

NALAIYA THIRAN

WEEK 6 REPORT

Phase 3 Description: Project Design Phase -I (Proposed Solution, Problem Solution Fit, Solution Architecture)

3.3 Prepare problem - solution fit document & Solution Architecture

Define CS, fit into CC	<p>1. CUSTOMER SEGMENT(S) CS</p> <p>This product is for trash collectors in metropolitan cities and also people who likes to create a cleaner, safer, more hygienic environment it is ideal for busy locations such as campuses theme parks, airports, railway stations and shopping malls.</p>	<p>6. CUSTOMER CONSTRAINTS C</p> <ul style="list-style-type: none"> • May have confusions on emptying the bins. • Insufficient data collection. 	<p>5. AVAILABLE SOLUTIONS AS</p> <ul style="list-style-type: none"> • With the help of smart bins, we can improve efficiency using the resources available to us in a more focused and target way. • Reduce the number of bins required- decluttering and improving the street scene. 	Exp AS,
Focus on J&P, tap into BE, understand RC	<p>2. JOBS-TO-BE-DONE / PROBLEMS</p> <ul style="list-style-type: none"> • Avoids unnecessary lumping of wastes on road side as it alerts the authorized person to empty the bin whenever the bins are full • Less man power, can view the location of every bin using web application 	<p>9. PROBLEM ROOT CAUSE RC</p> <ul style="list-style-type: none"> • Poor waste management which leads to adverse health outcomes. • Rapid urbanization, population growth and economic development will push global waste generation to increase by 70% 	<p>7. BEHAVIOUR BE</p> <p>Improper waste management can lead to adverse health outcomes so buying and using the product is more benefit</p>	Foc on J&P, tap into BE, understand RC

<p>3.TRIGGERS</p> <p>Due to over flowing of bins, if there is a odour, trash collectors think for a solution and buy it in busy locations such as campuses theme parks, airports, railway stations and shopping malls, for all metropolitan cities</p>	<p>10. YOUR SOLUTION</p> <ul style="list-style-type: none"> • The designed system can result in the availability of valuable materials to reuse. • The designed system also reduces the labor time avoids unnecessary lumping of wastes on road sides. 	<p>8.CHANNELS of BEHAVIOUR</p> <p>ONLINE</p> <p>Searching through the internet to get the detailed statistics about the waste you collected, data for optimizing waste collection</p> <p>OFFLINE</p> <p>Create an efficiency campaign to raise awareness about waste management</p>
<p>4. EMOTIONS: BEFORE AFTER</p> <ul style="list-style-type: none"> • At first, trash collectors find it difficult to empty the bin because they didn't know when the bin got full • After, improvement in monitoring system as it alerts the authorized person to empty the bin and able to get the weight of the garbage in bin, it becomes easy task for them; 		

Solution Architecture

Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. Its goals are to:

- Find the best tech solution to solve existing business problems.
- Describe the structure, characteristics, behavior and other aspects of the software to project stakeholders.
- Define features, development phases and solution requirements.
- Provide specifications according to which the solution is defined, managed and delivered.

FEATURES:

