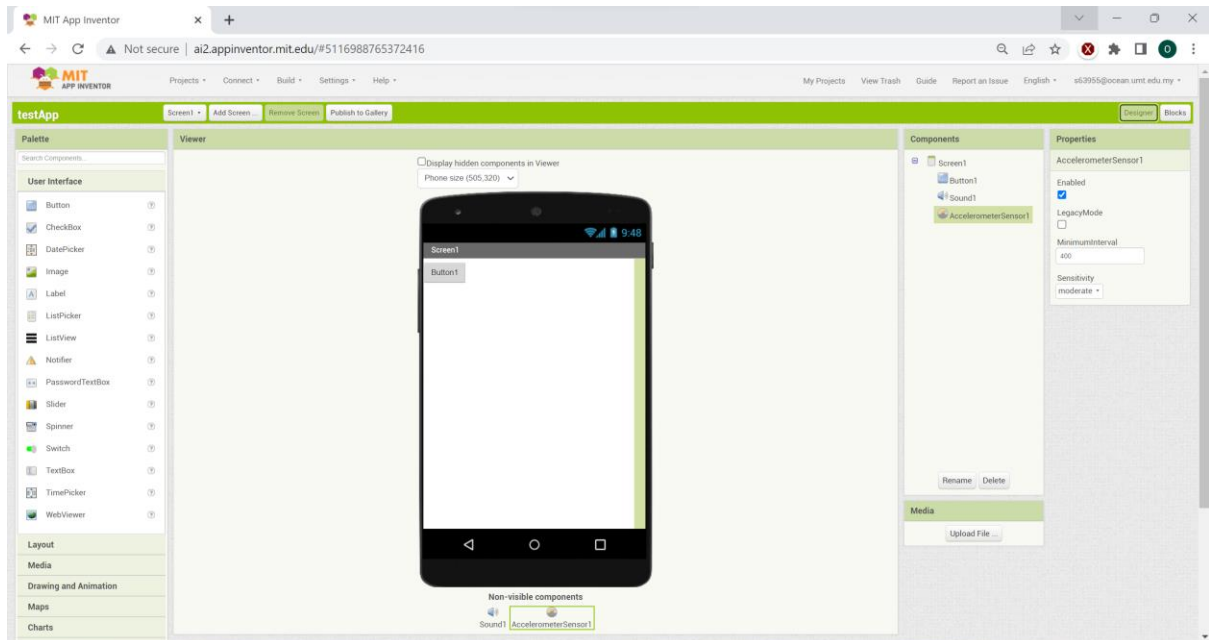
## Installing the app to my phone



## Creating testApp project

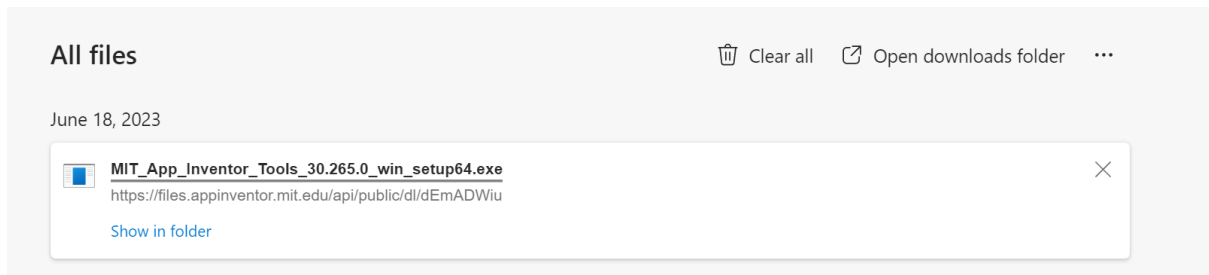


## Adding the component to the app



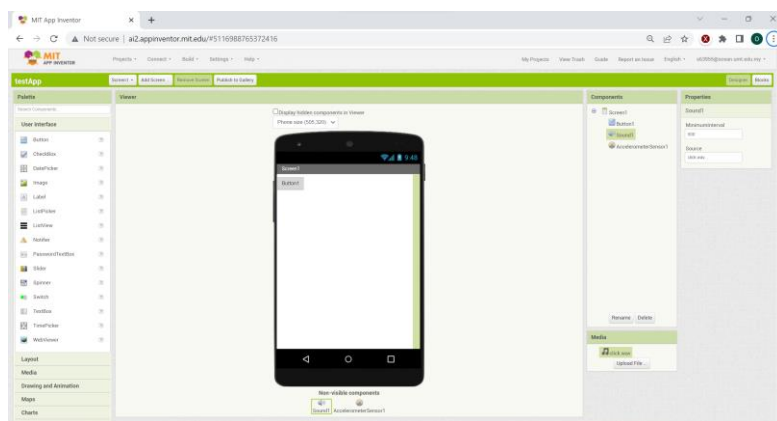
## LAB 2: SETTING UP CONNECTION FOR MIT APP INVENTOR 2

MIT app inventor tools installed successfully to my laptop. I have downloaded it in case we will need it in future. But I am going to do the steps of connection via wifi.



Connection made successfully.

