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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

Problem Solution Fit

Define CS, fit into CC	1. CUSTOMER SEGMENT(S)  Working parents or busy parents of 0-10 year old kids	6. CUSTOMER CONSTRAINTS  Lack of affordable, reliable and hassle free technology, Lack of availability of secure and easy UI.	5. AVAILABLE SOLUTIONS  There are existing solutions that offer location tracking for kids but they are not very efficient, cost effective and reliable all at the same time. This trade off should be addressed.	Explore AS, differentiate
Focus on J&P, tap into BE, understand RC	2. JOBS-TO-BE-DONE / PROBLEMS  Instantaneous tracking and updation of child's location, geofencing and notifying parents of any abnormalities	9. PROBLEM ROOT CAUSE  Customers have to do this to protect their children from potential threats and to ensure the safety while being far away from them.	7. BEHAVIOUR  Customers panic, prevent their children from going out on their own, try using easily available technologies	Focus on J&P, tap into BE, understand RC

Identify strong TR & EM	<p>3. TRIGGERS</p> <p>TR</p> <p>Coming across news about children being kidnapped and abducted, missing cases being reported.</p>	<p>10. YOUR SOLUTION</p> <p>SL</p> <p>Building a reliable technology that can address all the customer needs while being reliable and secure ensuring efficient functioning.</p>	<p>8. CHANNELS of BEHAVIOUR</p> <p>CH</p> <p>8.1 ONLINE</p> <p>Tracking their kids location with their mobile phones' GPS, reading news about child safety and other child missing cases.</p> <p>8.2 OFFLINE</p> <p>Customers accompany their children to ensure safety, send them together with other reliable people, seek for protection in public places.</p>	Identify strong TR & EM
	<p>4. EMOTIONS: BEFORE / AFTER</p> <p>EM</p> <p>Before : Feel insecure , worried , scared and confused.</p> <p>After Relieved , calm , confident , happy.</p>			

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, behaviour 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:

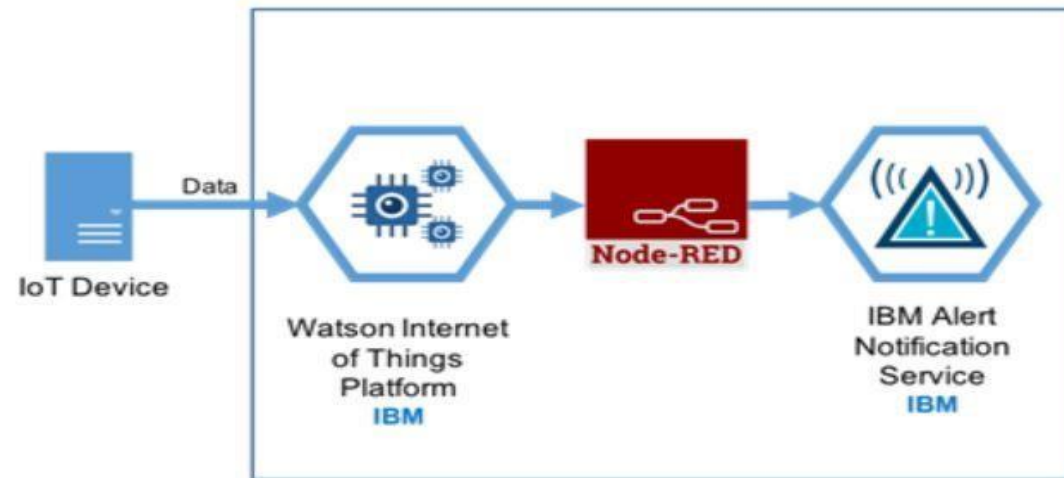
Development of a safety gadget for children to ensure their protection without direct monitoring of their parents. The various features involve:

- GPS
- Geo fence
- Notify alert signal

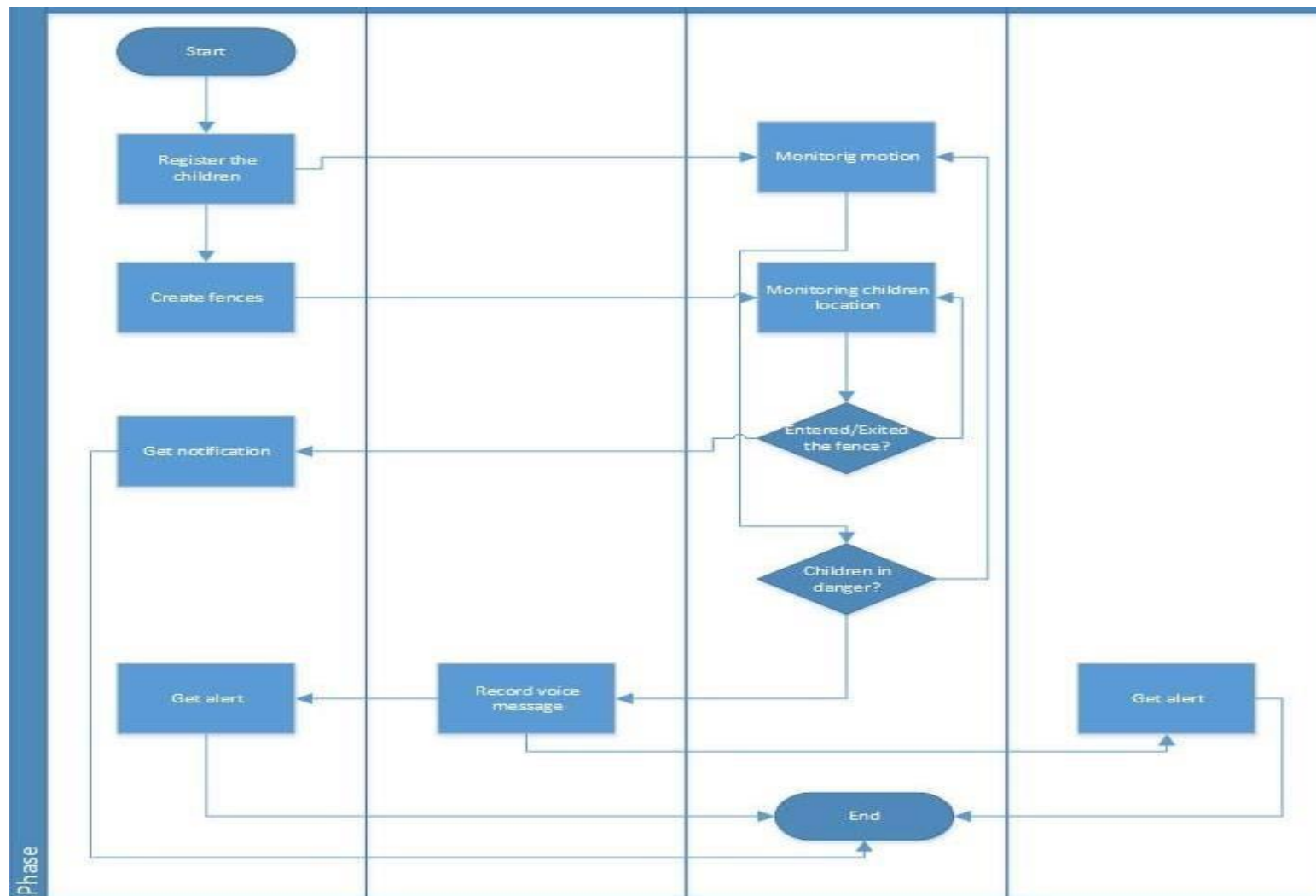
SOLUTION:

Track current location of the child using GPS and continuous monitoring of the same is done. When the gadget detects the activity to be outside the given geo fence (as mentioned by the parent or guardian), alert messages or notifications are sent to the registered device, appropriately. Additional features such as recording of messages could be done if any kind of danger is sensed.