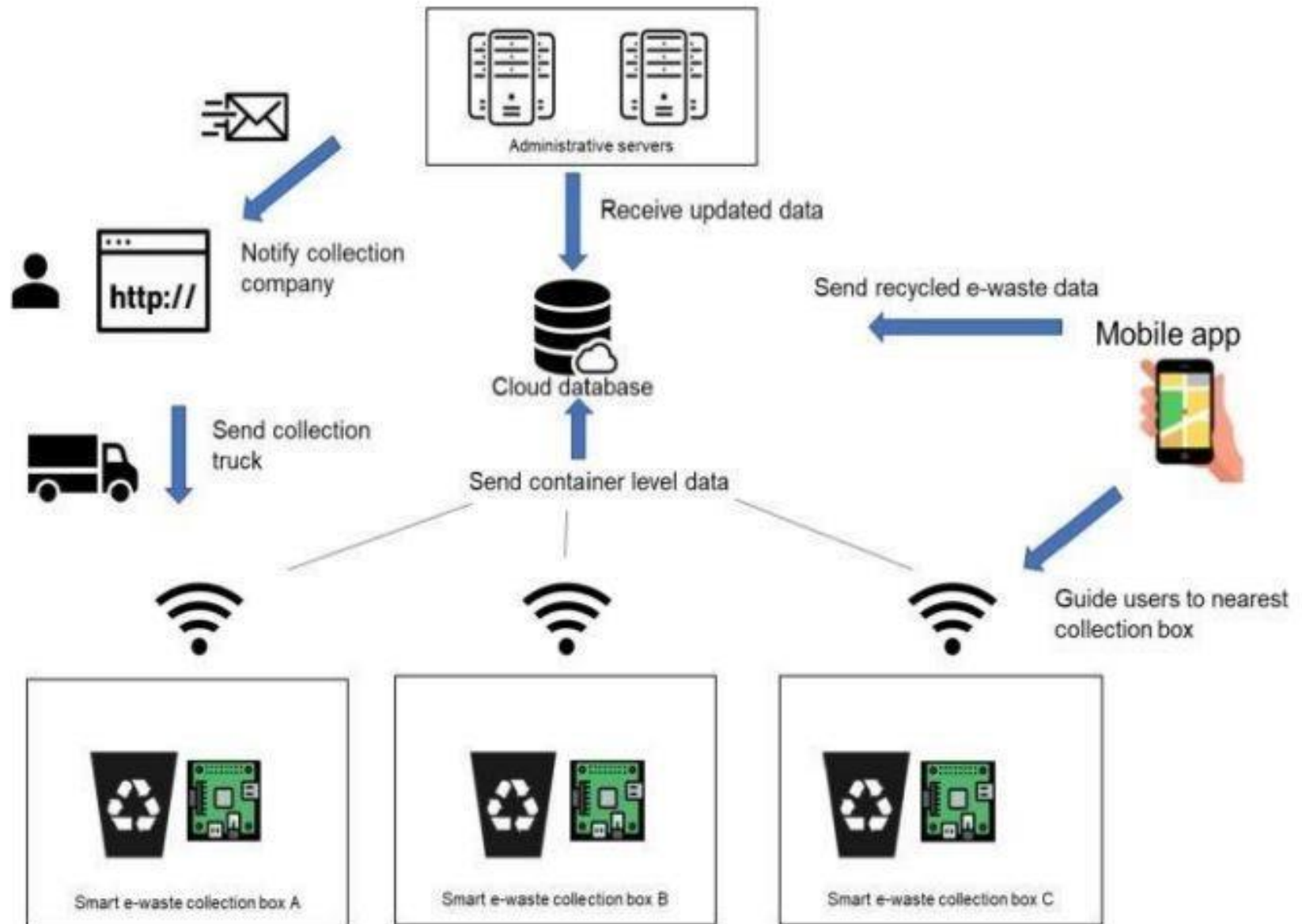
To produce a stable equipment of weighing sensors and other communicationIoT devices to create a best and efficient Smart-Waste Management System.

1. Communication sensors
2. GPS
3. Notify Alert signal

SOLUTION:

Building a stable and durable stand to which the weighing and communication sensors/devices are added and are used to update and send the information to the nearest waste collector. The normal dustbins are inserted into the stand and removed as needed. The communication sensor consists of applications including giving notification to the waste collectors about the weight and capacity of the dustbin that is filled.

SOLUTION ARCHITECTURE DIAGRAM:



3.4 Attend the technology trainings as per the training calendar

IoT-B4-4M6E (Morning Session)-Day-9 (29.09.2022)

The screenshot shows the IBM Watson IoT Platform dashboard on the left and a Python script editor on the right. The dashboard displays the 'weather_deviceid' device with a table of recent events.