MIT Website view

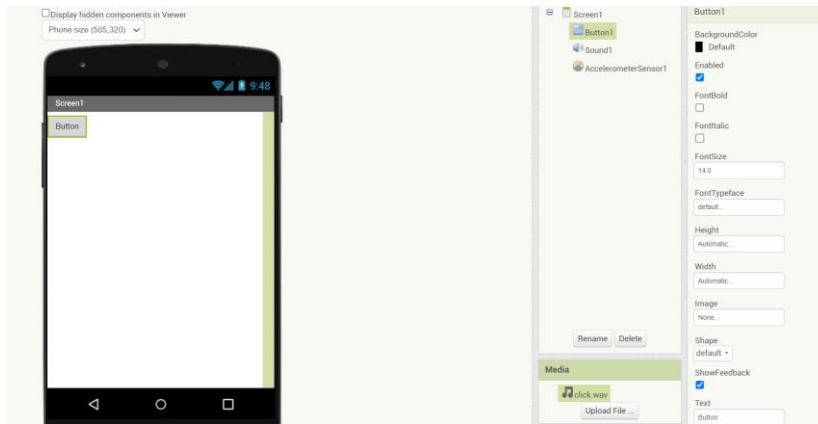


Phone view: all the button and vibration is just working fine, I also uploaded media to test it and it works as well.

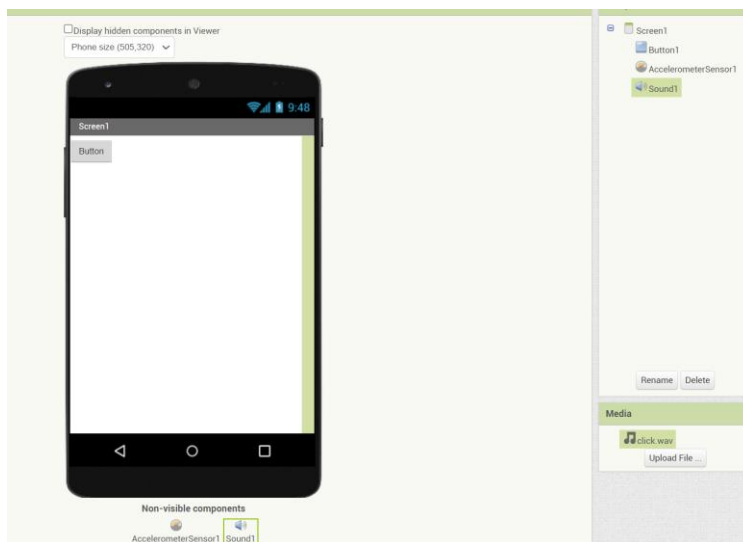


## LAB 3: BUILDING YOUR FIRST APP USING MIT APP INVENTOR 2

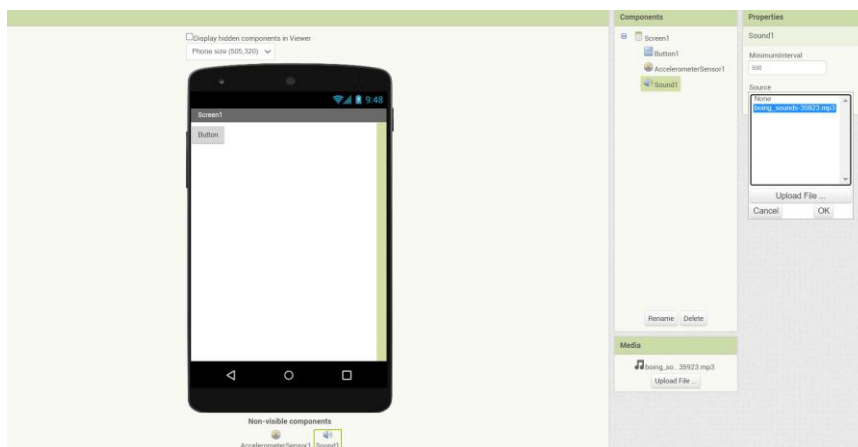
adding button and changing its name from text button1 to button



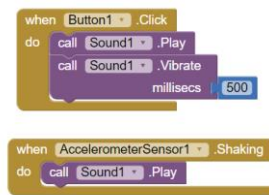
Adding Accelerometer sensor and Sound



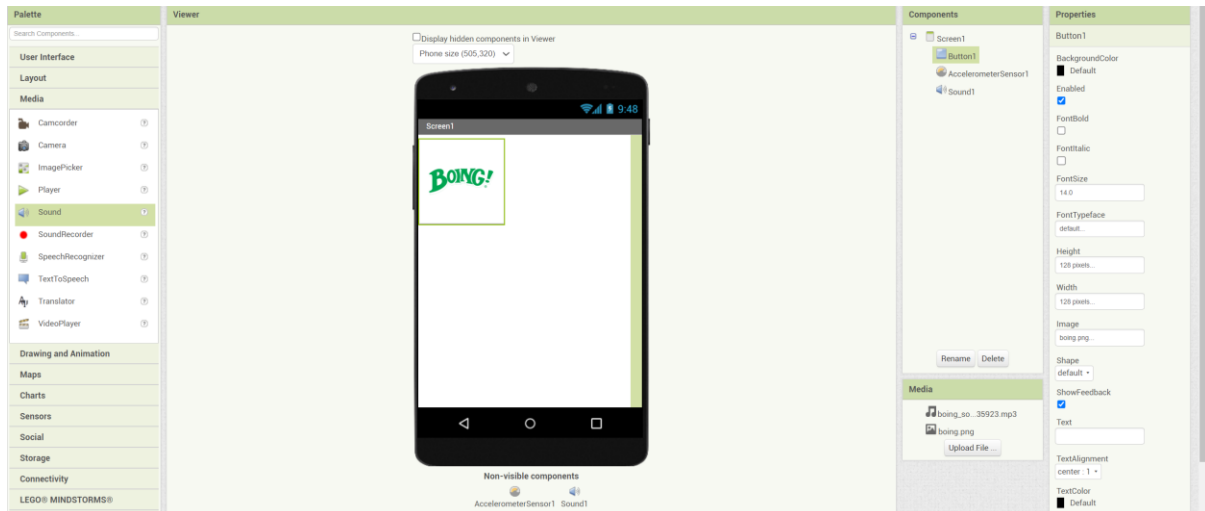
Uploading and adding the sound to our component



