PERSONAL ASSISTANCE FOR SENIORS WHO ARE SELF- RELIANT

IBM NALAIYA THIRAN

PROJECT REPORT

Submitted By

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CHAPTER - 1
INTRODUCTION

1.1 PROJECT OVERVIEW

In day-to-day life, most people need to take medicines which were not there in the past couple of years and the reason behind this is diseases are increasing in a large amount. So sooner or later many people encounter these diseases. Some diseases are temporary while many are permanent life-threatening diseases.Life-threatening diseases get mixed with the human body in such a way that they can’t leave the body ever and they increase in rapid time. The life span of humans became less because of such diseases and to overcome or to live a better life we need to take medicines regularly and also in the large amount. We need to be on the advice of a doctor who tells us to take desired pills in the desired way so that patients face problems like forgetting pills to take at right time and when the Doctor changes the prescription of medicine patients have to remember the new schedule of medicine. This problem of forgetting to take pills at right time, taking the wrong medicines and accidentally taking expired medicine causes health issues for the patient and this leads to suffering from unhealthy life. Our project is to make a software-based helping system, which connects the caretaker of the patient with the patient, to send timely SMS alerts to them at the specified time and with the specified note set by the caretaker. The patient can be duly monitored by the caretaker and hence his/her health can be monitored better with this software

1.2 PURPOSE

The purpose of this project is to keep people fit and safe from health-threatening diseases. The sole purpose of medicines is to treat the patients and control their metabolisms properly so that the health risk can be reduced and thus the patient can get a cure for the illness and can live a longer life.

People, especially senior citizens are facing so much trouble remembering the time and name of the medicines to be taken. Therefore, the problem could create severity among people when medicines are not taken or are wrongly taken.

When this proposed solution is set to work, the problem can be reduced, as the caretaker on the other side, set the note of the medicine to be taken and the time at which the patient must be alerted with the note. This software can alert the patient with clear information and hence the patient will not be forgotten to take medicine and will take the medicine at right time.

This solution can ultimately help the patients and caretaker to preset the schedule and he/she also need not remember the time to notify their patients, hence everything goes smoothly.

CHAPTER - 2

LITERATURE SURVEY

2.1 EXISTING PROBLEM

Smart Pill Box is based on the medicine bag concept to store pills, to remind and ensure timely intake of medicines. The system alerts if faulty medications are consumed. Each compartment of the box to organize pills can be separately programmed by specifying pill quantity, intake time and refill if necessary. The entire system is managed by some mobile applications which give connectivity between doctors, patients, and pharmacies. This system is connected to IoT, to regularly monitor patients' health details and to integrate it with the server for efficient record keeping and treatment.

2.2 REFERENCES

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2. Hiba Zeidan, Khalil Karam, Roy Abi Zed Daou, Ali Hayek, Josef Bolercsoek (2018)'Smart Medicine Box System', IEEE International Multidisciplinary Conference on Engineering Technology,10.1109/IMCET.2018.8603031

3. Benbin Chen and Kun Zhou (2019) 'Design of Docker –Based Cloud Platform for Smart Medicine Box', International Conference on Intelligent Green Building and Smart Grid,10.1109/IGBSG.2019.8886265

4. Obaidulla-Al-Mahmud1, Md.Kausar Khan, Rajdeep Roy, and Fakir and Mashuque Alamgir (2020) 'IoT based Smart Health Care Medical Box for

Elderly People', International Conference for Emerging Technology, 10.1109/INCET49848.2020.9153994

5. Aakash Bharadwaj, Divyank Yarravarapu, Sadiparala Charan Kumar Reddy, Thirumalaraju Prudhvi, KSP Sandeep and Obulam Siva Dheeraj Reddy (2017) 'Enhancing Healthcare using m-Care Box(Monitoring non Compliance of Medication)', International Conference for Innovative Mechanisms for Industry Applications, 10.1109/ICIMIA.2017.7975594

6. R Al-Shammary, D.Mousa, S.E.Esmaeili (2018) 'The Design of a Smart Medicine Box', 26th Iranian Conference on Electrical Engineering, 10.1109/ICEE.2018.8472586

7. Aitor Almeida, Rubén Mulero, Piercosimo Rametta, Vladimir Urošević and Marina Andrić "A critical analysis of an IoT—aware AAL system for elderly monitoring."

8. Tae Hee Jo , Jae Hoon Ma and Seung Hyun Cha, " Elderly Perception on the Internet of Things-Based Integrated Smart-Home System".

9. Sultan Ahmad ,Mahamudul Hasan , Gouse Pasha Mohammed , Mohammad Shahabuddin , Tasnia Tabassum and Mustafa Wasif Allvi, "IoT Based Pill Reminder and Monitoring System."

2.2 PROBLEM STATEMENT DEFINITION

Creating a problem statement to understand your customer's point of view. The Customer Problem Statement template helps you focus on what matters to create experiences people will love.

Our main aim is to make a Smart medicine box for those users who regularly take medicines and the prescription of their medicine is very long as it is hard to remember for patients and their caregivers.

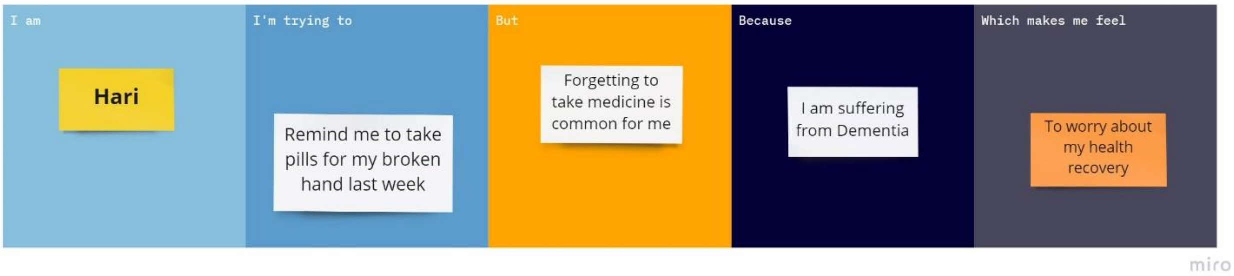

I am
Hari
I'm trying to
Remind me to take pills for my broken hand last week
But
Forgetting to take medicine is common for me
Because
I am suffering from Dementia
Which makes me feel
To worry about my health recovery
miro

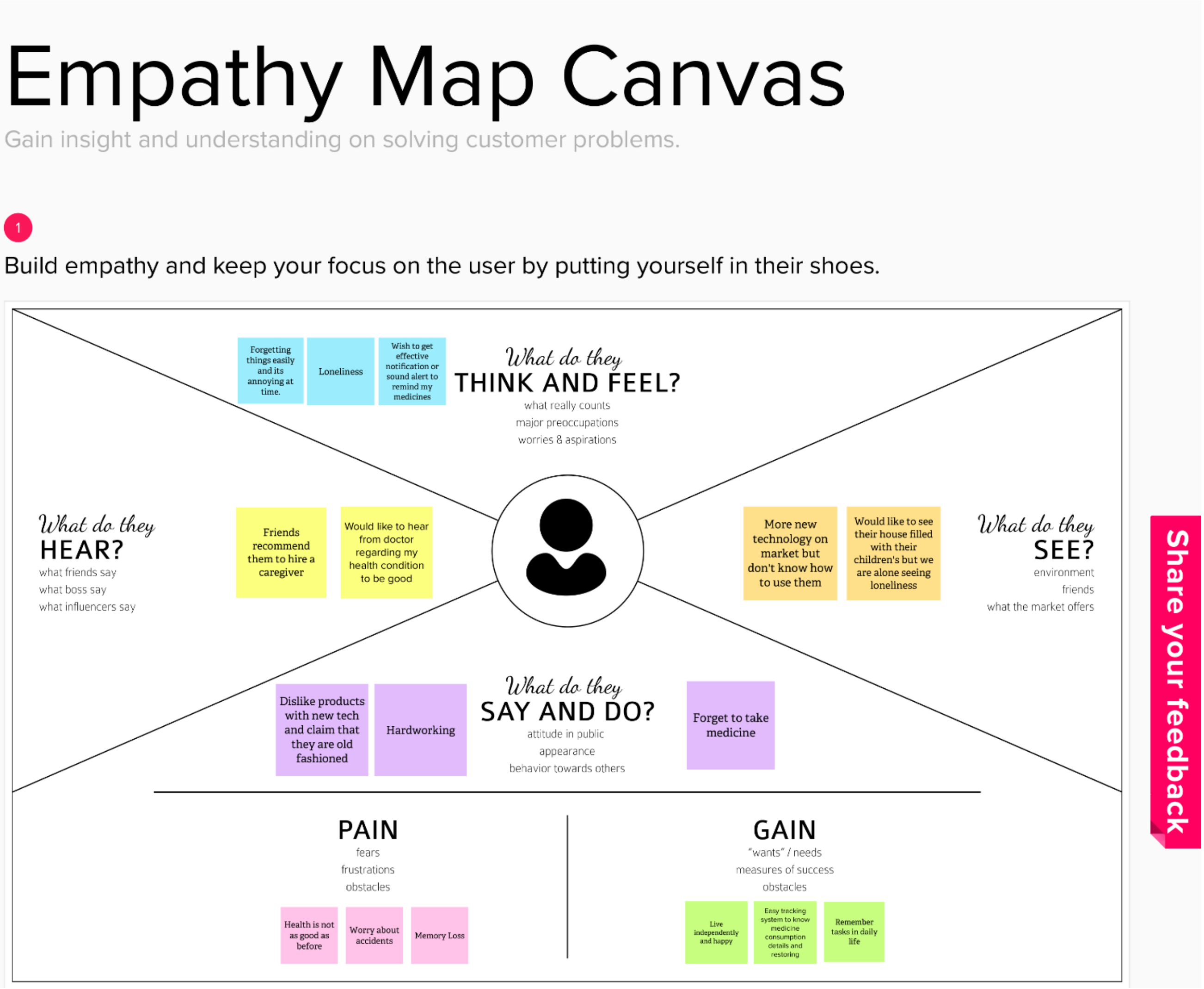
Figure 2.1. Problem Statement

CHAPTER - 3

IDEATION AND PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS

An empathy map is a simple, easy-to-digest visual that captures knowledge about a user’s behaviors and attitudes. It is a useful tool to help teams better understand their users. Creating an effective solution requires understanding the true problem and the person who is experiencing it. The exercise of creating the map helps participants consider things from the user’s perspective along with his or her goals and challenges.



