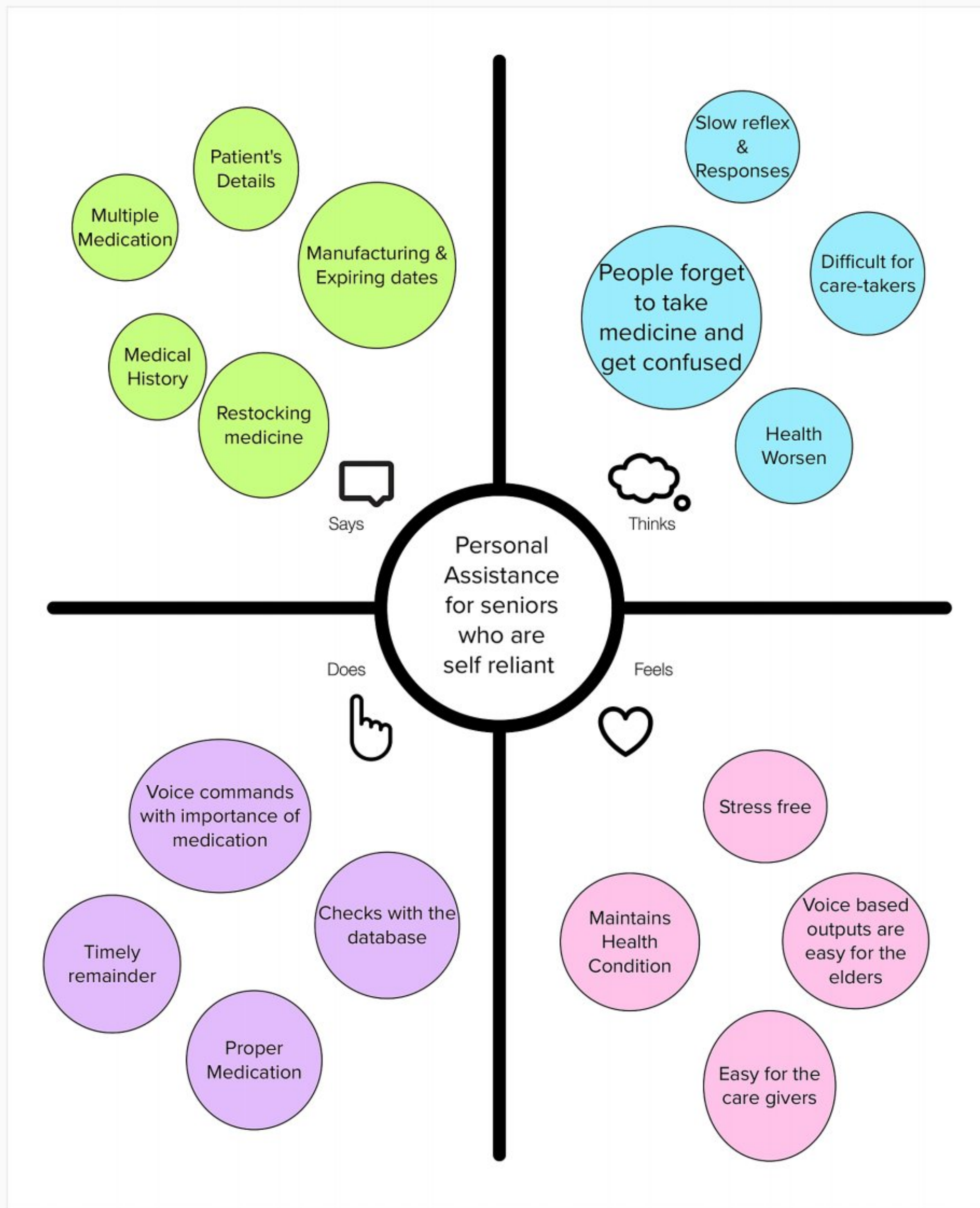


**PNT2022TMID11112 - PERSONAL ASSISTANCE FOR SENIORS WHO ARE SELF RELIANT**

**TEAM DETAILS:**

S.NO	NAME	POSITION	COLLEGE
1	Thirupura Sundhari.K	Team Lead	K.Ramakrishnan College of Engineering
2	Srilalitha.R	Team Member 1	K.Ramakrishnan College of Engineering
3	Sathana.R	Team Member 2	K.Ramakrishnan College of Engineering
4	Sneka.S	Team Member 3	K.Ramakrishnan College of Engineering

EMPATHY MAP:



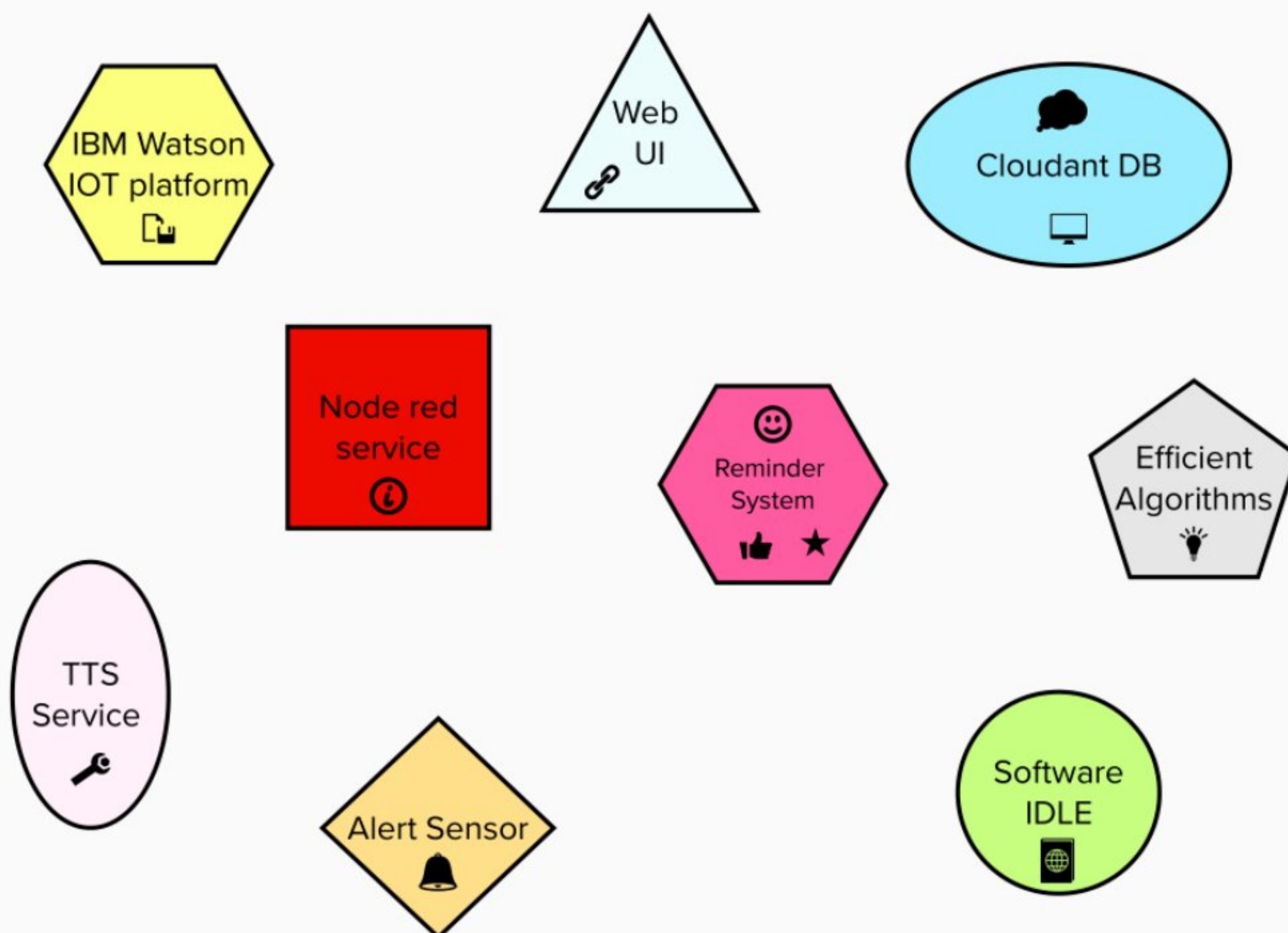


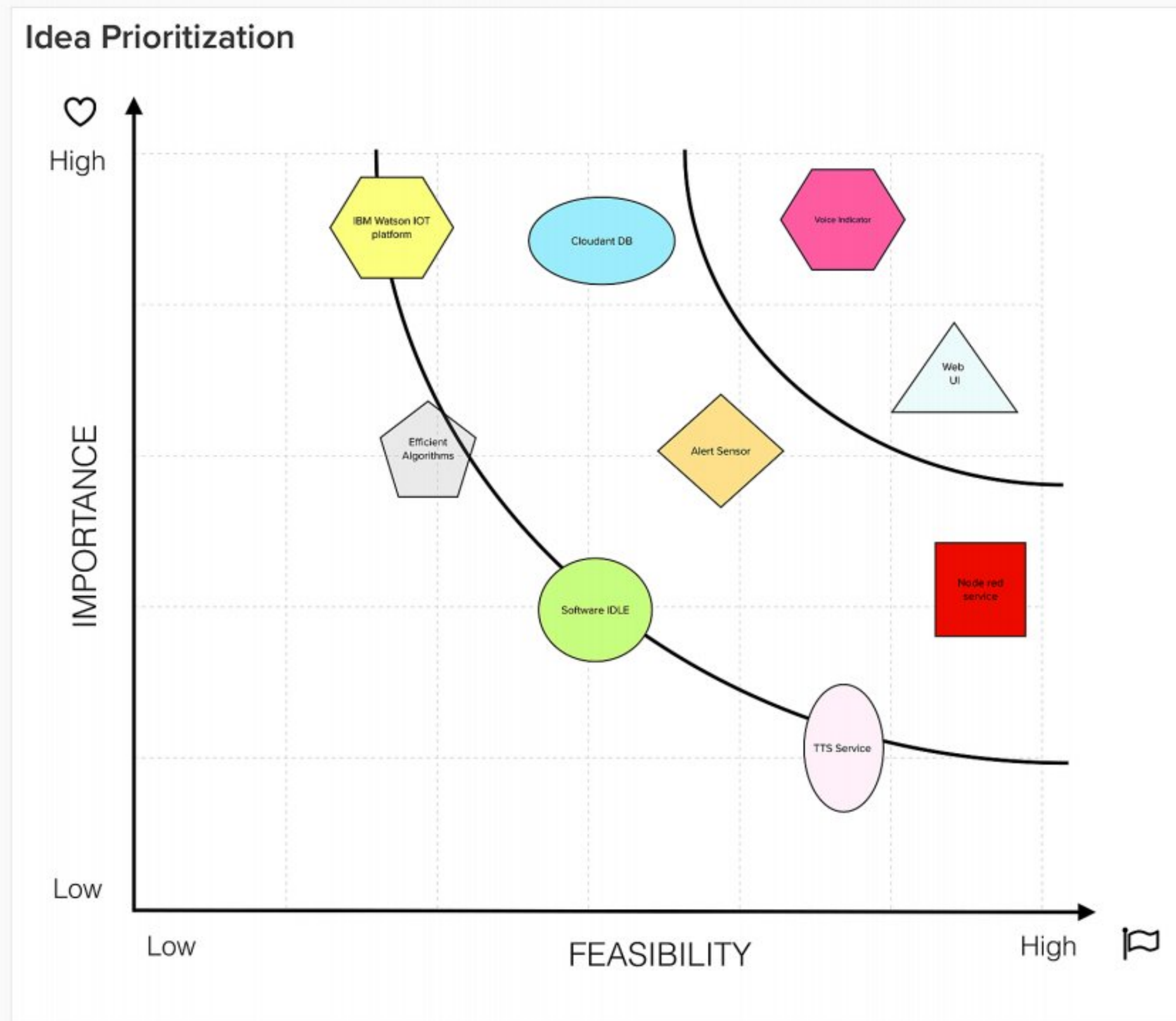
NEED STATEMENT:



Elderly people often forget to take medicine at regular period. So that, there is a need for a Reminder system inorder to maintain their health.