## Implementing code in MIT App Inventor



## Website view

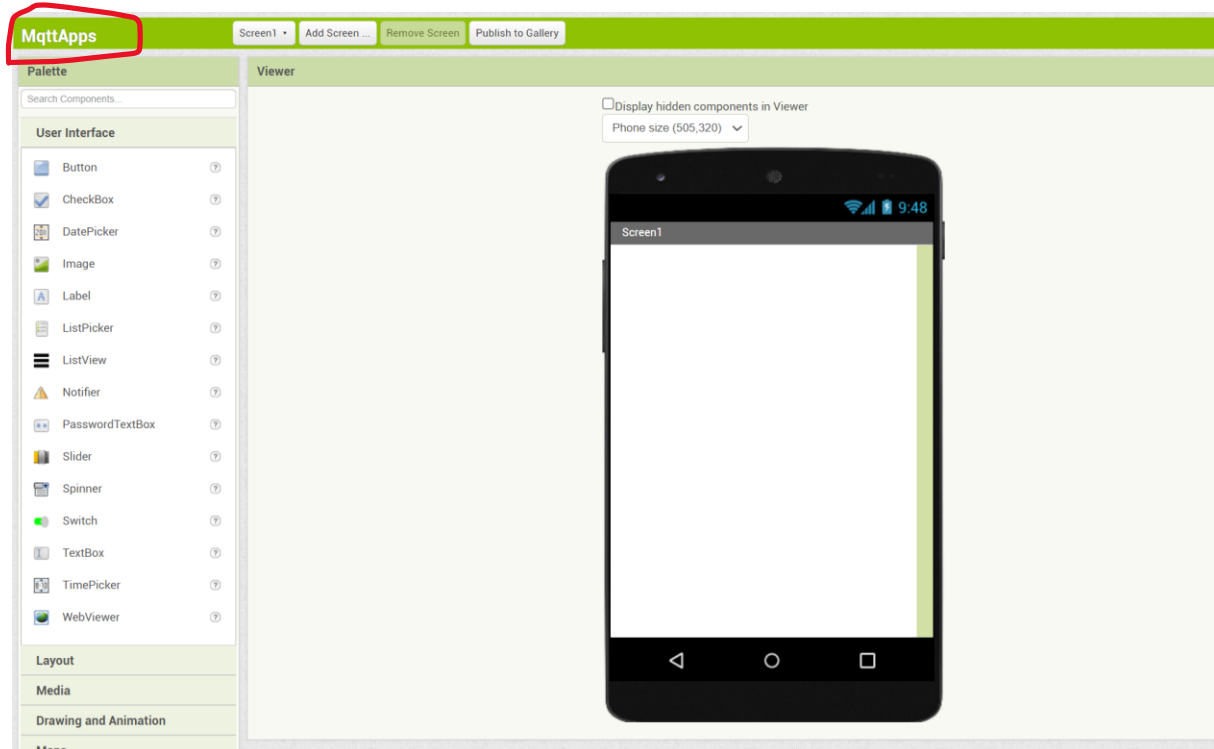


Phone view: when we click the boing image it trigger the sound effect and vibration, also when we shake the phone it triggers the sound effect.