Empathy Map Canvas

Gain insight and understanding on solving customer problems.

1

Build empathy and keep your focus on the user by putting yourself in their shoes.

Forgetting things easily and its annoying at time.
Loneliness
Wish to get effective notification or sound alert to remind my medicines
What do they THINK AND FEEL?
what really counts
major preoccupations
worries & aspirations
What do they HEAR?
what friends say
what boss say
what influencers say
Friends recommend them to hire a caregiver
Would like to hear from doctor regarding my health condition to be good
More new technology on market but don't know how to use them
Would like to see their house filled with their children's but we are alone seeing loneliness
What do they SEE?
environment
friends
what the market offers
Dislike products with new tech and claim that they are old fashioned
Hardworking
What do they SAY AND DO?
attitude in public
appearance
behavior towards others
Forget to take medicine
PAIN
fears
frustrations
obstacles
Health is not as good as before
Worry about accidents
Memory Loss
GAIN
“wants” / needs
measures of success
obstacles
Live independently and happy
Easy tracking system to know medicine consumption details and restoring
Remember tasks in daily life
Share your feedback

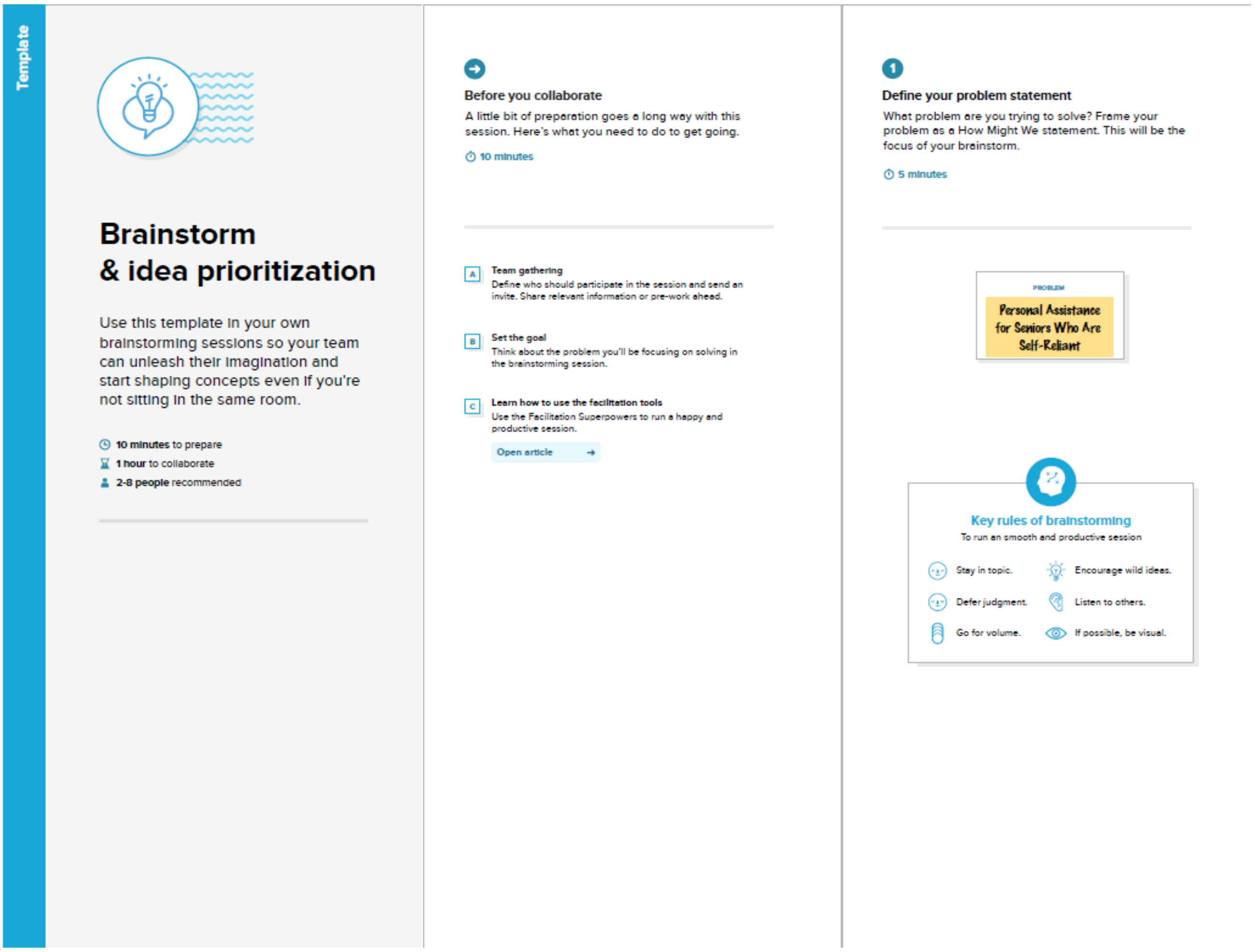
Figure 3.1. Empathy Map

3.2 IDEATION & BRAINSTORMING

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem-solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich number of creative solutions.

STEP-1 TEAM GATHERING, COLLABORATION AND SELECTING THE PROBLEM STATEMENT

This step includes the formation of a team, collaborating with the team by collecting the problems of the domain we have taken and consolidating the collected information into a single problem statement.



Template

Brainstorm
& idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

10 minutes to prepare
1 hour to collaborate
2-8 people recommended

➔

Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

10 minutes

A **Team gathering**
Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.

B **Set the goal**
Think about the problem you'll be focusing on solving in the brainstorming session.

C **Learn how to use the facilitation tools**
Use the Facilitation Superpowers to run a happy and productive session.

Open article ➔

1

Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

5 minutes

PROBLEM

Personal Assistance for Seniors Who Are Self-Reliant

Key rules of brainstorming

To run an smooth and productive session

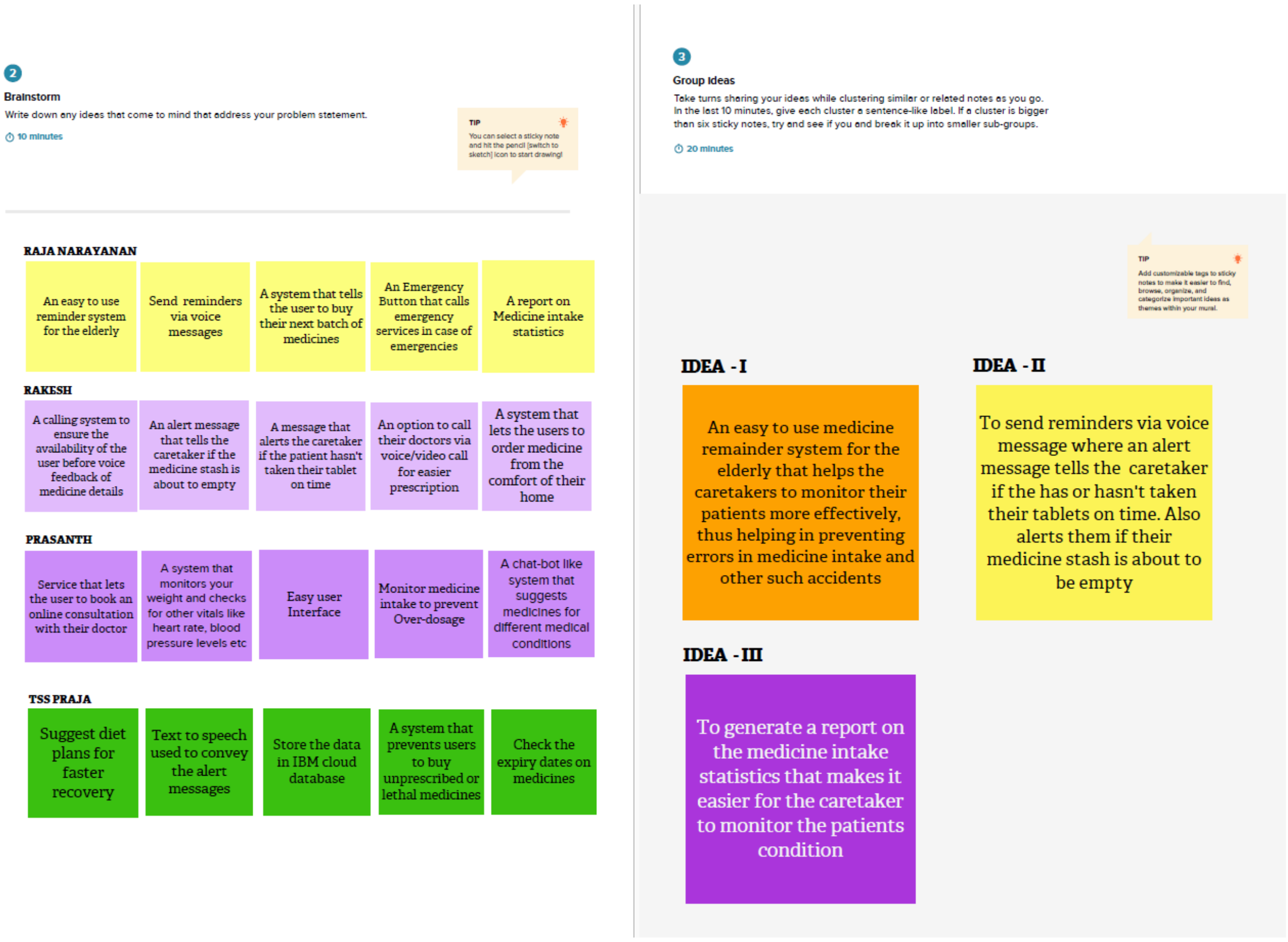
Stay in topic.
Encourage wild ideas.
Defer judgment.
Listen to others.
Go for volume.
If possible, be visual.

