ANNA UNIVERSITY REGIONAL CAMPUS MADURAI

IBM PROJECT

PERSONAL ASSISTANCE FOR SENIORS WHO ARE SELF RELIANT

EXECUTED BY:

Batch : B1-1M3E

Team id : PNT2022TMID47501

Team leader : VIVINA ANGELINE A

Team members : SABARI MUKTHEESWARAN A
VAISHNAVI R
SATHISHKUMAR K

CONTENTS

1. INTRODUCTION:

1.1.PROJECT OVERVIEW:

This project helps for the patient to take medicine at correct time.sometimes elderly people forget to take their medicine at the correct time,they also forget which medicine he/she should take at the particular time and it is difficult for doctors/caretakers to monitor the patients around the lock.to avoid these kind of problems.medicine reminder system is developed.

1.2.PURPOSE:

The main purpose of this system is to remind the medicine name to the patient at the correct a time by sending voice command through iot device/mobile phone.

2. LITERATURE SURVEY:

2.1.EXISTING PROBLEM:

Patients who are suffering to identify their daily medicines due to their carelessness which causes health issues in their body and damage internal organs .by forgetting their medicines they risk their life in danger.

2.2.REFERENCES:

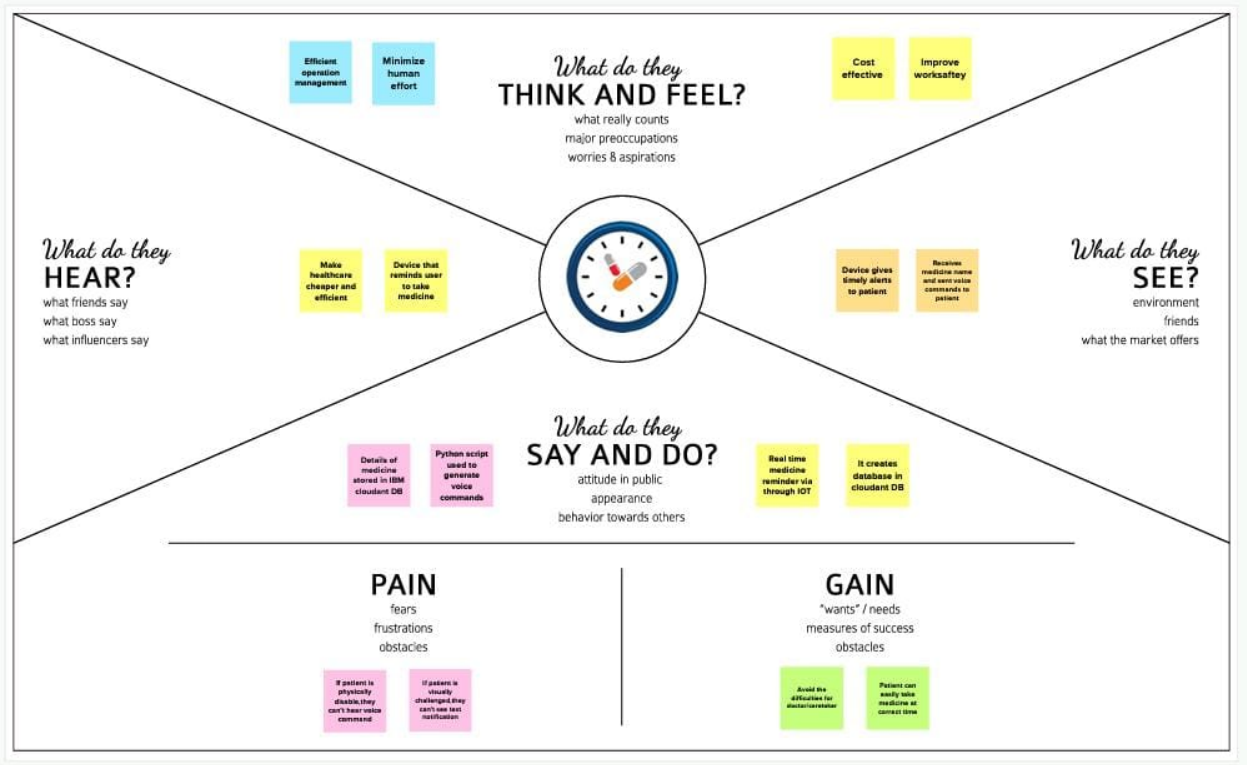
Andreas Handojo, Tioe Julio Adrian Sutiono, Anita Nathania Purbowo,Metin Berke Yelaldı, Veliyullah Öztürk, Anıl Gün, Berke Küçüksağır, Alim Kerem Erdoğmuş, Uğur Yayan, Rifat Edizkan,Sawsan M. Mahmoud, Hesham A. Alabbasi, Tawfiq E. Abdulabbas,Rainer Lutze, Klemens Waldhör