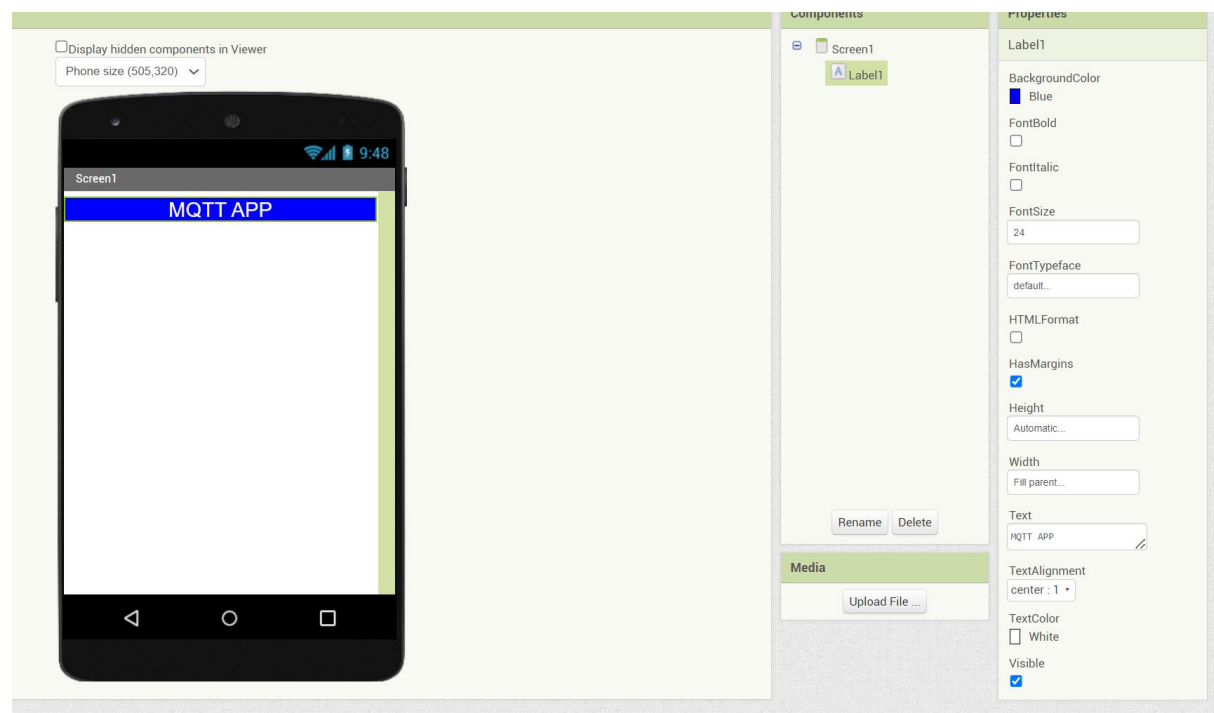
## LAB 4: DEVELOPING INTERNET OF THINGS APP USING MIT APP INVENTOR 2

creating new project called MqttApps



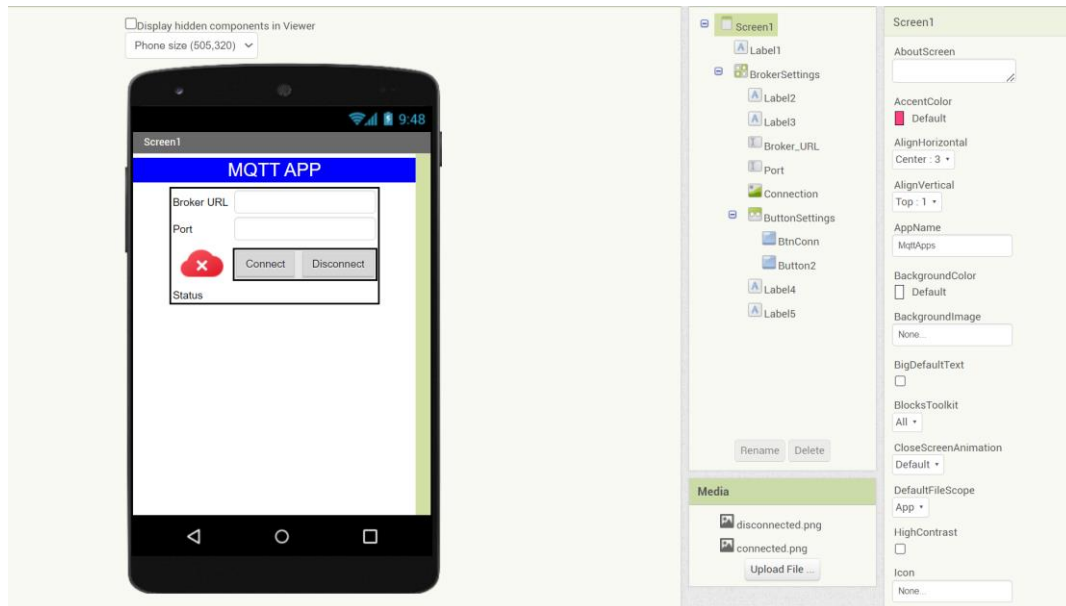
### Designing the Broker Settings

Changing label properties:

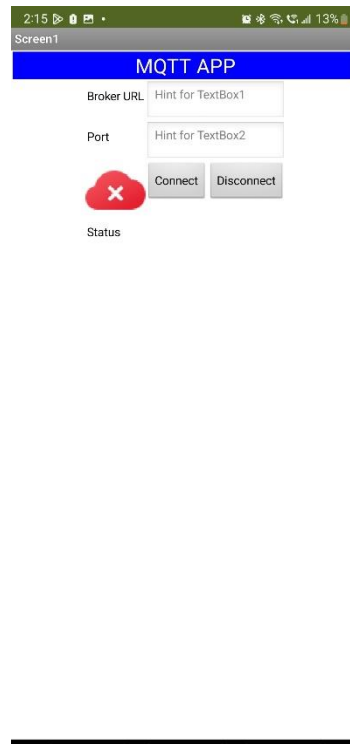


Final output

Website view



Phone view

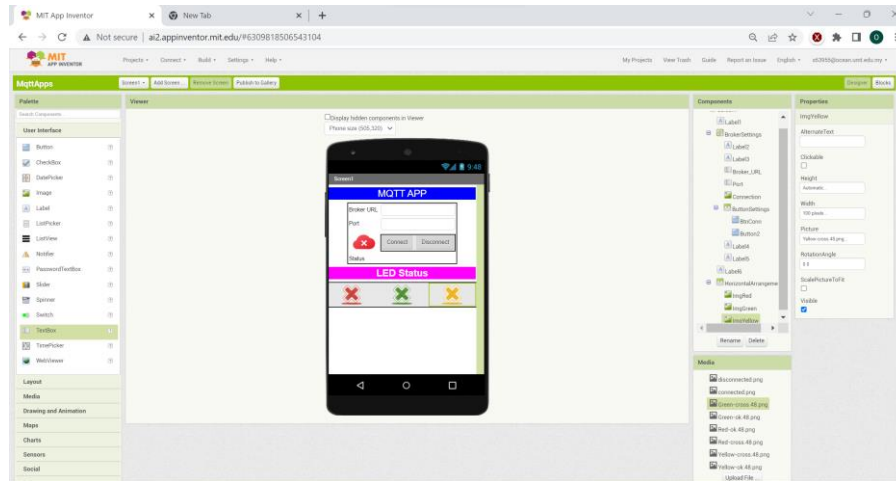




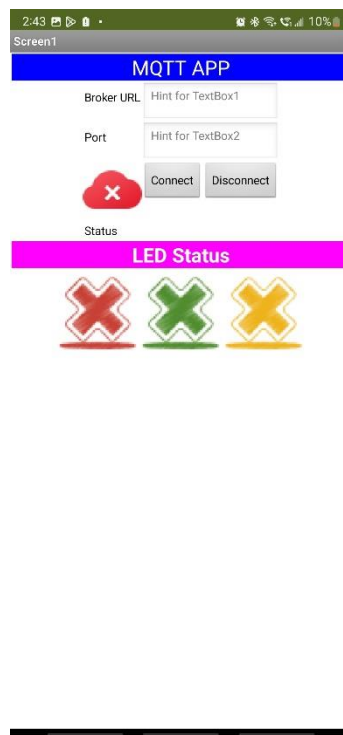
## Designing LED Status

## Final output

## website view

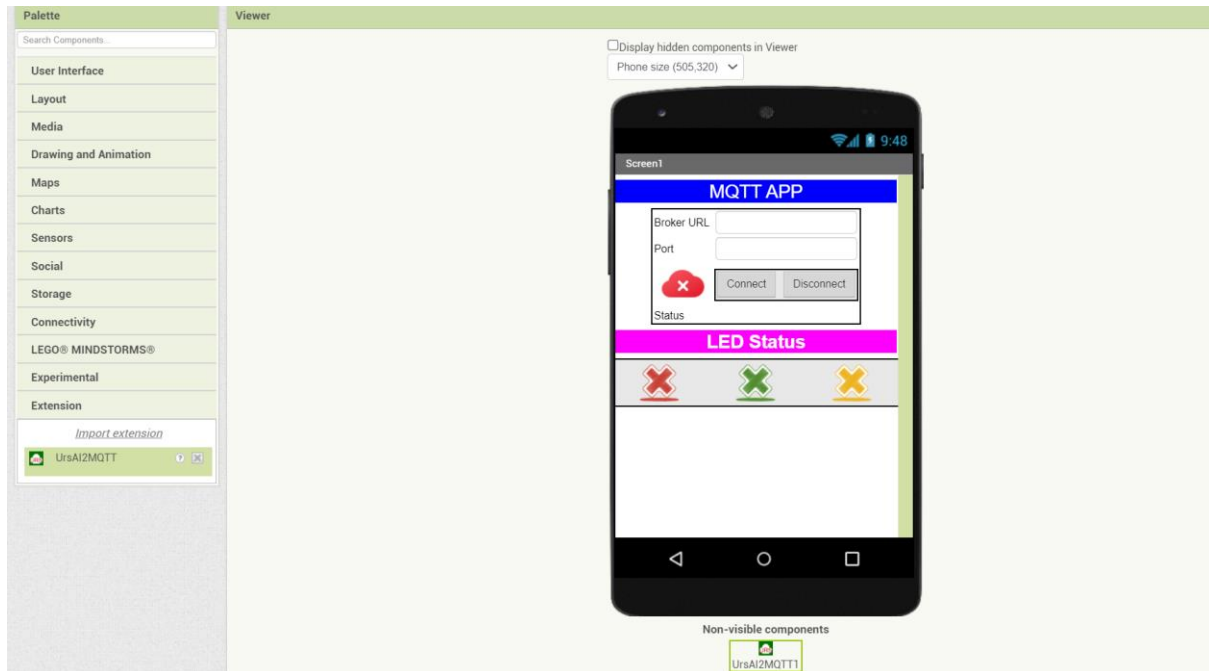


## Phone view

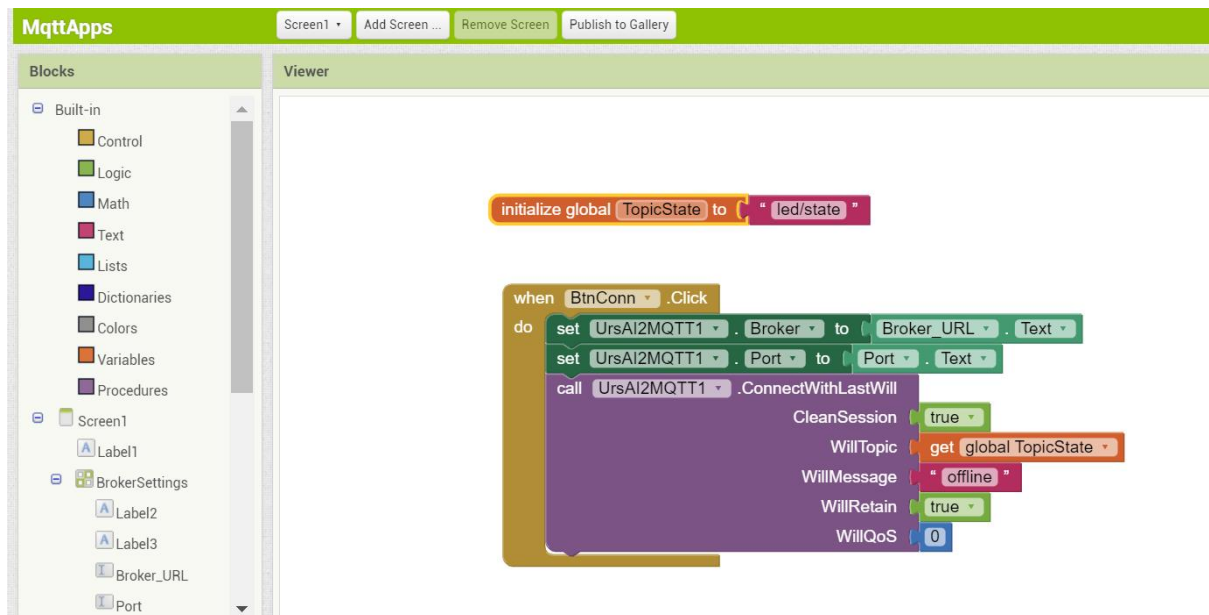


## Coding the Connection Settings

### Downloading and importing the required extension



### Building the initiation for connection



## Coding the Topic Settings

Viewer

```

initialize global (TopicState) to ("led/state")

when BtnConn Click
do
  set UrsAI2MQTT1 Broker to Broker_URL Text
  set UrsAI2MQTT1 Port to Port Text
  call UrsAI2MQTT1 .ConnectWithLastWill
    CleanSession true
    WillTopic get global TopicState
    WillMessage "offline"
    WillRetain true
    WillQoS 0

  initialize global (Trace) to create empty list

  to procedure RS Topic Msg
  do
    add items to list list get global Trace
    item join get RS
    get Topic
    get Msg

    if length of list list get global Trace > 6
    then
      remove list item list get global Trace
      index 1
      set txtStatus Text to join items using separator "\n"
      list get global Trace
  
```

0 0  
Show Warnings

## Coding the Connection Change Settings

```

initialize global (LightsRed) to "OFF"
initialize global (LightsGreen) to "OFF"
initialize global (LightsYellow) to "OFF"

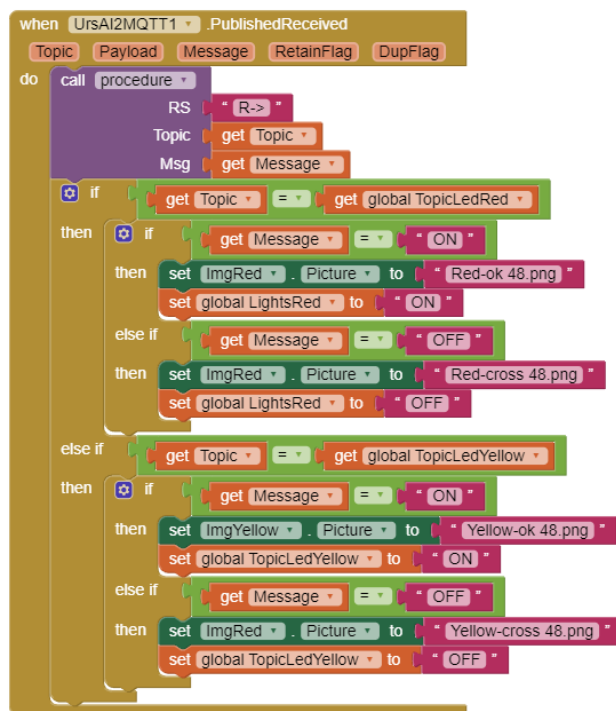