BIG IDEAS:





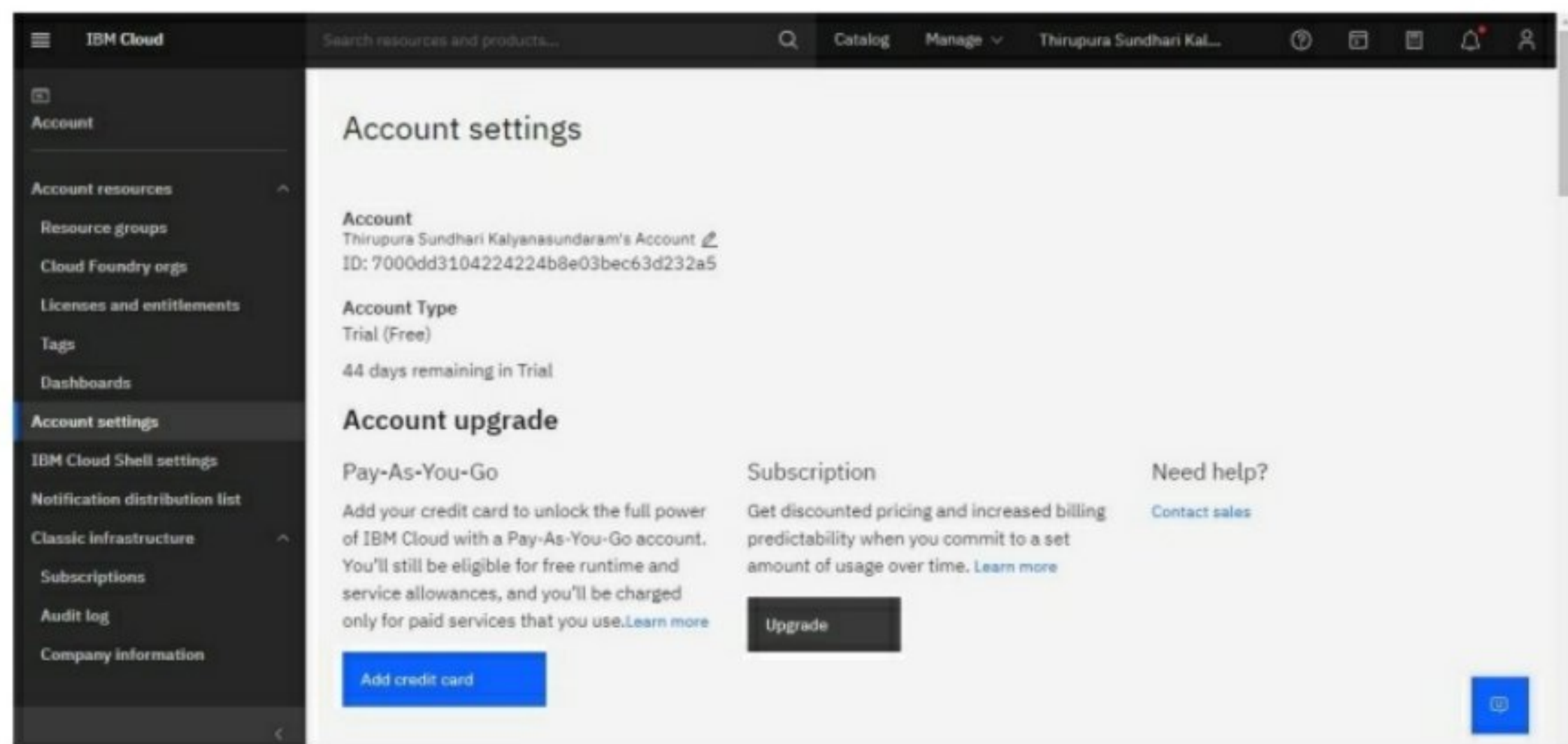
# PNT2022TMID11112 - PERSONAL ASSISTANCE FOR SENIORS WHO ARE SELF RELIANT

## Prerequisites

### IBM Cloud Services

Date	31 October 2022
Team ID	PNT2022TMID11112
Project Name	Personal Assistance for Seniors who Are Self-Reliant