2.3.PROBLEM STATEMENT DEFENITION:

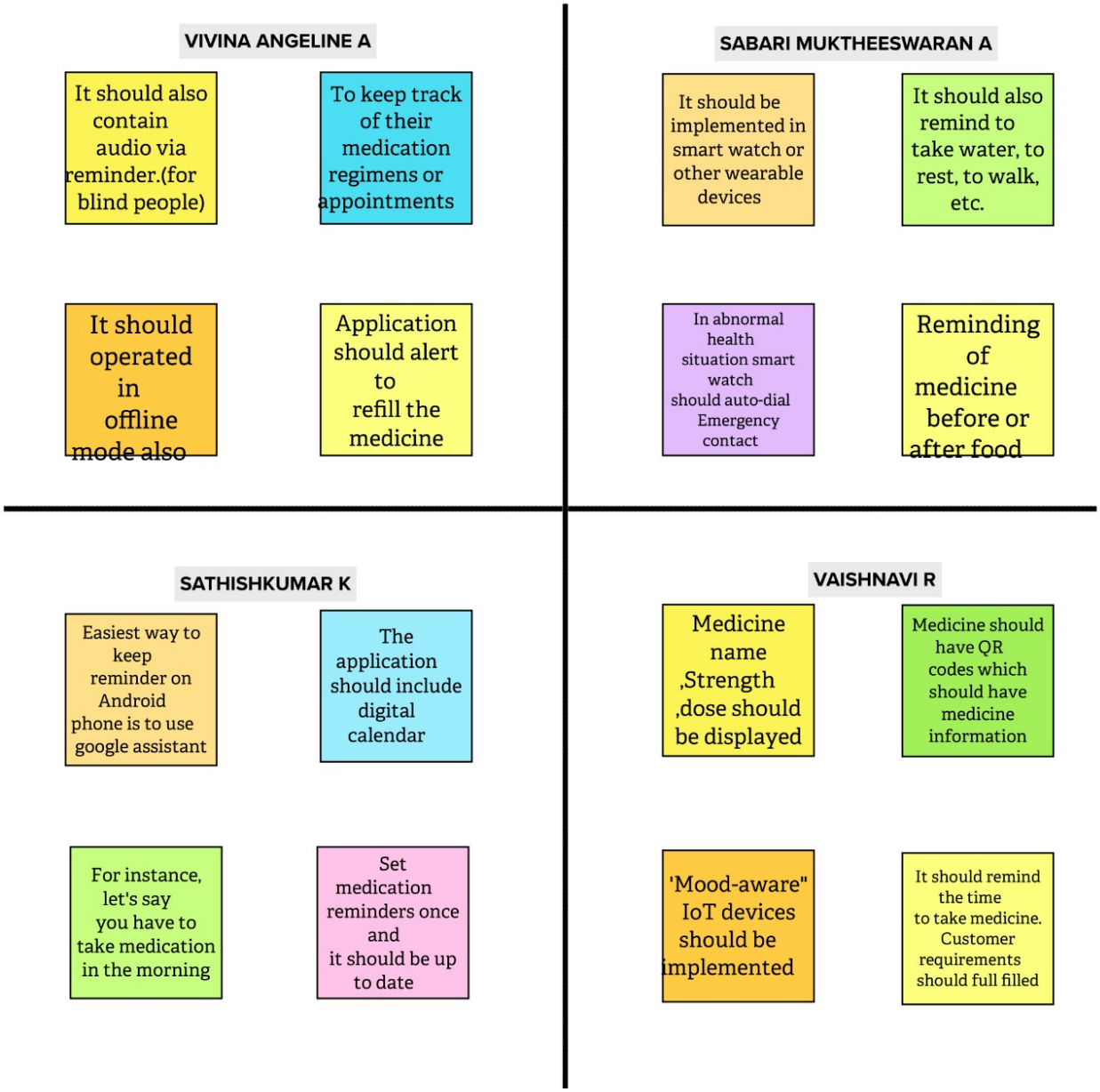
When elders forgot to take their medicine that causes health issues.we can overcome this problem by help of this medicine reminder system by sending medicine name to their moblie phone through voice command.