initialize global (TopicLedRed) to "rdkazeen/ledred"
initialize global (TopicLedGreen) to "rdkazeen/ledgreen"
initialize global (TopicLedYellow) to "rdkazeen/ledyellow"

when UrsAI2MQTT1 ConnectionStateChanged
  NewState StateString
  do
    set txtStatus Text to get StateString
    set BnDisconn Visible to false
    set BnConn Visible to false
    set BnNewURL Enabled to false
    set BnTest Enabled to false
    set Connection Picture to disconnected.png

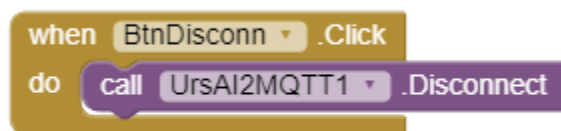
    if get NewState == 0
    then
      set Connection Picture to connected.png
      set BnDisconn Visible to true
      call UrsAI2MQTT1 Subscribe
        Topic get global TopicLedRed
        QoS 0
      call UrsAI2MQTT1 Subscribe
        Topic get global TopicLedGreen
        QoS 0
      call UrsAI2MQTT1 Subscribe
        Topic get global TopicLedYellow
        QoS 0
      call procedure RS
        RS "ESR"
        Topic get global TopicLedRed
        Msg get global LightsRed
      call procedure RS
        RS "ESR"
        Topic get global TopicLedGreen
        Msg get global LightsGreen
    else
      call procedure RS
        RS "ESR"
        Topic get global TopicLedYellow
        Msg get global LightsYellow
    end if

    if 0 <= get NewState <= 1 or 3 <= get NewState <= 4
    then
      set BnDisconn Visible to true
      set BnNewURL Enabled to true
      set BnTest Enabled to true
      set txtStatus Text to UrsAI2MQTT1.LastErrorMessage
    
```