IBM Cloud account created successfully



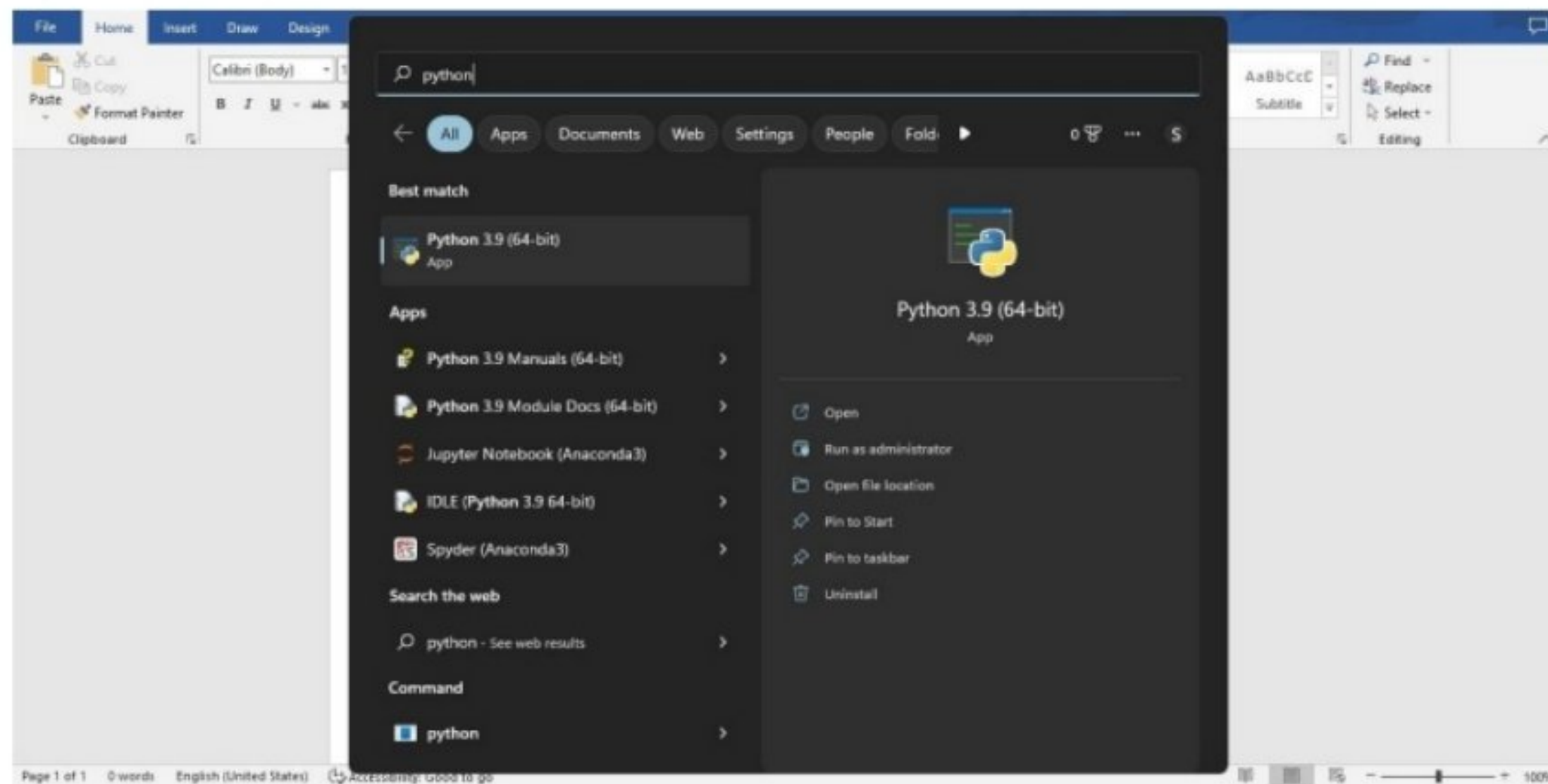


## Prerequisites

### Software

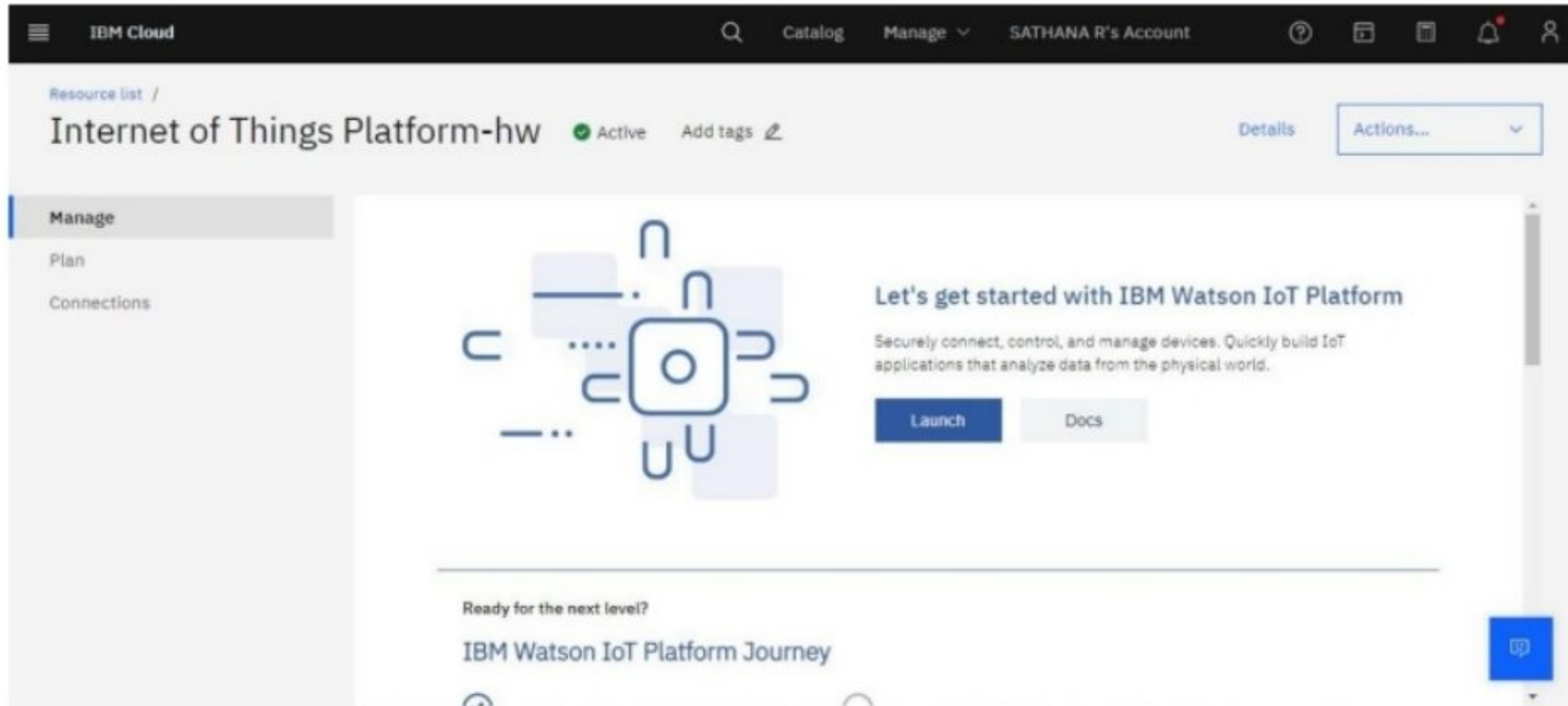
Date	31 October 2022
Team ID	PNT2022TMID11112
Project Name	Personal Assistance for Seniors who Are Self-Reliant