3.IDEATION&PROPOSED SOLUTON:

3.1.EMPATHY MAP CONVAS:



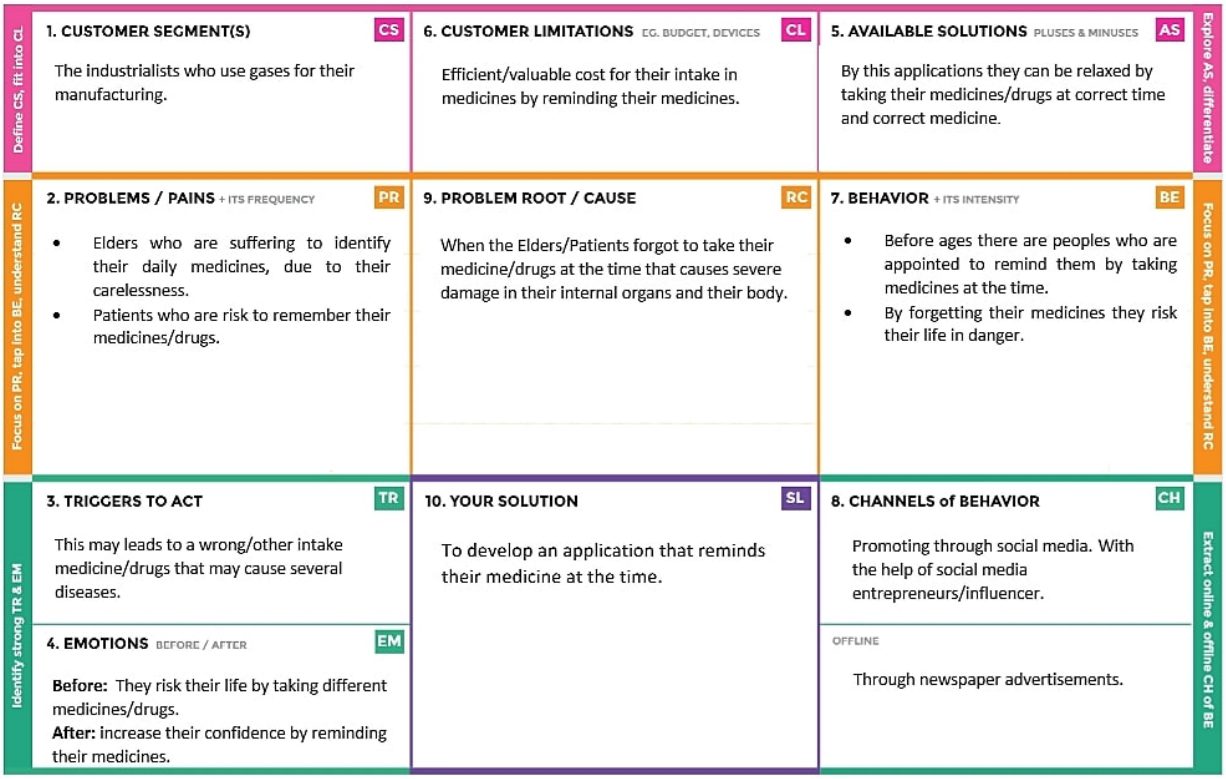
3.2. IDEATION AND BRAINSORMING



3.3. PROPOSED SOLUTION:

S. No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	1. To remind seniors medicine on time.
2.	Idea / Solution description	1. By reminder application
3.	Novelty / Uniqueness	1. Senior will get the reminder not only through the SMS but also by voice command.
4.	Social Impact / Customer Satisfaction	1. Seniors can take the medicine on time
5.	Business Model (Revenue Model)	1. It is cost effective. 2. The model you choose depends on your target audience , business goals , and the resources you already possess
6.	Scalability of the Solution	1. As the device is integrated with IBM cloud software , we can update the user experience without reinstalling a device by updating their medicine schedule.