Figure 3.2. Ideation And Brainstorming

STEP 2 BRAINSTORM, IDEA LISTING AND GROUPING

This step of ideation includes the listing of individual ideas by teammates to help with the problem statement framed. All the individual ideas have been valued and made individual clusters.

Then discussed as a team and finally made an ideation Cluster A and concluded with the most voted ideas from all the clusters together and Cluster B with the least needed ideas.



2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

10 minutes

TIP

You can select a sticky note and hit the pencil [switch to sketch] icon to start drawing!

RAJA NARAYANAN

- An easy to use reminder system for the elderly
- Send reminders via voice messages
- A system that tells the user to buy their next batch of medicines
- An Emergency Button that calls emergency services in case of emergencies
- A report on Medicine intake statistics

RAKESH

- A calling system to ensure the availability of the user before voice feedback of medicine details
- An alert message that tells the caretaker if the medicine stash is about to empty
- A message that alerts the caretaker if the patient hasn't taken their tablet on time
- An option to call their doctors via voice/video call for easier prescription
- A system that lets the users to order medicine from the comfort of their home

PRASANTH

- Service that lets the user to book an online consultation with their doctor
- A system that monitors your weight and checks for other vitals like heart rate, blood pressure levels etc
- Easy user Interface
- Monitor medicine intake to prevent Over-dosage
- A chat-bot like system that suggests medicines for different medical conditions

TSS PRAJA

- Suggest diet plans for faster recovery
- Text to speech used to convey the alert messages
- Store the data in IBM cloud database
- A system that prevents users to buy unprescribed or lethal medicines
- Check the expiry dates on medicines

3

Group Ideas

Take turns sharing your ideas while clustering similar or related notes as you go. In the last 10 minutes, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you and break it up into smaller sub-groups.

20 minutes

TIP

Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mural.

IDEA - I

An easy to use medicine remainder system for the elderly that helps the caretakers to monitor their patients more effectively, thus helping in preventing errors in medicine intake and other such accidents

IDEA - II

To send reminders via voice message where an alert message tells the caretaker if the has or hasn't taken their tablets on time. Also alerts them if their medicine stash is about to be empty

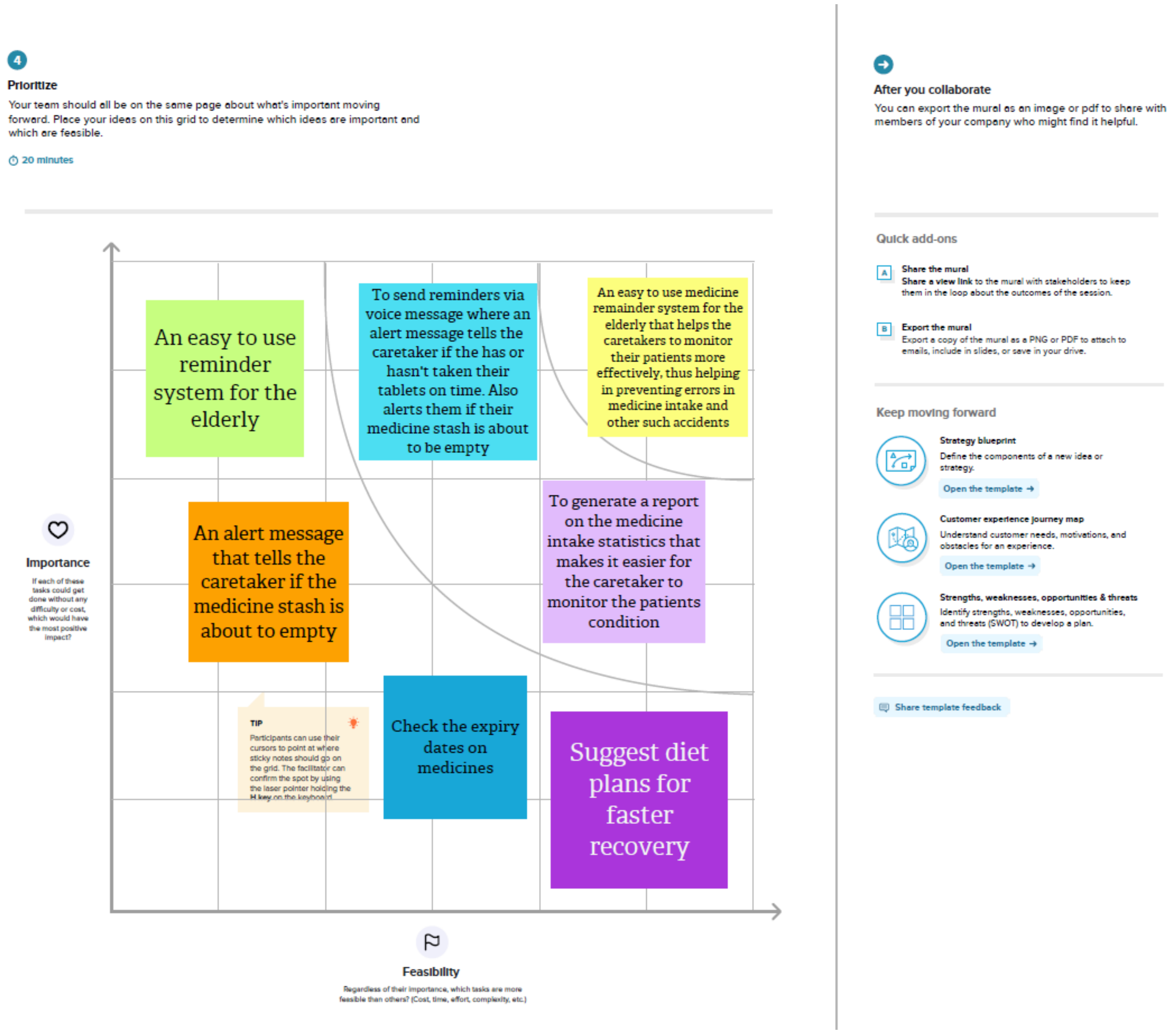
IDEA - III

To generate a report on the medicine intake statistics that makes it easier for the caretaker to monitor the patients condition

Figure 3.3. Brainstorm, Idea Listing and Grouping

STEP 3 IDEA PRIORITIZATION

This step includes the process of listing necessary components to come up with the working solution and making a hierarchy chart by prioritizing the components based on importance, say from the higher being backend and lower being the user interfacing components.



4

Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes

An easy to use reminder system for the elderly

To send reminders via voice message where an alert message tells the caretaker if the has or hasn't taken their tablets on time. Also alerts them if their medicine stash is about to be empty

An easy to use medicine remainder system for the elderly that helps the caretakers to monitor their patients more effectively, thus helping in preventing errors in medicine intake and other such accidents

Importance

If each of these tasks could get done without any difficulty or cost, which would have the most positive impact?

An alert message that tells the caretaker if the medicine stash is about to empty

To generate a report on the medicine intake statistics that makes it easier for the caretaker to monitor the patients condition

TIP

Participants can use their cursors to point at where sticky notes should go on the grid. The facilitator can confirm the spot by using the laser pointer holding the **H key** on the keyboard.

Check the expiry dates on medicines

Suggest diet plans for faster recovery

Feasibility

Regardless of their importance, which tasks are more feasible than others? (Cost, time, effort, complexity, etc.)

After you collaborate

You can export the mural as an image or pdf to share with members of your company who might find it helpful.

Quick add-ons

A **Share the mural**
Share a view link to the mural with stakeholders to keep them in the loop about the outcomes of the session.

B **Export the mural**
Export a copy of the mural as a PNG or PDF to attach to emails, include in slides, or save in your drive.

Keep moving forward

Strategy blueprint
Define the components of a new idea or strategy.
Open the template →

Customer experience journey map
Understand customer needs, motivations, and obstacles for an experience.
Open the template →

Strengths, weaknesses, opportunities & threats
Identify strengths, weaknesses, opportunities, and threats (SWOT) to develop a plan.
Open the template →

Share template feedback

Figure 3.4. Idea Prioritization

3.3 PROPOSED SOLUTION

Problem statement (problem to be solved)

Our project's main aim is to make a Smart medicine box for those users who regularly take medicines and the prescription of their medicine is very long as it is hard to remember for patients and their caregivers.

Idea / Solution description

A Smart medicine Box which remains us to take tablets regularly and the information have been fed to the backend of the Cloud database by the caretaker through a Mobile application that triggers the IOT device to take medicines to patients with a voice command and lights up.