SOLUTION ARCHITECTURE DIAGRAM:



Architecture of the child safety gadget system



Data flow of the child safety gadget system

3.4 Attend the technology trainings as per the training calendar

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

The screenshot displays the IBM Watson IoT Platform interface on the left and a code editor on the right. The interface shows 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 code editor shows the following Python 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)
```

0 Simulations running

Application Details x Node-RED: node x Service Details x IBM Watson IoT x Node-RED Dash x About Us x MIT App Inventor x

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

Search Components...

User Interface

- Button
- CheckBox
- DatePicker
- Image
- Label
- ListPicker
- ListView
- Notifier
- PasswordTextBox
- Slider
- Spinner
- Switch
- TextBox
- TimePicker
- WebView

Layout

Media

Drawing and Animation

☐ Display hidden components in Viewer

Phone size (505,320)

Smart Home monitoring and controlling

Monitoring layout Temperature

Humidity

Light ON Light Off

Screen1

- HorizontalArrangement1
 - Label1
 - Label2
 - TextBox1
- HorizontalArrangement3
 - Label3
 - TextBox2
- HorizontalArrangement2
 - Button1
 - Button2

Rename Delete

Media

Upload File ...

Button2

BackgroundColor: Red

Enabled: ☒

FontBold: ☐

FontItalic: ☐

FontSize: 14.0

FontTypeface: default

Height: Automatic...

Width: Automatic...

Image: None...

Shape: default

ShowFeedback: ☒

Text: Light Off

TextAlignment: center

Application x Node-RED x Service D x IBM Watsc x Node-RED x About Us x MIT App li 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

- HorizontalArrangemer
 - Label1
 - Label2
 - TextBox1
- HorizontalArrangemer
 - Label3
 - TextBox2
- HorizontalArrangemer

Rename Delete

Viewer

when Clock1 .Timer

do

- set Web1 . Url to "https://node-red-gsaid-2022-10-03.eu-gb.mybluemix..."
- 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
- notFound "not found"
- set TextBox2 . Text to
- look up in pairs key "humidity"
- call Web1 .JsonTextDecodeWithDictionaries jsonText get responseContent
- 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 displays the IBM Cloud IoT Dashboard in a web browser. The browser's address bar shows the URL `br1jua.internetofthings.ibmcloud.com/dashboard/...`. The dashboard's left sidebar contains several icons, with the 'Simulations' icon (a grid of dots) currently selected. The main content area is titled 'Simulations' and includes a '+ New Simulation' button. Below this, it indicates '50 Simulations Running'. A section for 'Device Type' shows 'harish123' with a 'Configure Event' link, a toggle switch, and a delete icon. Under '1 Device', a device named 'trainingid' is listed. At the bottom, there are two buttons: '1 x Create Simulated Device' and 'Use Registered Device'. An 'Import/Export simulation' link is visible in the top right of the main area. A Windows watermark in the bottom right corner reads '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.pptx x

node-red-ejtci-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.

The screenshot shows the Node-RED web interface in a browser. The top bar contains several tabs, including 'Node-RED : node-red'. The address bar shows the URL 'node-red-ejtci-2022-10-01.eu-gb.mybluemix.net/red/#flow/4fb60a85d76de085'. The left sidebar has a 'filter nodes' search bar and two categories of nodes: 'common' and 'function'. The 'common' category includes nodes like 'inject', 'debug', 'complete', 'catch', 'status', 'link in', 'link call', 'link out', and 'comment'. The 'function' category includes a 'function' node. The main workspace, titled 'Flow 1', shows a flow with two nodes: an 'inject' node with the text 'Hello Node-RED!' and a 'msg payload' node. A curved line connects the output of the 'inject' node to the input of the 'msg payload' node. The right sidebar contains a 'debug' panel with a dropdown menu set to 'all nodes' and a 'all' button. It displays a log entry for '10/1/2022, 8:12:19 PM' from node 'f2f2649a.0d0d98', showing 'msg.payload : string[15]' and the value '"Hello Node-RED!"'. At the bottom of the right sidebar, there is a message: 'Activate Windows. Go to Settings to activate Windows.'

IBM Watson IoT Platform
br1jua.internetofthings.ibmcloud.com

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

Node-RED : node-...
ci-pipeline Dash...
IBM Cloud Acco...
Session 10,11,12...
Node-RED Dash...

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

NAME	VALUE	UNIT	LAST MESSAGE
Temperature of Arduino (C)	3	C	2022-10-01 10:00:00
Humidity of Arduino (%)	37	%	2022-10-01 10:00:00
Current of Arduino (A)	0.00	A	2022-10-01 10:00:00
Voltage of Arduino (V)	5.00	V	2022-10-01 10:00:00

Default

Humidity

0100

37

%

Temperature

0100

3

C

Activate Windows
Go to Settings to activate Windows.