3.4.PROBLEM SOLUTION FIT:



4.REQUIREMENT ANALYSIS:

4.1 FUNCTIONAL REQUIREMENTS:

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Patient/User Registration	Registration through Form Registration through Gmail
FR-2	User Confirmation	**For Hospital Administration:** Confirm through the authorised card or identity of the hospital **For Individual:** Confirmation via Email Confirmation via OTP
FR-3	Patient/User Medical Detail Submission	Enter the Prescription/Medicine details in the Cloud Services (IBM Cloud, Drive)
FR-4	Set Patient/User Desired Time	Enter the desired time in the application for which it gives reminder through text/speech

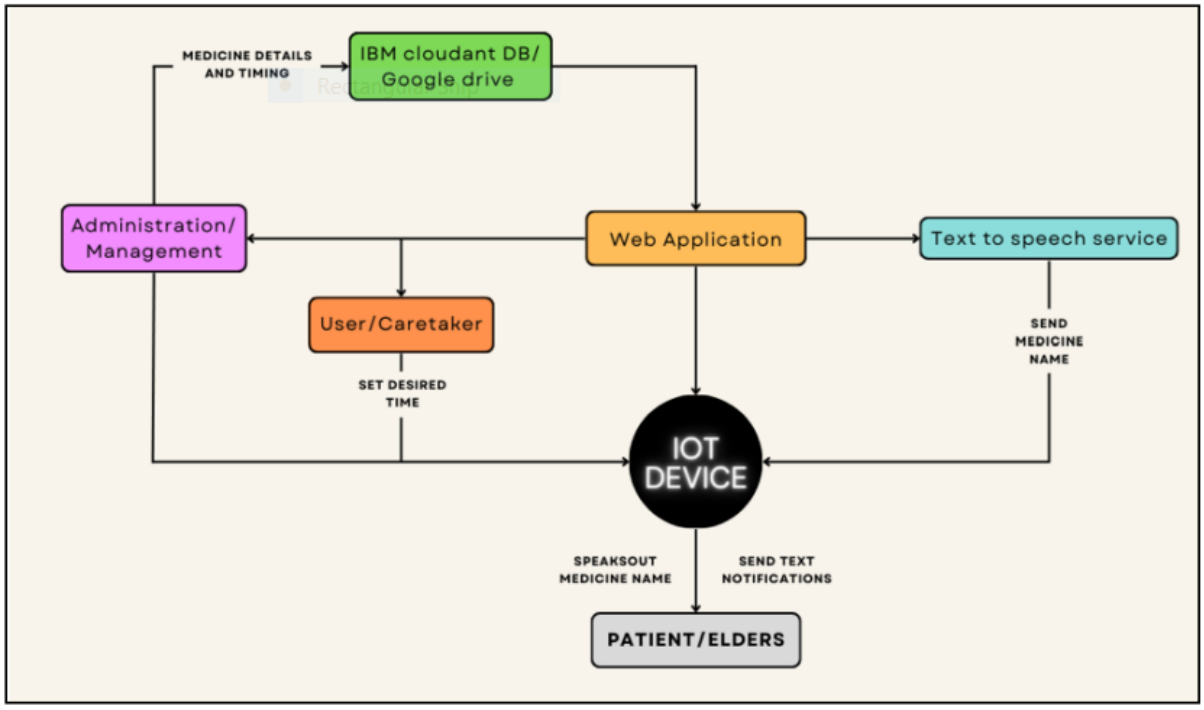
4.2 NON-FUNCTIONAL REQUIREMENTS:

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	This Application/Device will be useful for literates/illiterates
NFR-2	**Security**	Data entered will be secured through data synchronization and it is secured by giving username and password
NFR-3	**Reliability**	More reliable when compared with other Apps/Devices
NFR-4	**Performance**	Performance will be better and useful to the users compared to other products
NFR-5	**Availability**	Available on mobile app. Web version is getting ready for next release. Prototype is on-progress
NFR-6	**Scalability**	Once the data is uploaded, it won't be erased until the next data is uploaded

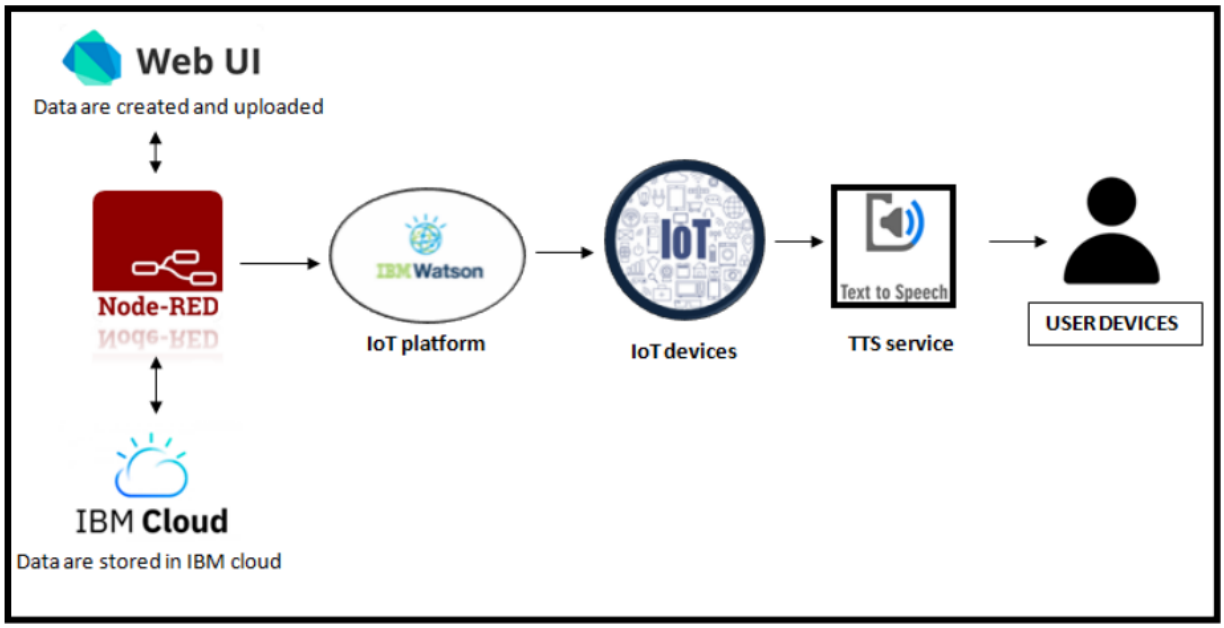
5.PROJECT DESIGN:

5.1.DATA FLOW DIAGRAM:

Data flow diagram:



5.2.SOLUTION AND TECHNICAL ARCHITECTURE:



6.PROJECT PLANNING AND SHEDULING:

6.1 SPRINT PLANNING AND ESTIMATION:

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1		US-1	Create the IBM Cloud services which are being used in this project.	6	High	Vivina Angeline A, Sabari Muktheeswaran A, Vaishnavi R, Sathishkumar K
Sprint-1		US-2	Configure the IBM Cloud services which are being used in completing this project.	4	Medium	Vivina Angeline A, Sabari Muktheeswaran A, Vaishnavi R, Sathishkumar K
Sprint-1		US-3	IBM Watson IoT platform acts as the mediator to connect the web application to IoT devices, so create the IBM Watson IoT platform.	5	Medium	Vivina Angeline A, Sabari Muktheeswaran A, Vaishnavi R, Sathishkumar K
Sprint-1		US-4	In order to connect the IoT device to the IBM cloud, create a device in the IBM Watson IoT platform and get the device credentials.	5	High	Vivina Angeline A, Sabari Muktheeswaran A, Vaishnavi R, Sathishkumar K
Sprint-2		US-1	Configure the connection security and create API keys that are used in the Node-RED service for accessing the IBM IoT Platform.	10	High	Vaishnavi R, Sabari Muktheeswaran A
Sprint-2		US-2	Create a Node-RED service.	10	High	Vaishnavi R, Sabari Muktheeswaran A
Sprint-3		US-1	Develop a APPLICATION that reminds elders to take their medicines.	7	High	Vivina Angeline A, Sabari Muktheeswaran A, Vaishnavi R, Sathishkumar K
Sprint-3		US-2	After that upload the information to the device that reminds them to take their medicine	5	Medium	Vivina Angeline A, Sabari Muktheeswaran A, Vaishnavi R, Sathishkumar K

Sprint-3		US-3	Publish Data to The IBM Cloud	8	High	Vivina Angeline A, Sabari Muktheeswaran A, Vaishnavi R, Sathishkumar K
Sprint-4		US-1	Create Web UI in Node- Red	10	High	Vivina Angeline A, Sabari Muktheeswaran A, Vaishnavi R, Sathishkumar K
Sprint-4		US-2	Configure the Node-RED flow to receive data from the IBM IoT platform and also use Cloudant DB nodes to store the received sensor data in the cloudant DB	10	High	Vivina Angeline A, Sabari Muktheeswaran A, Vaishnavi R, Sathishkumar K

6.2.SPRINT DELIVERY SHCEDULE:

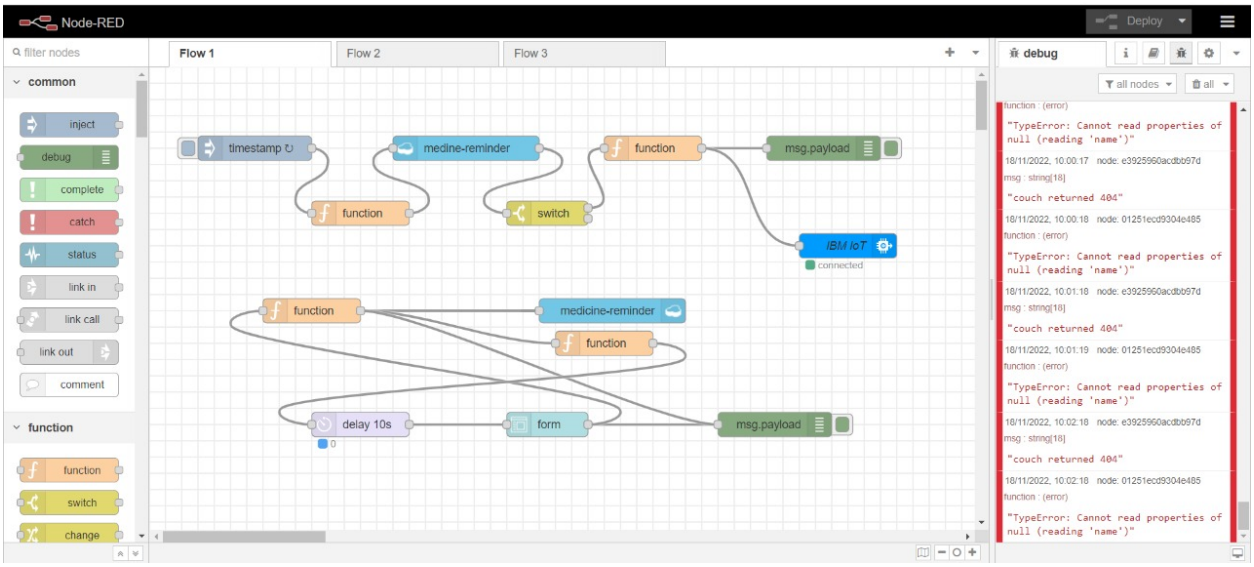
Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022	20	29 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	20	05 Nov 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	20	12 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	20	19 Nov 2022