Novelty / Uniqueness

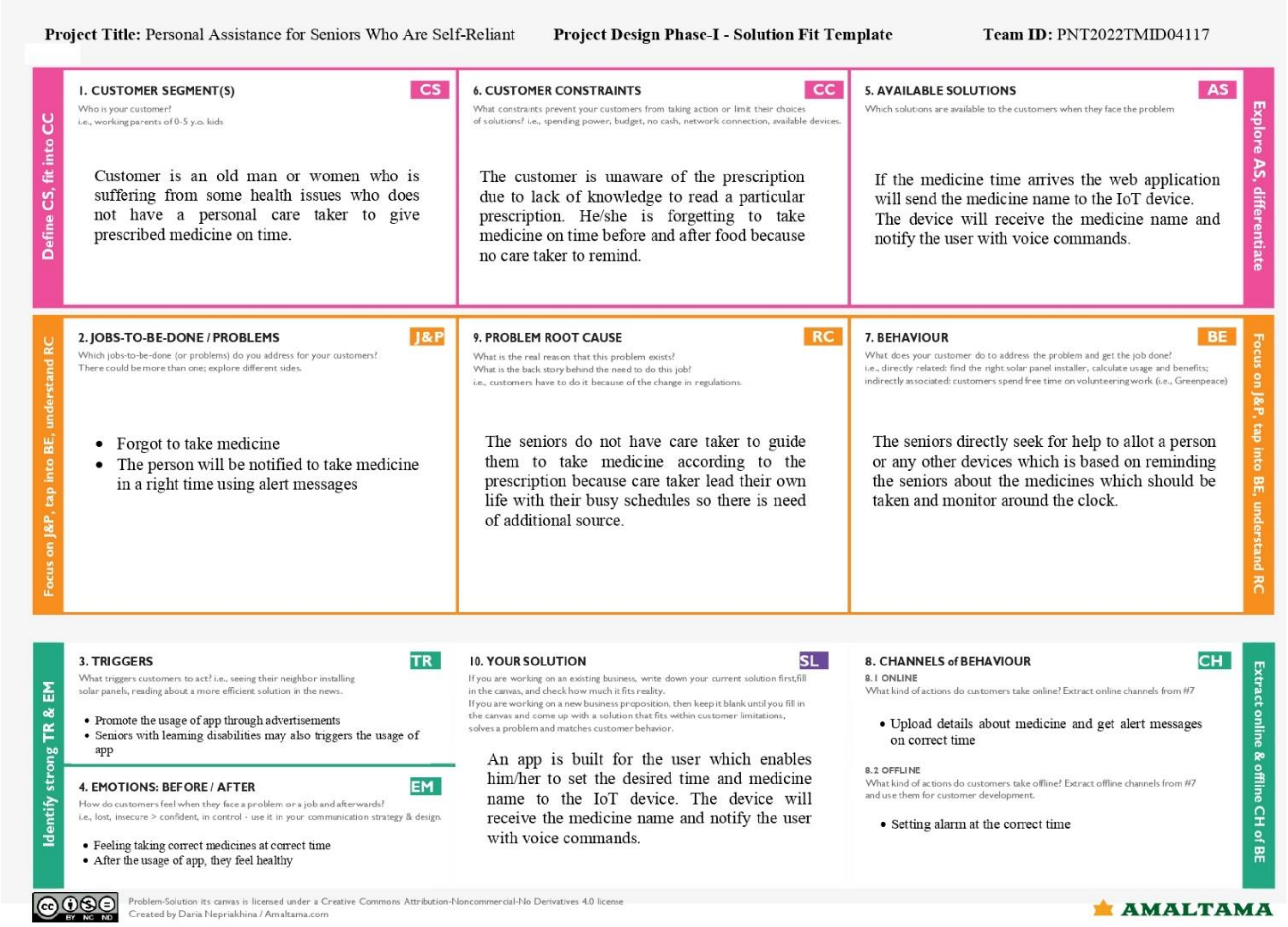
A compact Device which can be carried out anywhere else and Emergency SOS System for the patients.

Social Impact / Customer Satisfaction

A handy product which is used to remain takes regular doses of tablets or insulin for the patient or the senior citizen in society.

3.4 PROBLEM-SOLUTION FIT

The Problem-Solution Fit simply means that you have found a problem with your customer and that the solution you have realized for it solves the customer’s problem. It helps entrepreneurs, marketers and corporate innovators identify behavioural patterns and recognize what would work and why.



Project Title: Personal Assistance for Seniors Who Are Self-Reliant **Project Design Phase-I - Solution Fit Template** **Team ID:** PNT2022TMID04117

Define CS, fit into CC
Explore AS, differentiate
Focus on J&P, tap into BE, understand RC
Focus on J&P, tap into BE, understand RC
Identify strong TR & EM
Extract online & offline CH of BE

1. CUSTOMER SEGMENT(S) CS

Who is your customer?
i.e., working parents of 0-5 y.o. kids

Customer is an old man or women who is suffering from some health issues who does not have a personal care taker to give prescribed medicine on time.

6. CUSTOMER CONSTRAINTS CC

What constraints prevent your customers from taking action or limit their choices of solutions? i.e., spending power, budget, no cash, network connection, available devices.

The customer is unaware of the prescription due to lack of knowledge to read a particular prescription. He/she is forgetting to take medicine on time before and after food because no care taker to remind.

5. AVAILABLE SOLUTIONS AS

Which solutions are available to the customers when they face the problem

If the medicine time arrives the web application will send the medicine name to the IoT device.
The device will receive the medicine name and notify the user with voice commands.

2. JOBS-TO-BE-DONE / PROBLEMS J&P

Which jobs-to-be-done (or problems) do you address for your customers?
There could be more than one; explore different sides.

- Forgot to take medicine
- The person will be notified to take medicine in a right time using alert messages

9. PROBLEM ROOT CAUSE RC

What is the real reason that this problem exists?
What is the back story behind the need to do this job?
i.e., customers have to do it because of the change in regulations.

The seniors do not have care taker to guide them to take medicine according to the prescription because care taker lead their own life with their busy schedules so there is need of additional source.

7. BEHAVIOUR BE

What does your customer do to address the problem and get the job done?
i.e., directly related: find the right solar panel installer, calculate usage and benefits; indirectly associated: customers spend free time on volunteering work (i.e., Greenpeace)

The seniors directly seek for help to allot a person or any other devices which is based on reminding the seniors about the medicines which should be taken and monitor around the clock.

3. TRIGGERS TR

What triggers customers to act? i.e., seeing their neighbor installing solar panels, reading about a more efficient solution in the news.

- Promote the usage of app through advertisements
- Seniors with learning disabilities may also triggers the usage of app

4. EMOTIONS: BEFORE / AFTER EM

How do customers feel when they face a problem or a job and afterwards?
i.e., lost, insecure > confident, in control - use it in your communication strategy & design.

- Feeling taking correct medicines at correct time
- After the usage of app, they feel healthy

10. YOUR SOLUTION SL

If you are working on an existing business, write down your current solution first,fill in the canvas, and check how much it fits reality.
If you are working on a new business proposition, then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behavior.

An app is built for the user which enables him/her to set the desired time and medicine name to the IoT device. The device will receive the medicine name and notify the user with voice commands.

8. CHANNELS of BEHAVIOUR CH

8.1 ONLINE
What kind of actions do customers take online? Extract online channels from #7

- Upload details about medicine and get alert messages on correct time

8.2 OFFLINE
What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development.

- Setting alarm at the correct time

AMALTAMA

Figure 3.5. Solution Fit

CHAPTER - 4

REQUIREMENT ANALYSIS

4.1 Functional Requirements

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through our web application.
FR-2	User Confirmation	Confirmation within the web application.
FR-3	User Input Medication Data	Data should be fed to the dashboard text fields in the application.
FR-4	Acknowledgement	Data will be saved in the application and acknowledgement will be given to the user.
FR-5	Internet Connectivity	User should have a stable internet connection to accessthe functionality of our project via web application.
FR-6	Actuators	Speakers are required to notify the users.

4.2 Non-Functional Requirements

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The whole system can be accessed through webapplication. Hence it is very easy to use.
NFR-2	**Security**	The data will be stored in the cloud so the user'sdata is secured.
NFR-3	**Reliability**	As the data is stored in cloud, the data cannot bemanipulated externally so it is highly reliable.
NFR-4	**Performance**	As virtual sensors are used for sensing operations itsvalues are quite accurate. Hence performance would be considerably good.
NFR-5	**Availability**	The Cloud server is active all the time the user canavail it anytime.
NFR-6	**Scalability**	The application can be used in any kind of operating system either in small or large OS so the scalability isvery high.