Event	Value
IoTSensor	{"temp":70,"Humid"
IoTSensor	{"temp":98,"Humid"
IoTSensor	{"temp":93,"Humid"
IoTSensor	{"temp":63,"Humid"
IoTSensor	{"temp":47,"Humid"

The Python script editor shows the following code:

```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random

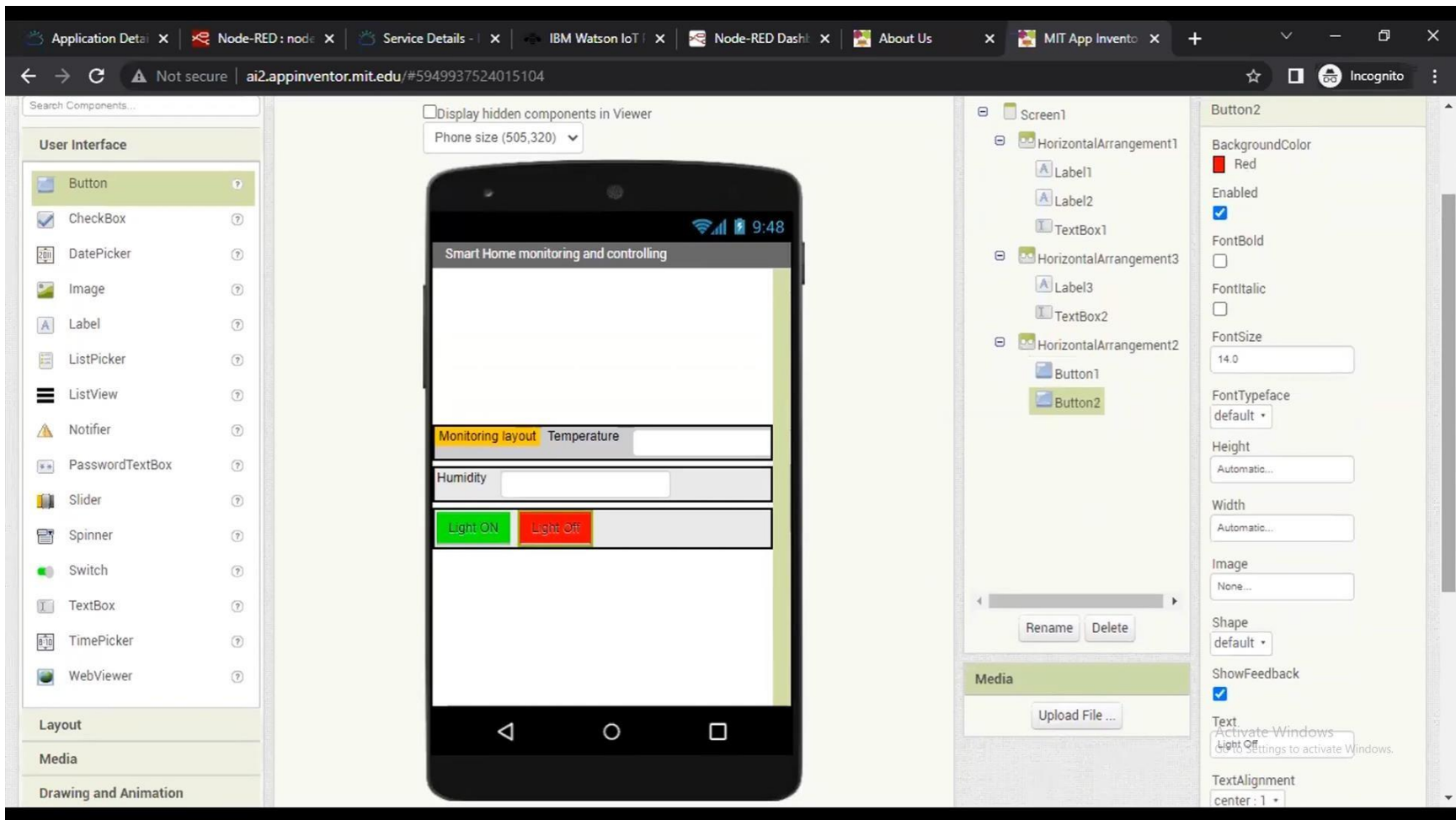
#Provide your IBM Watson Device Credentials
organization = "bxobbs"
deviceType = "weather_Device1"
deviceId = "weather_deviceid"
authMethod = "token"
authToken = "weather@123"

# Initialize GPIO

def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    print(cmd)

try:
    deviceOptions = {"org": organization, "type": deviceType, "id": deviceId}
    deviceCli = ibmiotf.device.Client(deviceOptions)
```

The bottom status bar indicates "0 Simulations running" and "Ln: 9 Col: 1".