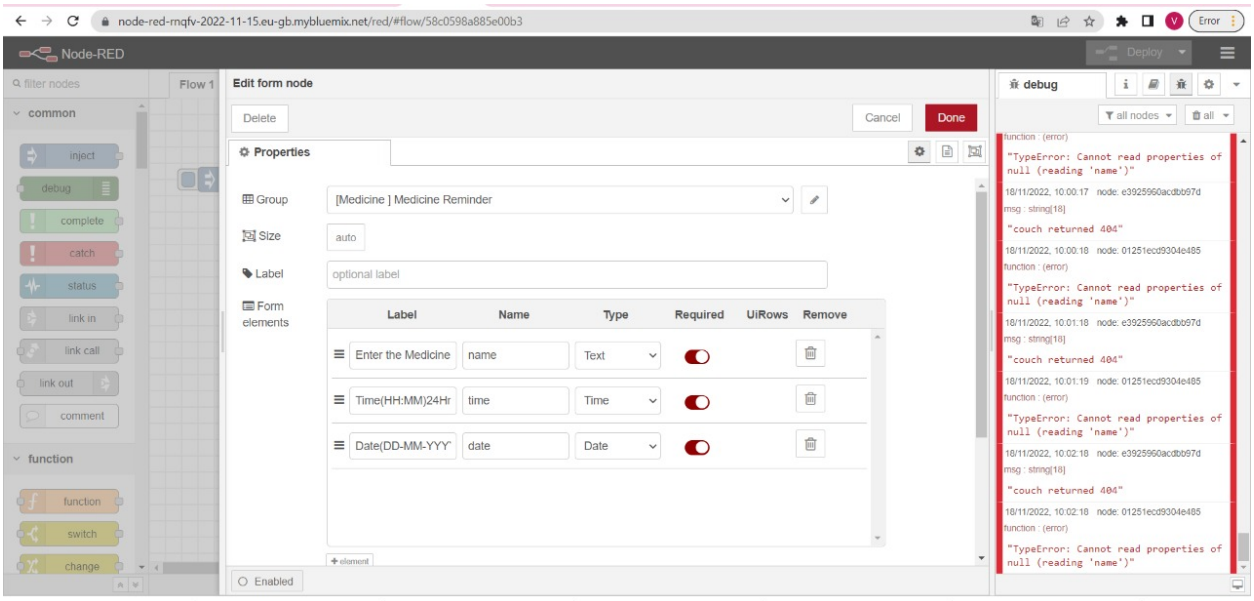
6.3.REPORTS FROM JIRA:

REPORT FROM JIRA REGARDING SPRINT DELIVERY

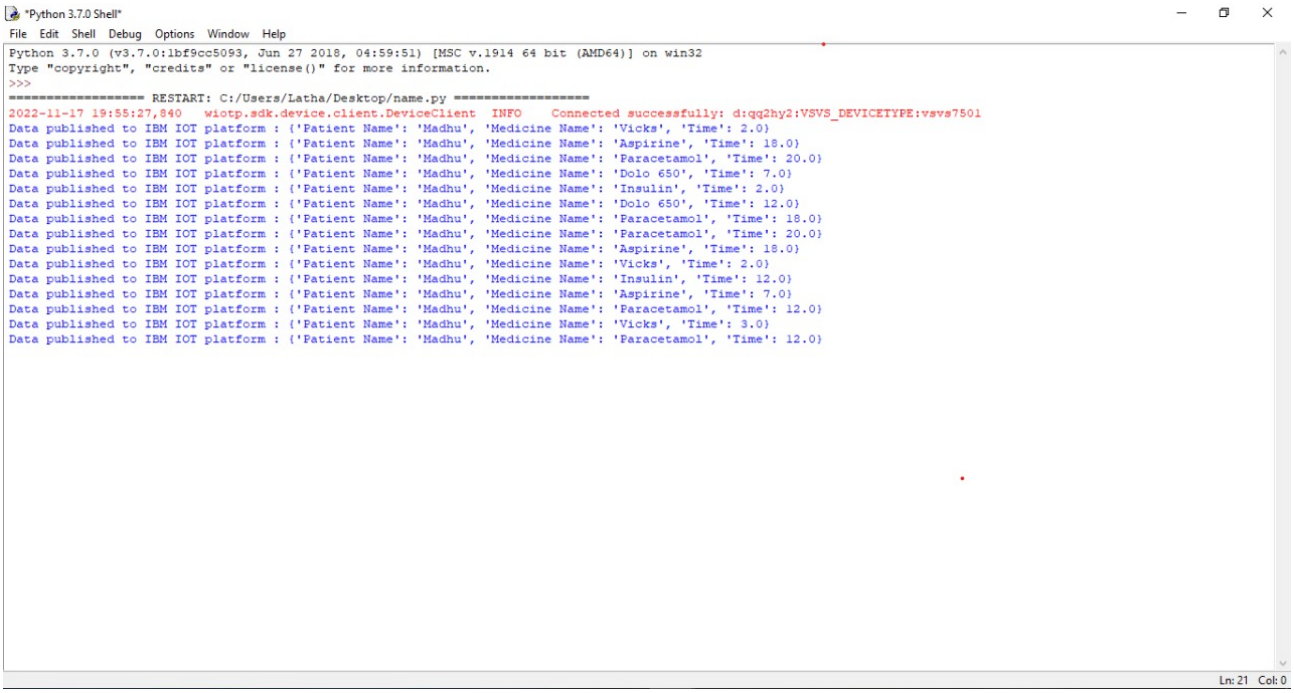
7.CODING AND SOLUTIONING:

7.1.FEATURE 1(NODE RED OUTPUT)





7.2.FEATURE 2(PYTHON CODE OUTPUT):



8. TESTING:

i. Test Cases link:

TEST CASES

ii. User Acceptance Testing link :

USER ACCEPTANCE TESTING

9. RESULT:

i. Performance Metrics link :

PERFORMANCE METRICS

10.ADVANTAGES AND DISADVANTAGES:

ADVANTAGES:

- Patient can easily take medicine at correct time
- It increase patient satisfaction
- avoid the difficulties for doctors/caretaker
- Help in decreasing medication dispensing errors
- Easy to use
- Time saving for users

DISADVANTAGES:

- If seniors/patients who are physically disabled (like deaf) ,they can't hear the voice command
- If seniors/patients who are visually challenged (like cataracts)and illiterate, they can't read the medicine/drugs name properly

11. CONCLUSION:

Patients/elders faces difficulties while taking medicine at correct time.it is also difficult for doctors/caretakers to monitor the patient.To avoid these problems,medicine reminder system is developed.an app is built for the patient which enables him to set the time.Users can configure the medicine name, and time through a web application. All the medicine details will be stored in the IBM Cloudant DB.The web application will send the medicine name to the IoT device at the desired time.After getting the medicine name the device will speak out the medicine name using IBM text to speech Service to intimate the user to take the medicine.

12. FUTURE SCOPE:

Patients/elders can individually take their medicine without the help of others.it is very useful for patients whose age in between 50-80.there is no need to depend others for taking medicine.main acception of this medicine reminder system is,notification will be sent through the voice command not by alarm.so patient can easy identify their medicine name.It is very helpful for the patients who are suffered from metabolic disorder,cardigenic shock,heart attack,pneumonia,diabetics,cancer etc..

13.APPENDIX:

SOURCE CODE:

SOURCE CODE LINK

GITHUB AND PROJECT DEMO LINK:

GITHUB LINK

PROJECT DEMO LINK:

PROJECT DEMO LINK