CHAPTER - 5

PROJECT DESIGN

5.1 DATA FLOW DIAGRAMS

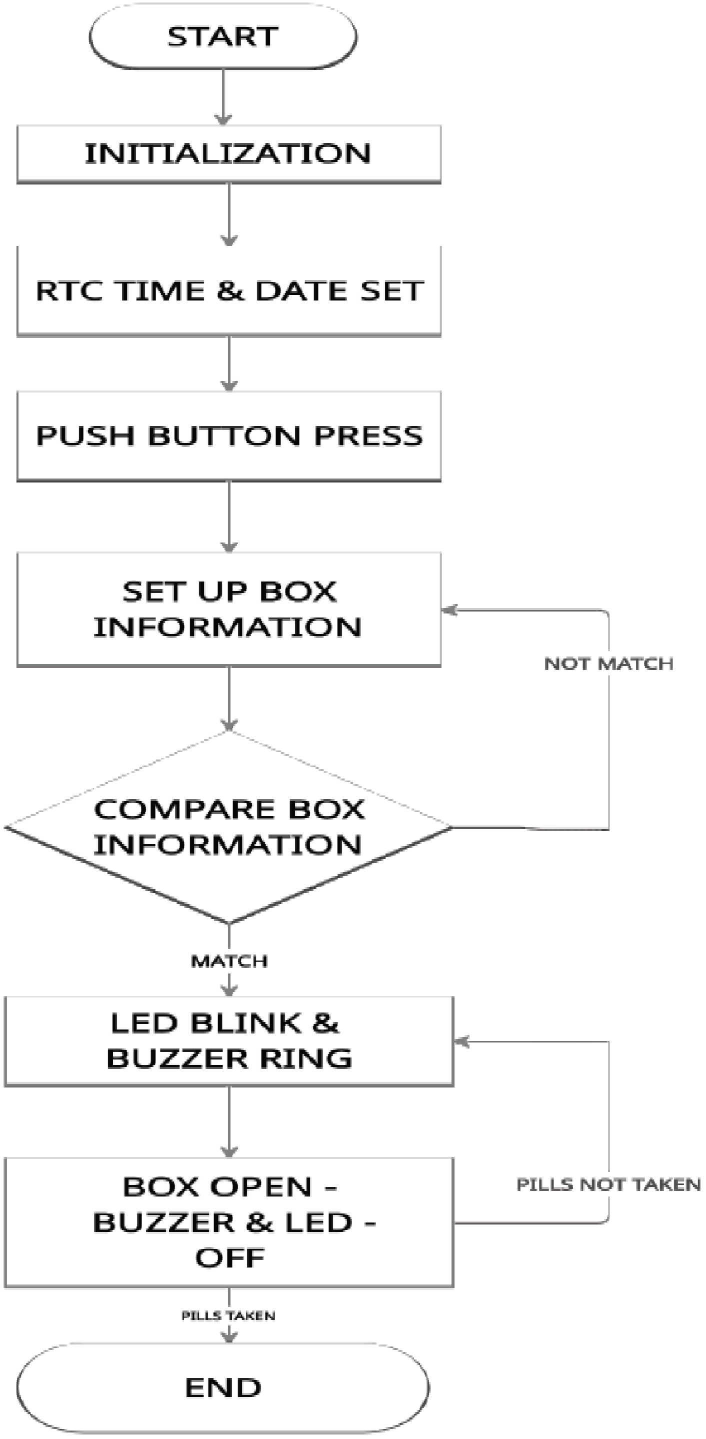


Figure 5.1. Data flow Diagram

5.2 SOLUTION AND TECHNICAL ARCHITECTURE

The solution architecture includes the components and the flow we have designed to deliver the solution.

Here, the application is planned to be designed, where the caretaker of the patients can feed the medicinal details to the database connected with the help of python and API calls. By monitoring that information in the program, timely message alerts are given to the patients to intake the medicine.

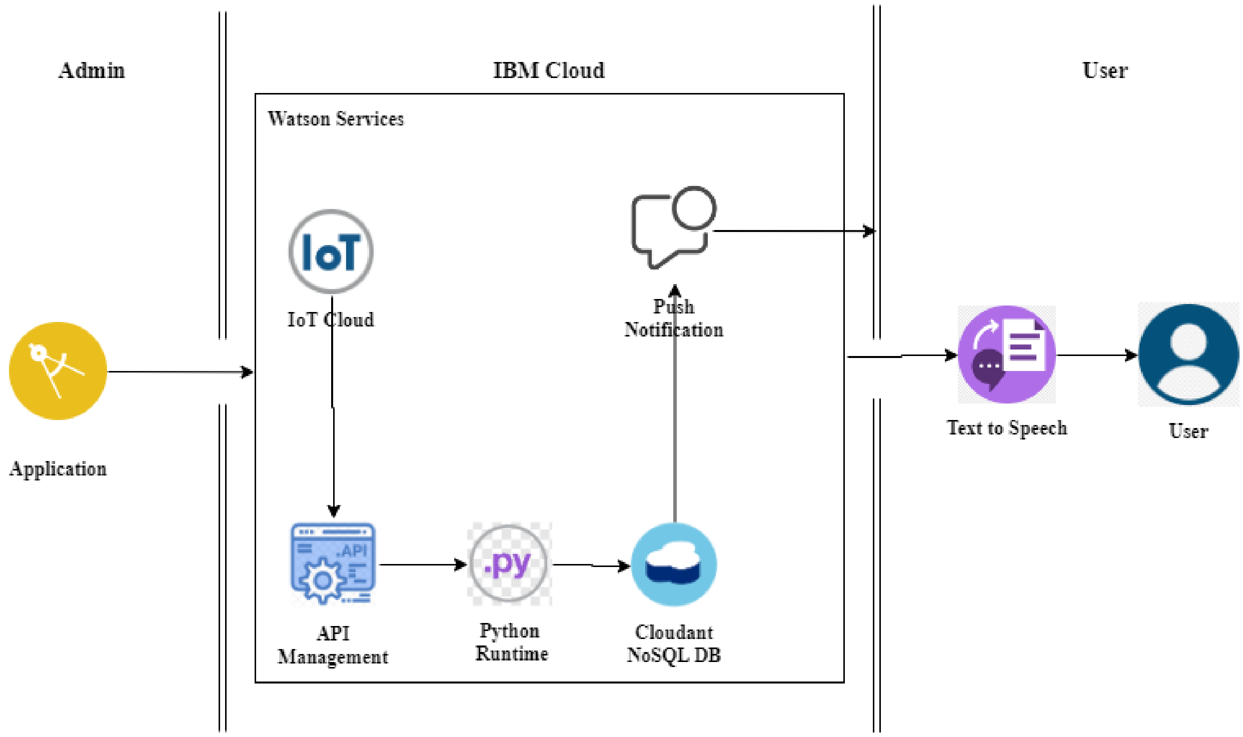


Figure 5.2. Technology Architecture

5.3 USER STORIES

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Senior citizen)	Caretaker	USN-1	As a user, I want to take Medicines on timeand monitor my health	I want to take medicines ontime	High	Sprint-1
Customer (Alzheimer patient)	Smart medicinebox	USN-2	As a user, I want to take my tablets on time byvoice command	I want to take my tablets ontime by voice command	High	Sprint-1
Customer (Mentally idledpatient)	Caretaker	USN-3	As a user, my patient needs to take medicineson time and monitoring the activity	My patient needs to take medicines on time	Medium	Sprint-2
Customer (Coma patient)	Caretaker	USN-4	As a user, my patient medication time and prescription should load in database for upcoming week	My patient medication time and prescription should be in database list	Low	Sprint-4
Customer (Disabled people's)	Smart medicinebox	USN-5	As a user, I need to take my medicine in nearby places with light notification	I need to take my medicinein nearby places with light notification	Medium	Sprint-3

Table 5.1. User Stories

CHAPTER - 6

PROJECT PLANNING AND SCHEDULING

6.1 SPRINT PLANNING & ESTIMATION

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint- 1	Notification Pop-up screen	USN-1	As a user, I want to take Medicines on time andmonitor my health	3	High	Raja Narayanan Prasanth TSS Praja
Sprint- 2	Text to Speech	USN-2	As a user, I want to take my tablets on time byvoice command	2	Medium	Raja Narayanan Rakesh Prasanth TSS Praja
Sprint- 3	Dashboard	USN-3	As a user, my patient needs to take medicineson time and monitoring the activity	2	Medium	Raja Narayanan Rakesh Prasanth TSS Praja
Sprint- 4	Data Storage	USN-4	As a user, my patient medication time andprescription should load in database for upcoming week	1	Low	Raja Narayanan Rakesh Prasanth TSS Praja

Table 6.1. Sprint Planning & Estimation

6.2 SPRINT DELIVERY SCHEDULE

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

Table 6.2. Sprint Delivery Schedule

6.3 REPORTS FROM JIRA

BURNDOWN CHART :