Application x Node-RED x Service De x IBM Watsc x Node-RED x About Us x MIT App In x https://no x mit ai2 - A x +

Not secure | ai2.appinventor.mit.edu/#5949937524015104

MIT APP INVENTOR

Projects Connect Build Settings Help My Projects View Trash Guide Report an Issue English rachuri.harish23@gmail.com

ibmapplication Screen1 Add Screen Remove Screen Publish to Gallery Designer Blocks

Blocks

- Logic
- Math
- Text
- Lists
- Dictionaries
- Colors
- Variables
- Procedures

Screen1

- HorizontalArranger
 - Label1
 - Label2
 - TextBox1
- HorizontalArranger
 - Label3
 - TextBox2

Rename Delete

Viewer

when Clock1.Timer

do

- set Web1.Url to https://node-red-gsaid-2022-10-03.eu-gb.mybluemix.net
- call Web1.Get

when Web1.GotText

url responseCode responseType responseContent

do

- set TextBox1.Text to
- get responseType pairs key temp
- call Web1.JsonTextDecodeWithDictionaries jsonText get responseContent
- set responseType to
- look up in pairs key humidity
- call Web1.JsonTextDecodeWithDictionaries jsonText get responseContent
- notFound not found
- notFound not found

Show Warnings

Activate Windows
Go to Settings to activate Windows.

IoT-B4-4M6E (Evening Session)-Day-10 (01.10.2022)

The screenshot shows the IBM Cloud IoT Dashboard interface. The browser's address bar displays the URL `br1jua.internetofthings.ibmcloud.com/dashboard/...`. The page title is "Simulations". A sidebar on the left contains navigation icons for various IoT functions. The main content area shows a summary of simulations: "50 Simulations Running". Below this, a table lists simulation details, including "Device Type" and "harish123". A "Configure Event" link is visible next to the device name. At the bottom of the simulation list, there are two buttons: "Create Simulated Device" and "Use Registered Device". A "New Simulation" button is also present in the top right corner of the simulation list. The bottom right corner of the screen displays a Windows watermark: "Activate Windows. Go to Settings to activate Windows."

IBM Cloud | Session | New Tab | Service | IBM x +

br1jua.internetofthings.ibmcloud.com/dashboard/...

Apps | Simple Arduino Sol... | Arduino Irrigation a... | ACS712 Current Se...

Simulations

Import/Export simulation

50 Simulations Running

+ New Simulation

Device Type
harish123

Configure Event

1 Device

trainingd

1 x Create Simulated Device Use Registered Device

Activate Windows
Go to Settings to activate Windows.

IBM Watson IoT Platf... IBM App Developmen... Node-RED : node-red x ci-pipeline Dashboard x IBM Cloud Account x Session 10,11,12.ppt x

node-red-ejtc-2022-10-01.eu-gb.mybluemix.net/red/#flow/4fb60a85d76de085

Apps Simple Arduino Sol... Arduino Irrigation a... ACS712 Current Se... Acs712 current sen... How to Measured... Free Online YouTub... Make Your Own PC... 1_Zigbee_Configure...

Node-RED Deploy

filter nodes

Flow 1

common

- inject
- debug
- complete
- catch
- status
- link in
- link call
- link out
- comment

function

- function

msg payload

Hello Node-RED!

debug

all nodes all

10/1/2022, 8:12:19 PM node: f2f2649a.0d0d98

msg.payload : string[15]

"Hello Node-RED!"

Activate Windows
Go to Settings to activate Windows.

IBM Watson IoT Platform
br1jua.internetofothings.ibmcloud.com

NAME	TYPE	STATUS	LAST MESSAGE
...
...
...
...
...

ci-2022-10-01.eu-gb.mybluemix.net/ui/#/0?socketid=TkbNPjBXikK_OgJpAAAB

arduino Irrigation a... ACS712 Current Se... Acs712 current sen... How to Measured... Free Online YouTub... Make Your Own PC... 1_Zigbee_Configure...

Default

Humidity

37

%

Temperature

3

c

Activate Windows
Go to Settings to activate Windows.