Python interpreter installed successfully



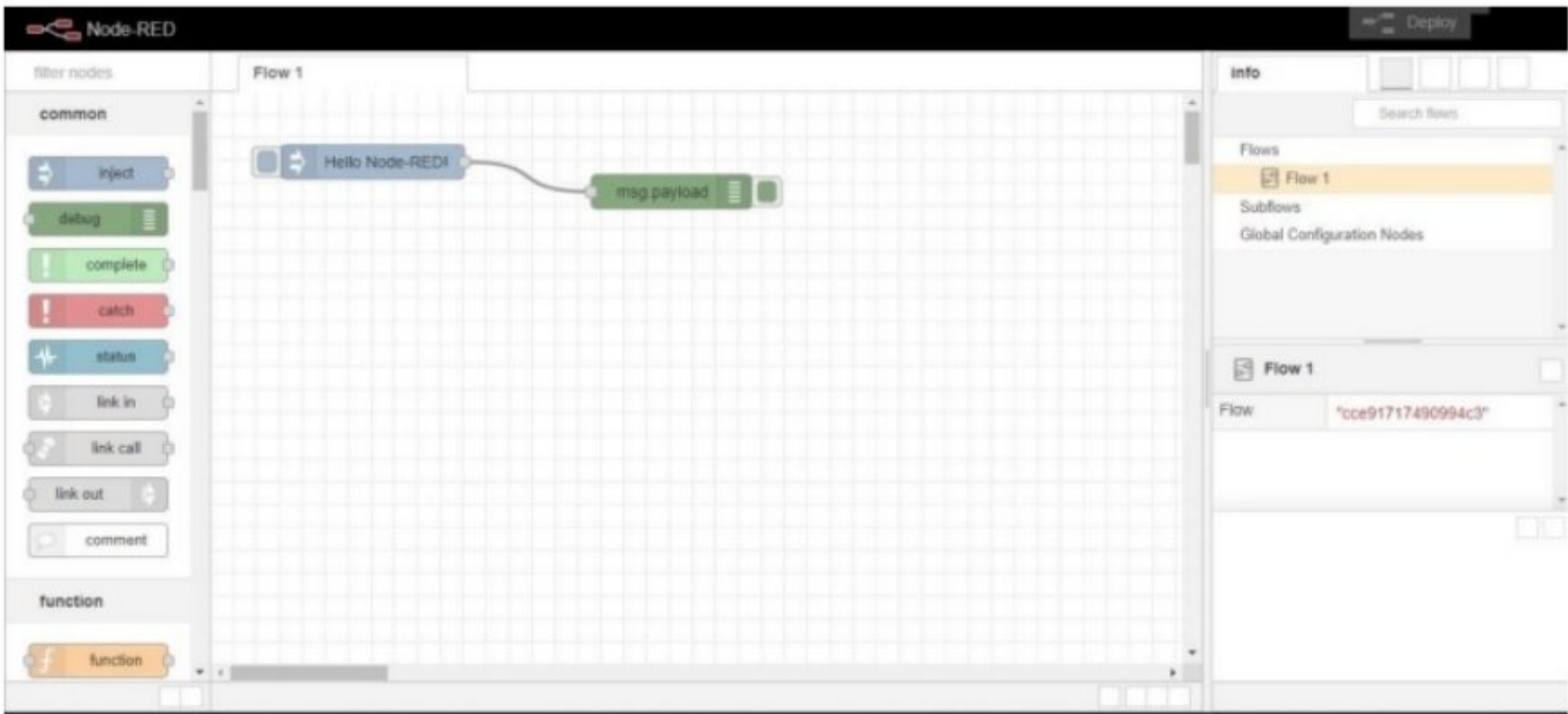
## Create IBM Watson IoT Platform & Device

Team ID	PNT2022TMID11112
Project Name	Personal Assistance for Seniors who Are Self-Reliant



Create Node-RED Service

Team ID	PNT2022TMID11112
Project Name	Personal Assistance for Seniors who Are Self-Reliant