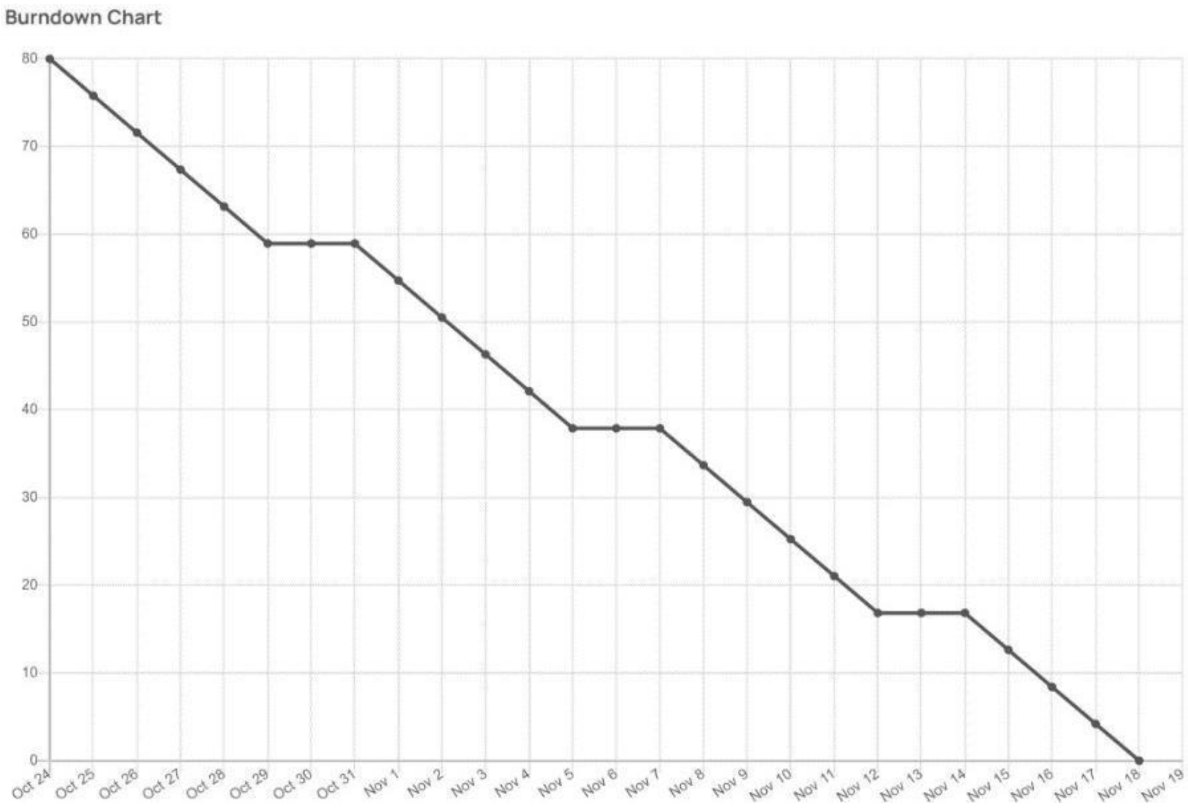
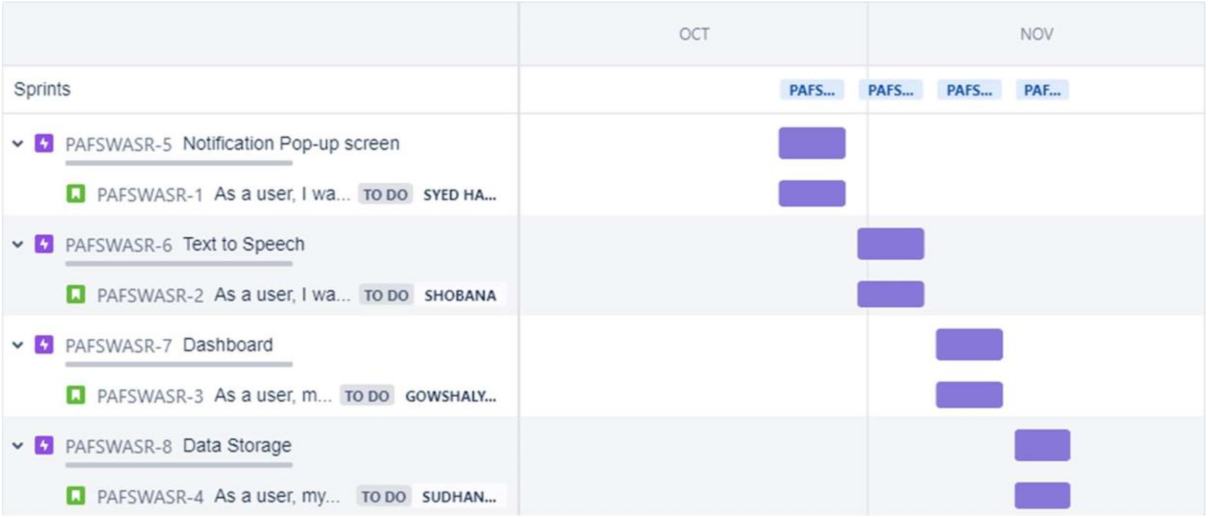


Figure 6.1. Burndown Chart

ROAD MAP :



Sprints

PAFSWASR-5 Notification Pop-up screen

PAFSWASR-1 As a user, I wa... TO DO SYED HA...

PAFSWASR-6 Text to Speech

PAFSWASR-2 As a user, I wa... TO DO SHOBANA

PAFSWASR-7 Dashboard

PAFSWASR-3 As a user, m... TO DO GOWSHALY...

PAFSWASR-8 Data Storage

PAFSWASR-4 As a user, my... TO DO SUDHAN...

Figure 6.2. Road Map

CHAPTER - 7

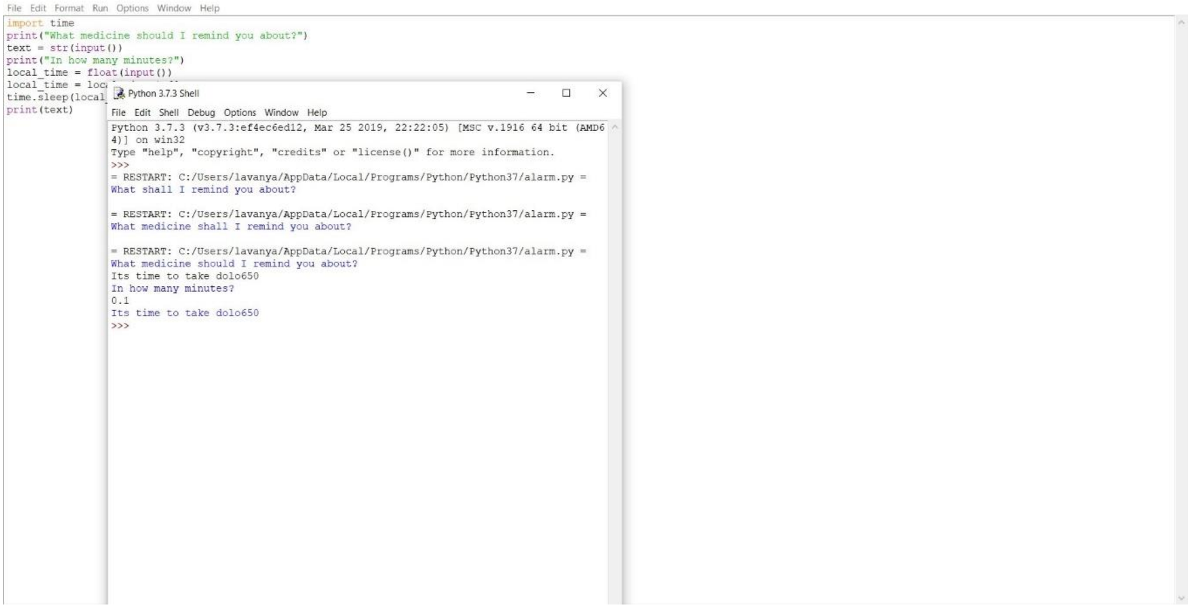
CODING AND SOLUTIONS

7.1 FEATURE 1

CREATING AN ALARM REMINDER USING PYTHON

Code:

```
import time
print("What medicine should I remind youabout?")
text = str(input())
print("In how many minutes?")
local_time = float(input())
local_time = local_time * 60 time.sleep(local_time)
print(text)
```


File Edit Format Run Options Window Help
Python 3.7.3 Shell
File Edit Shell Debug Options Window Help

```
import time
print("What medicine should I remind you about?")
text = str(input())
print("In how many minutes?")
local_time = float(input())
local_time = loc
time.sleep(local
print(text)
```

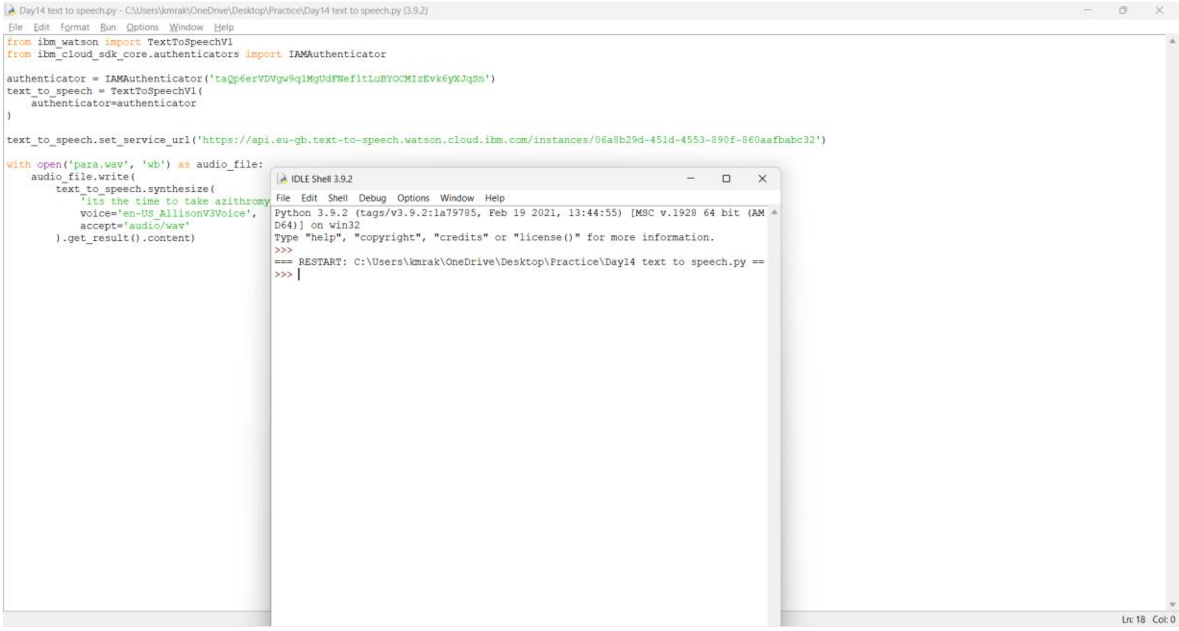
```
Python 3.7.3 (v3.7.3:ef4ec6ed12, Mar 25 2019, 22:22:05) [MSC v.1916 64 bit (AMD6
4)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/lavanya/AppData/Local/Programs/Python/Python37/alarm.py =
What shall I remind you about?

= RESTART: C:/Users/lavanya/AppData/Local/Programs/Python/Python37/alarm.py =
What medicine shall I remind you about?

= RESTART: C:/Users/lavanya/AppData/Local/Programs/Python/Python37/alarm.py =
What medicine should I remind you about?
Its time to take dolo650
In how many minutes?
0.1
Its time to take dolo650
>>>
```