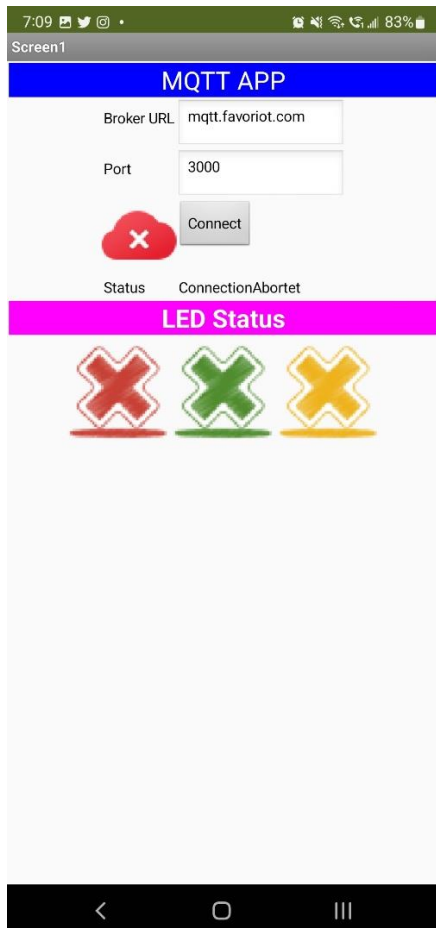
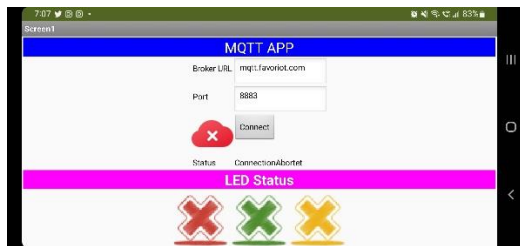
## Coding the Received Payload



## Coding the Disconnect Button



Although I tried to enter the broker URL and the port but I could not connect 🤖 . Port 8883 and 3000



The references for the port number, it was collected from favoriot website

#### Configuration

##### *Send / Publish data*

Use the following configuration to setup your device to send / publish data.

Host : mqtt.favoriot.com

Standard Ports: 1883 and 8883 ( for secure connection using TLS/SSL)

Websocket Port : 3000

# LAB 5: DATA VISUALIZATION USING MIT APP INVENTOR 2

ThingSpeak.

ThingSpeak™

Channels

Apps

Devices

Support

My Channels

New Channel

Search by tag

Q

Name	Created	Updated
<div><div>🔒</div><div>Sensor1</div><div><div>Private</div><div>Public</div><div>Settings</div><div>Sharing</div><div>API Keys</div><div>Data Import / Export</div></div></div>	2023-06-22	2023-06-22 03:48