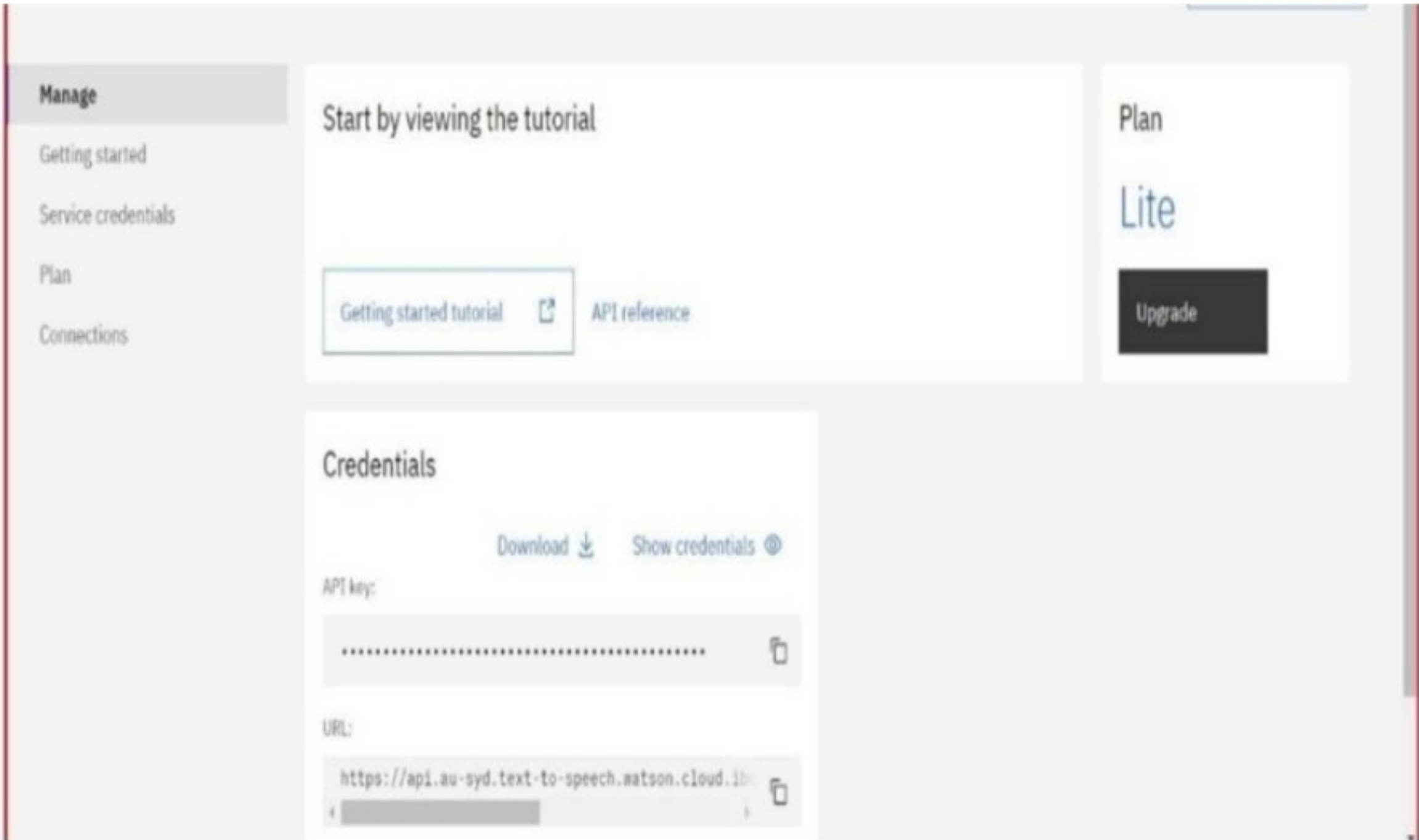




Create Text To Speech Service

Team ID	PNT2022TMID11112
Project Name	Personal Assistance for Seniors who Are Self-Reliant

Text to speech created successfully



Create A Form

Team ID	PNT2022TMID11112
Project Name	Personal Assistance for Seniors who Are Self-Reliant

Form created successfully

Home

Medication

Medicine

Time

Time

Submit

Cancel

## A Function to Compare the Time

Team ID	PNT2022TMID11112
Project Name	Personal Assistance for Seniors who Are Self-Reliant

```
var d=msg.payload.date;
var t=msg.payload.time;
var date=d.slice(0,10)
var time=t.slice(10,25)
var hit=new Date(date+time)
hit.setDate(hit.getDate()+ 1);
var utc=hit.getTime()+(hit.getTimezoneOffset()*60000);
var offset=5.5
newDate=new Date(utc+(3600000*offset));
var n=newDate.toISOString()
var da=n.slice(0,10)
var ti=n.slice(11,16)
msg.payload={
  "_id": da+" "+ti, "name": msg.payload.name
}
return msg;
```



**Project Design Phase-I  
Proposed Solution Template**

Date	30 September 2022
Team ID	PNT2022TMID11112
Project Name	Project -Personal Assistance for Seniors Who Are Self-Reliant
Maximum Marks	2 Marks

**Proposed Solution Template:**

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Sometimes elder people forget to take the medicine at the required time of medicines. And also forgets which medicine He/She have to take at required time. And it is difficult for Caretakers to monitor them around the clock. To avoid this problem, we have made this medicine reminder system
2.	Idea / Solution description	The ageing of a population increases the quantity of elders dependent in self-care. Thus, being dependent in a very home context could be a undeniable fact that deserves attention from social support entities integrated into the community, like nursing homes, which play a central role in supporting the families involved. Therefore, the planning and development of an archetype of a replacement system is proposed.

# PNT2022TMID11112 - PERSONAL ASSISTANCE FOR SENIORS WHO ARE SELF RELIANT

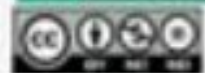
		central role in supporting the families involved. Therefore, the planning and development of an archetype of a replacement system is proposed, which main objectives are to accompany, teach, and share information between its users, taking under consideration safe medical validation and ethical issues, through emerging health ICT technologies. This archetype may be a reinforcement, that is, how to push and complete the knowledge and skills to house elders' well-being and health, also as their informal caregivers' welfare.
3.	Novelty / Uniqueness	An intervention called CAPABLE -- for Community Aging in Place, Advancing Better Living for Elders - involves home visits with an occupational therapist, a registered nurse, and a handyman to work together with older adults to identify mobility and self-care issues in their homes and fix or modify them. Implementing a system that helps the client remember to take medicines at the proper time each day, CAPABLE makes it more likely that older adults will be able to stay in their homes longer, improving health outcomes and decreasing medical costs.
4.	Social Impact / Customer Satisfaction	Personal assistants do not administer or manage medications, but they can remind your parent to take medicines when the time comes. Since many elderly forget to take medicines—or wind up taking double or triple doses—having someone



		there to remind them and monitor medications can prove invaluable. Mom and dad get the help they need, and you can stop worrying
5.	Business Model (Revenue Model)	Elderly people and improving their quality of life in the context of the possibility of increasing their effectiveness through the use of modern ICT solutions. The concept of the service e-marketplace platform for occupational activation of elderly people is presented and set in the context of Polish market conditions. On that basis the business model for implementation of such a platform for Polish market is proposed, what constitutes the main aim of the paper.
6.	Scalability of the Solution	It is expected that In a population of 100 low-income older adults on Medicaid and Medicare who will be made to participate in the CAPABLE study: 79 percent will improve their self-care over the course of five months. They will experience a decrease in depressive symptoms similar to that of taking an anti-depressant medicine.