7.2 FEATURE 2

PROGRAM FOR ACESSING APIs OF TTS SERVICE

Code:

```
from ibm_watson import TextToSpeechV1
from ibm_cloud_sdk_core.authenticators import IAMAuthenticator
authenticator =
IAMAuthenticator('taQp6erVDVgw9q1MgUdFNef1tLuBYOCMIzEvk6yXJqSn
')
text_to_speech = TextToSpeechV1(
    authenticator=authenticator
)
text_to_speech.set_service_url('https://api.eu-gb.text-to-
speech.watson.cloud.ibm.com/instances/06a8b29d-451d-4553-890f-
860aafbabc32')
with open('para.wav', 'wb') as audio_file:
    audio_file.write(
        text_to_speech.synthesize(
            'its the time to take azithromycin now',
            voice='en-US_AllisonV3Voice',
            accept='audio/wav'
        ).get_result().content)
```


Day14 text to speech.py - C:\Users\kmrak\OneDrive\Desktop\Practice\Day14 text to speech.py (3.9.2)
File Edit Format Run Options Window Help
IDLE Shell 3.9.2
File Edit Shell Debug Options Window Help
Ln: 18 Col: 0

```
from ibm_watson import TextToSpeechV1
from ibm_cloud_sdk_core.authenticators import IAMAuthenticator

authenticator = IAMAuthenticator('taQp6erVDVgw9q1MgUdFNef1tLuBYOCMIzEvk6yXJqSn')
text_to_speech = TextToSpeechV1(
    authenticator=authenticator
)

text_to_speech.set_service_url('https://api.eu-gb.text-to-speech.watson.cloud.ibm.com/instances/06a8b29d-451d-4553-890f-860aafbabc32')

with open('para.wav', 'wb') as audio_file:
    audio_file.write(
        text_to_speech.synthesize(
            'its the time to take azithromy
            voice='en-US_AllisonV3Voice',
            accept='audio/wav'
        ).get_result().content)
```

```
Python 3.9.2 (tags/v3.9.2:1a79785, Feb 19 2021, 13:44:55) [MSC v.1928 64 bit (AM
D64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
=== RESTART: C:\Users\kmrak\OneDrive\Desktop\Practice\Day14 text to speech.py ==
>>>
```

7.3 DATABASE SCHEMA

In this Project, we used Physical Database Schema. Physical schema is a term used in data management to describe how data is to be represented and stored (files, indices, et al.) in secondary storage using a particular database management system (DBMS)

Schema Login

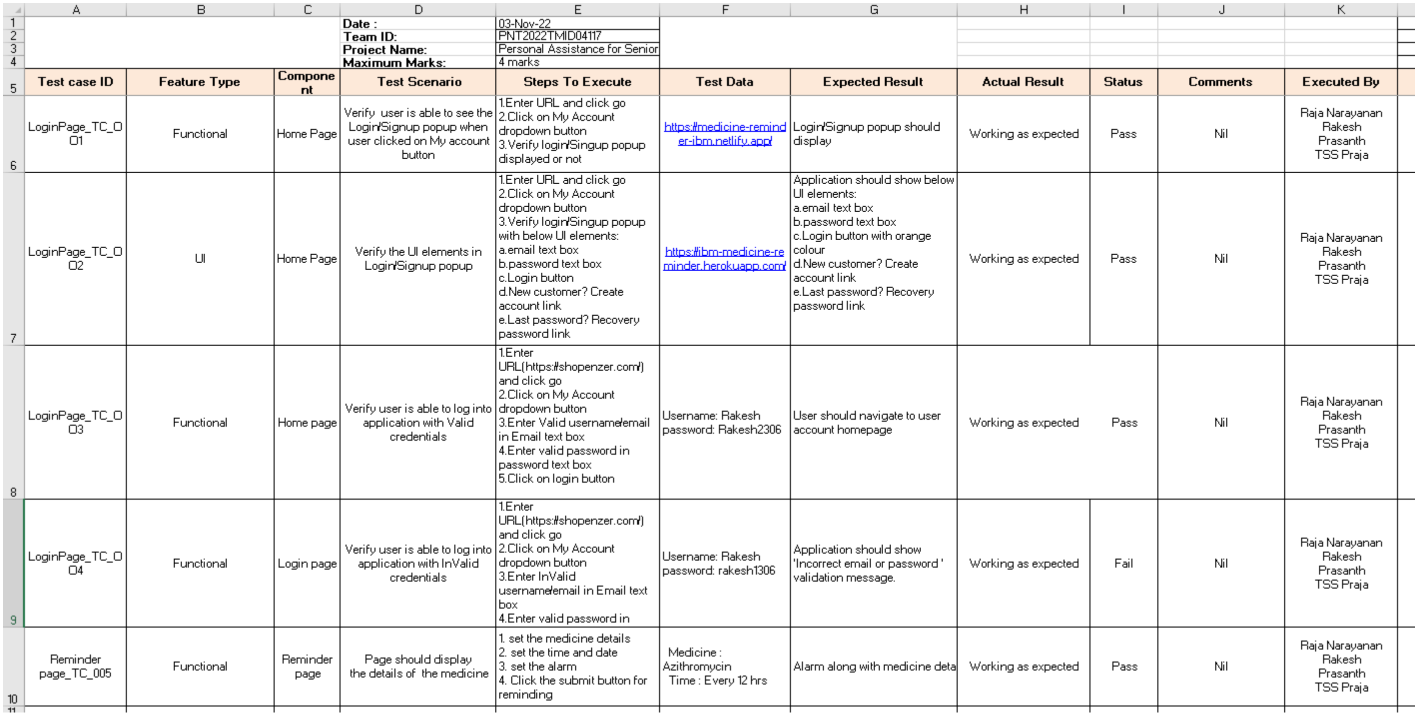
```
from pymongo import MongoClient
client = MongoClient(
'mongodb+srv://pancham:pancham@niggaballs.tjmtx.mongodb.net/myFirstDat
abase?retryWrites=true&w=majority')
db = client['medicine_schedule']
users = db['users']
scheduledb = db['schedule']
def get_all_medicines(user):
        document = scheduledb.find_one({"_id": user.lower()})
        medicines = document['medicines']
        list = []
        for medicine in medicines:
                list.append(medicine.title())
        return list
def medicine_card(medicine, price, href):
    card = f"""<div class="flex flex-col card rounded-lg my-5 p-3 shadow-md">
                <p class="text-gray-800 my-3">{medicine.title()}</p>
                <div class="flex">
                <a href='{href}' target='_blank'>
                  <button class="bg-primary-blue-light text-white p-1 rounded-lg
flex">
                    <i class="fas fa-external-link-alt mt-1.5 mx-1"></i>
                    <p class="mt-1 font-medium">₹{price} | Buy now</p>
                  </button></a>
                </div>
              </div>"""
    return card
```

CHAPTER - 8

TESTING

8.1 TEST CASES

A test case might be created as an automated script to verify the functionality per the original acceptance criteria. After doing manual exploratory testing, QA testers might suggest other functionality be added to the application as well as updated test cases be incorporated in the automated test suite.



Date :	03-Nov-22
Team ID:	PNT2022TMID04117
Project Name:	Personal Assistance for Senior
Maximum Marks:	4 marks

Test case ID	Feature Type	Component	Test Scenario	Steps To Execute	Test Data	Expected Result	Actual Result	Status	Comments	Executed By
LoginPage_TC_O01	Functional	Home Page	Verify user is able to see the Login/Signup popup when user clicked on My account button	1.Enter URL and click go 2.Click on My Account dropdown button 3.Verify login/Singup popup displayed or not	https://medicine-reminder-ibm.netlify.app/	Login/Signup popup should display	Working as expected	Pass	Nil	Raja Narayanan Rakesh Prasanth TSS Praja
LoginPage_TC_O02	UI	Home Page	Verify the UI elements in Login/Signup popup	1.Enter URL and click go 2.Click on My Account dropdown button 3.Verify login/Singup popup with below UI elements: a.email text box b.password text box c.Login button d.New customer? Create account link e.Last password? Recovery password link	https://ibm-medicine-reminder.herokuapp.com/	Application should show below UI elements: a.email text box b.password text box c.Login button with orange colour d.New customer? Create account link e.Last password? Recovery password link	Working as expected	Pass	Nil	Raja Narayanan Rakesh Prasanth TSS Praja
LoginPage_TC_O03	Functional	Home page	Verify user is able to log into application with Valid credentials	1.Enter URL(https://shopenzer.com/) and click go 2.Click on My Account dropdown button 3.Enter Valid username/email in Email text box 4.Enter valid password in password text box 5.Click on login button	Username: Rakesh password: Rakesh2306	User should navigate to user account homepage	Working as expected	Pass	Nil	Raja Narayanan Rakesh Prasanth TSS Praja
LoginPage_TC_O04	Functional	Login page	Verify user is able to log into application with InValid credentials	1.Enter URL(https://shopenzer.com/) and click go 2.Click on My Account dropdown button 3.Enter InValid username/email in Email text box 4.Enter valid password in	Username: Rakesh password: rakesh1306	Application should show 'Incorrect email or password ' validation message.	Working as expected	Fail	Nil	Raja Narayanan Rakesh Prasanth TSS Praja
Reminder page_TC_005	Functional	Reminder page	Page should display the details of the medicine	1. set the medicine details 2. set the time and date 3. set the alarm 4. Click the submit button for reminding	Medicine : Azithromycin Time : Every 12 hrs	Alarm along with medicine deta	Working as expected	Pass	Nil	Raja Narayanan Rakesh Prasanth TSS Praja

Table.8.1 Test Report

8.2 USER ACCEPTANCE TESTING

The purpose of this document is to briefly explain the test coverage and open issues of the Medicine reminder project at the time of the release to User Acceptance Testing (UAT).