ThingSpeak™

Channels

Apps

Devices

Support

Sensor1

Channel ID: 2199003

Author: mwa0000030443839

Access: Public

Private View

Public View

Channel Settings

Sharing

API Keys

Data Import / Export

+ Add Visualizations

+ Add Widgets

📄 Export recent data

Channel Stats

Created: a day ago

Entries: 0

Field 1 Chart

🔗

💬

✎

✕

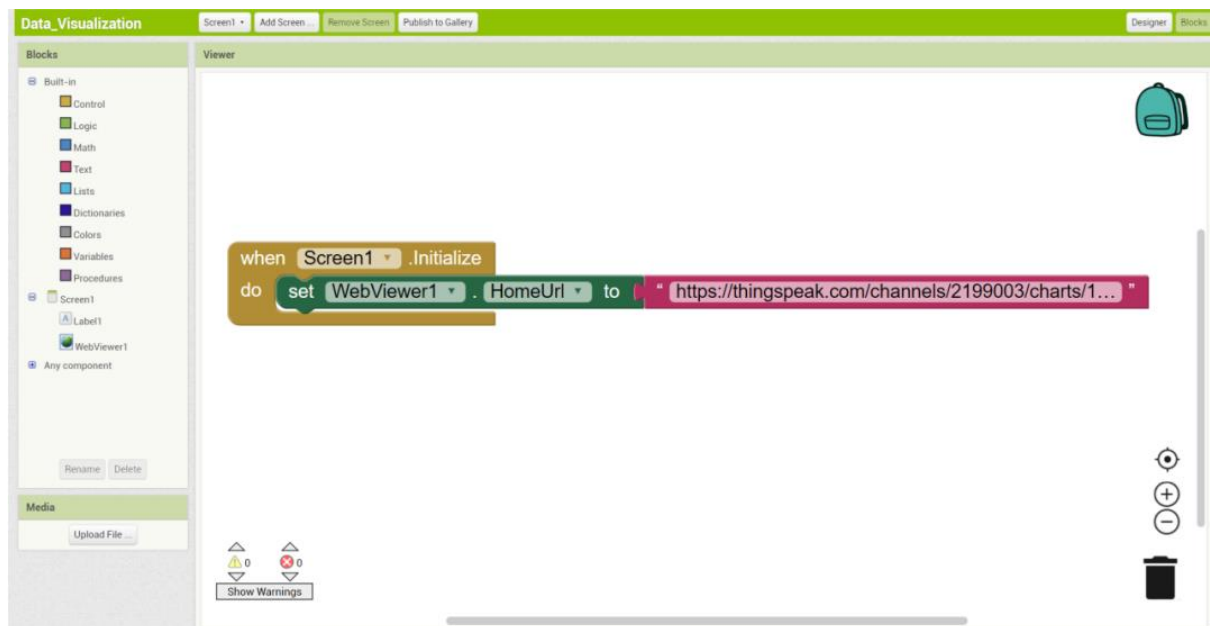
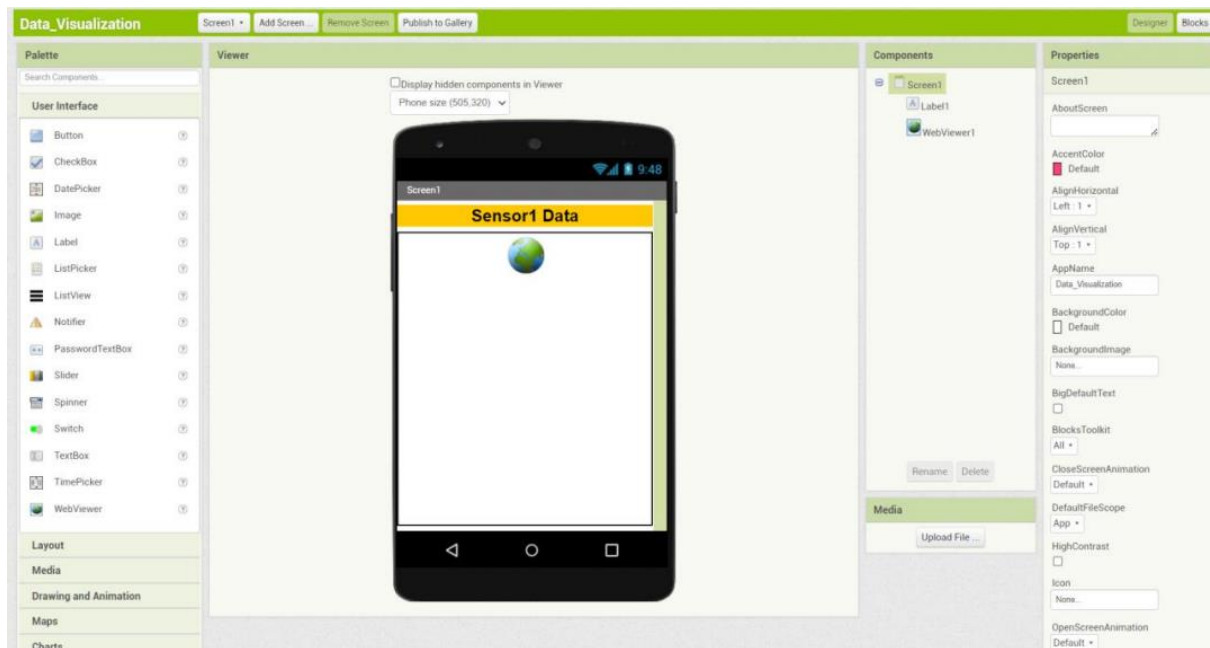
Sensor1

Temperature

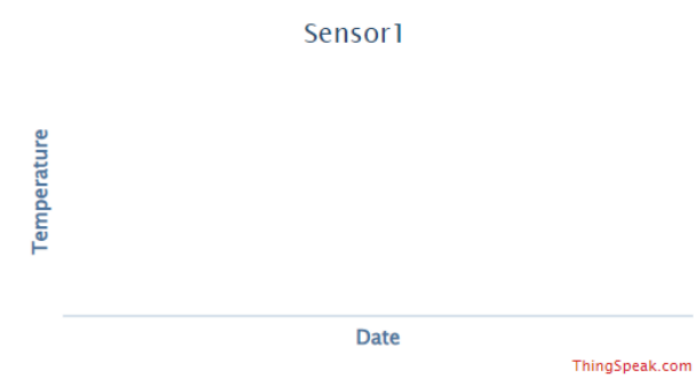
Date

ThingSpeak.com

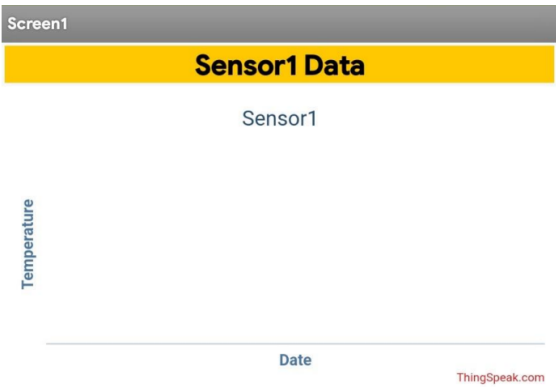
# MIT App Inventor



Web screenshot



App Screenshot



Done, thank you very much DR. ❤️

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