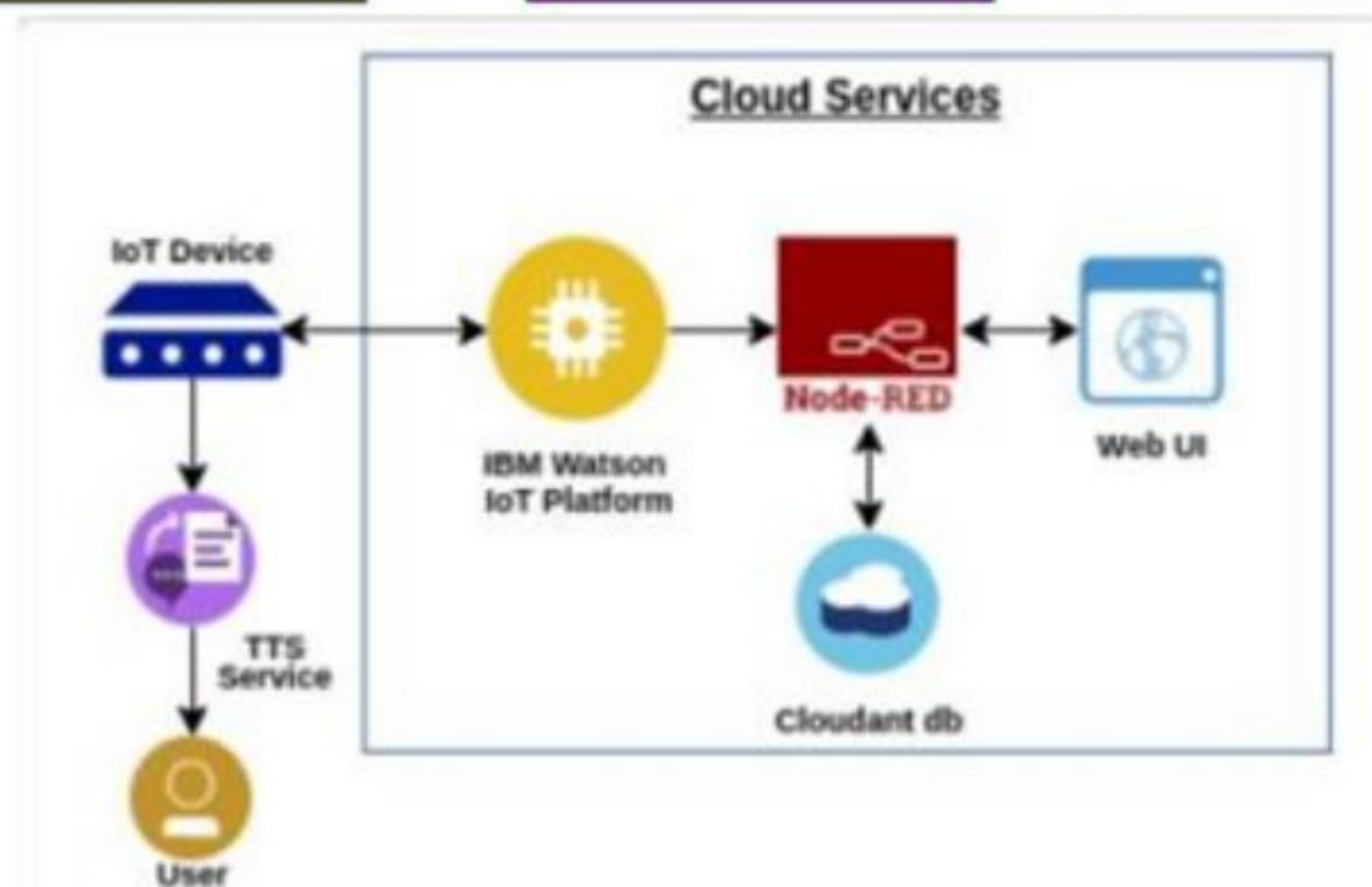
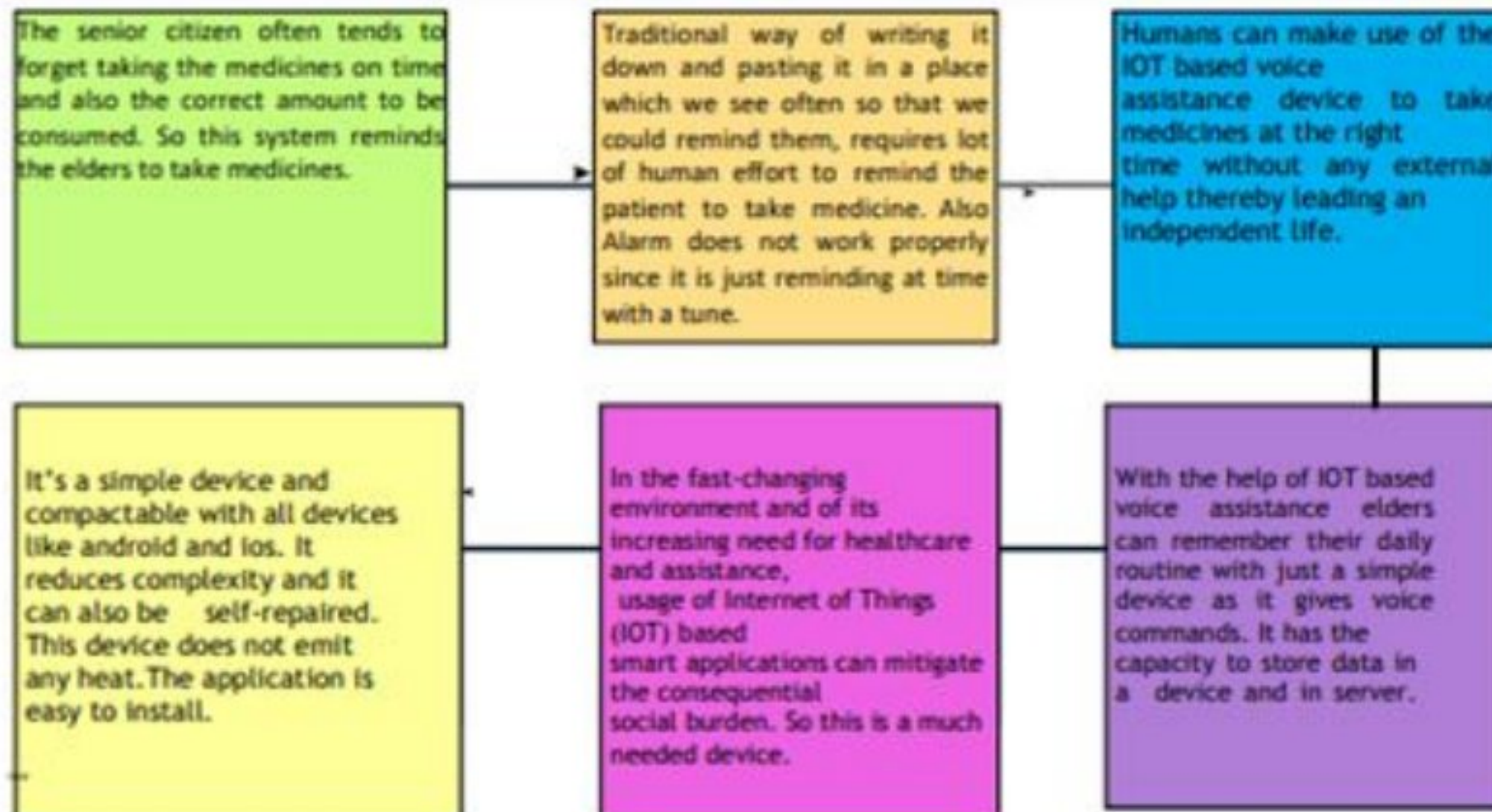
Problem-Solution fit canvas 2.0		IOT Based Advanced Medical Assistance for self reliant elders.	
<b>1. CUSTOMER SEGMENT(S)</b> Who is your customer? Who is your customer? Senior Citizens who are self reliant are the target customers.	<b>6. CUSTOMER CONSTRAINTS</b> What constraints prevent your customers from taking action or limit their choices of solutions? i.e. spending power, budget, no cash, network connection, available devices. The customer must not be hearing impaired since the application will give the voice commands about the medicine and the internet connection is mandatory. A android or an ios device is needed	<b>5. AVAILABLE SOLUTIONS</b> Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? In the past practicing heart healthy lifestyle choices such as exercising, eating a Mediterranean diet, avoiding stress. These are temporary solutions and cannot lead an independent life. Our device promotes their lifestyle by being available all the time with a helping hand.	
		<b>7. BEHAVIOUR</b> 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) Updating the medicine regularly after the doctors visit and check ups. Updating the applications regularly. Making sure that the speakers are working fine.	
<b>2. JOBS-TO-BE-DONE / PROBLEMS</b> Which jobs-to-be-done (or problems) do you address for your customers? The senior citizen often tend to forget taking the medicines on time and also the correct amount to be consumed. So this system reminds the elders to take medicines.	<b>9. PROBLEM ROOT CAUSE</b> 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. Forgetfulness of the elders are the root cause along with the confusion on how much to consume, when to consume, and what medicine to take.		