Defect Analysis

This report shows the number of resolved or closed bugs at each severity level, and howthey were resolved.

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	10	4	2	3	20
Duplicate	1	0	3	0	4
External	2	3	0	1	6
Fixed	11	2	4	20	37
Not Reproduced	0	0	1	0	1
Skipped	0	0	1	1	2
Won't Fix	0	5	2	1	8
Totals	24	14	13	26	77

Table 8.1. Defect Analysis

Test Case Analysis

This report shows the number of test cases that have passed, failed, and untested.

Section	Total Cases	Not Tested	Fail	Pass
Print Engine	2	0	0	2
Client Application	2	0	0	2
Security	1	0	0	1
Outsource Shipping	1	0	0	1
Exception Reporting	2	0	0	2
Final Report Output	1	0	0	1
Version Control	1	0	0	1

Table 8.2. Test Case Analysis

CHAPTER - 9

RESULTS

9.1 Performance Metrics

NFT - Detailed Test Plan

S.No	Project Overview	NFT Test approach	Assumptions/Dependencies/Risks	Approvals /SignOff
1	Medicine Reminder Web -UI	Stress	App Crash/ Developer team/ Site Down	Approved
2	Medicine Reminder Web -UI	Load	Server Crash/ Developer team/ Server Down	Approved

Table 9.1. NFT - Detailed Test Plan

9.2 End Of Test Report

Project Overview	NFT Test approach	NFR - Met	GO/NO-GO decision	Identified Defects	Approvals /Sign Off
Medicine Reminder Web -UI	Stress	Performance	GO	Closed	Approved
Medicine Reminder Web -UI	Load	Scalability	NO-GO	Closed	Approved

Table 9.2. End Of Test Report

CHAPTER - 10

ADVANTAGES AND DISADVANTAGES

ADVANTAGES

- The software can help people set free from remembering the medicationtime and names.
- It helps the caretaker to determine the medication time, which can bevariable sometimes, depending upon the patient’s severity.
- The software is very user-friendly; the need not install any external app by the patient, economic for the caretaker too.
- The single software can be used by the caretaker for managing multiple patients at the same place.
- The details of the time scheduled, and patients’ intake is stored in the database for future reference easily.
- The overall stress of patients and caretakers is reduced and maintainedunder control by the software.

DISADVANTAGES

- The software currently can only alert the patient to take medicine, wecannot ensure whether they have taken it or not.
- The software currently can only alert people with SMS, it cannot makephone calls to help the illiterate.

CHAPTER - 11

CONCLUSION

The project can help senior citizens who forget to take their mandatory medications on time. As such situations can put them into trouble like an instant increase in blood pressure, heart rate, etc. Therefore, our project helps them by acting as a virtual assistant which can give them timely reminders to take the specified medicines. Thus, the problem of missing the timely intake of medicines is reduced and the health of the patient is well monitored by the caretaker. This project is economic and easy to use by anybody with a client, and caretaker connectivity.

The project helps private users and their connected caretakers by procuring the medication details from the caretaker and securely processing the data for the desired result of SMS alerts. Senior citizens are properly monitored by their caretakers and thus, caretakers can make sure that their patients are taking the right medicines at the right times without delay.

With this solution, the problem can attain an economic and easily usable way to overcome the difficulties faced by senior citizens. Thus, the result of our system provides fast curing of patient health by using our advantageous system.

CHAPTER - 12

FUTURE SCOPE

The project can be enhanced with many other features that can serve senior citizens even better. The product currently is a simple basic version which can only send SMS alerts on time. Some other additional features that are planned to be incorporated with this existing product are listed below:

- The dashboard can be made more versatile for the caretakers to manage patients medicine intake time and to monitor how it changes every day, by this a new or speculated time can be scheduled individually.

- The system can be enhanced with a smartwatch or health devices so that the health conditions can be continuously connected with the hospitals, and doctors to supervise and help them during emergencies.

- The system can relate to hardware product that stores and automatically opens the container and alerts with a voice message

- The system can further relate to the medical shop so that the hardware system automatically senses the tablet counts and alerts the medical shop to deliver the medicine.

CHAPTER - 13

APPENDIX

13.1 SOURCE CODE

CLIENT

```
import './App.css'

import React, { useState, useEffect } from "react"

import axios from "axios"

import DateTimePicker from "react-datetime-picker"

function App() {

  const [ reminderMsg, setReminderMsg ] = useState("")

  const [ remindAt, setRemindAt ] = useState()

  const [ reminderList, setReminderList ] = useState([])

useEffect(() => {

axios.get("http://localhost:9000/getAllReminder").then( \=>setReminderList(res.data))

  }, [])

  const addReminder = () => {

axios.post("http://localhost:9000/addReminder", { reminderMsg, remindAt })

.then( res =>setReminderList(res.data))

setReminderMsg("")

setRemindAt()

  }

  const deleteReminder = (id) => {
```

```
axios.post("http://localhost:9000/deleteReminder", { id })
. then( res =>setReminderList(res.data))
  }
  return (
<div className="App">
<div className="homepage">
<div className="homepage_header">
<h1>Medicine Reminder </h1>
<input type="text" placeholder="Reminder notes here..." value={reminderMsg}
onChange={e =>setReminderMsg(e.target.value)} />
<DateTimePicker
            value={remindAt}
onChange={setRemindAt}
minDate={new Date()}
minutePlaceholder="mm"
hourPlaceholder="hh"
dayPlaceholder="DD"
monthPlaceholder="MM"
yearPlaceholder="YYYY"
          />
<div className="button" onClick={addReminder}>Add Reminder</div>
</div>
<div className="homepage_body">
```

```
         {
reminderList.map( reminder => (
<div className="reminder_card" key={reminder._id}>
<h2>{reminder.reminderMsg}</h2>
<h3>Remind Me at:</h3>
<p>{String(new Date(reminder.remindAt.toLocaleString(undefined,
{timezone:"Asia/Kolkata"})))}</p>
<div className="button" onClick={() =>deleteReminder(reminder._id)}>Delete</div>
</div>
          ))
         }
</div>
</div>
</div>
  )
}
export default App;
```

SERVER

```
require('dotenv').config()
const express = require("express")
const mongoose = require("mongoose")
const cors = require("cors")
//APP config
const app = express()
app.use(express.json())
app.use(express.urlencoded())

app.use(cors())

//DB config

mongoose.connect('mongodb://127.0.0.1:27017/IBM-Prototype_DB', {

useNewUrlParser: true,

useUnifiedTopology: true

}, () =>console.log("DB connected"))

const reminderSchema = new mongoose.Schema({

reminderMsg: String,

remindAt: String,

isReminded: Boolean

})

const Reminder = new mongoose.model("reminder", reminderSchema)

//Whatsapp reminding functionality

setInterval(() => {

Reminder.find({}, (err, reminderList) => {

    if(err) {

       console.log(err)

    }

    if(reminderList){

reminderList.forEach(reminder => {

        if(!reminder.isReminded){

           const now = new Date()
if((new Date(reminder.remindAt) - now) < 0) {
Reminder.findByIdAndUpdate(reminder._id,        {isReminded:        true},        (err,
remindObj)=>{
                    if(err){
                        console.log(err)
                    }
                    const client =
require('twilio')('ACed0ea1d4fae9d7375672d0742331e96b','dcc8fb9228ae68d156727
d7ed5f656b2');
client.messages
.create({
                                    body: reminder.reminderMsg,
                                    to: '+919025253871',
                                    from:'+12182978628',
                                 })
.then(message => console.log(message.sid))
.done();
                 })
              }
           }
        })
     }
  })
},1000)
```

```
//API routes
app.get("/getAllReminder", (req, res) => {
Reminder.find({}, (err, reminderList) => {
        if(err){
            console.log(err)
        }
        if(reminderList){
res.send(reminderList)
        }
    })
})
app.post("/addReminder", (req, res) => {
    const { reminderMsg, remindAt } = req.body
    const reminder = new Reminder({
reminderMsg,
remindAt,
isReminded: false
    })
reminder.save(err => {
        if(err){
            console.log(err)
        }
Reminder.find({}, (err, reminderList) => {
```

```
            if(err){
                console.log(err)
            }
            if(reminderList){
res.send(reminderList)
            }
        })
    })
})
app.post("/deleteReminder", (req, res) => {
Reminder.deleteOne({_id: req.body.id}, () => {
Reminder.find({}, (err, reminderList) => {
            if(err){
                console.log(err)
            }
            if(reminderList){
res.send(reminderList)
            }
        })
    })
})
app.listen(9000, () => console.log("Be started"))
```

GitHub & Project Demo Link

GitHub Link : https://github.com/IBM-EPBL/IBM-Project-21871-1659794053

Project Demo Link: IBM-Project-21871-1659794053/Final Deliverables/Project Video at main · IBM-EPBL/IBM-Project-21871-1659794053 (github.com)