<b>3. TRIGGERS</b> What triggers customers to act? i.e. seeing their neighbor installing The senior citizen always find it difficult to take medicines at the prescribed time due to complications that come with old age. The main problem of not taking medicine on time is that it will affect the health and wellbeing and is difficult for the caretakers.	<b>10. YOUR SOLUTION</b> 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. The memory issue that comes with age happens to be an issue reminding them frequently often tends to do the deed and this application reminds them via a voice note and many senior citizens might be illiterate or lost the ability to read find it easy.	<b>8. CHANNELS of BEHAVIOUR</b> <b>1. ONLINE</b> What kind of actions do customers take online? Extract online channels from #7 Through online, the caretakers can get the location of the patient when they are outside also connecting to the server to change the medicine details.	
<b>4. EMOTIONS: BEFORE / AFTER</b> How do customers feel when they face a problem or a job and afterwards? Before using it the senior citizens and their caretakers are under constant panic mode about the consumption of medicine in its correct measures. Now after this application it became easy for every one and both elders and the care givers can have a peaceful and stress free day.		<b>8.2 OFFLINE</b> What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development. The data is also stored in the device so when they go away from the care givers they can survive easily and live a healthy	



Problem-Solution fit canvas is licensed under a Creative Commons Attribution-NonCommercial-NoDerivs 4.0 license.  
Created by Daria Reginaldina / Amaltama.com

**AMALTAMA**





## PNT2022TMID11112 - PERSONAL ASSISTANCE FOR SENIORS WHO ARE SELF RELIANT

phases	Phase 1 Motivation	Phase 2 Ideas	Phase 3 Features	Phase 4 Futurescope	Phase 5 Conclusion
Activities performed	To design an reminder app for seniors who are self reliant	IBM watson IoT platform, web UI, Cloudant DB and efficient algorithms are used for precise timing	Node Red service, TTS service & software IDLE are used	The device will notify the user at correct intervals along with the medicine name via voice commands	Makes the work of care takers easier and maintains good health
Emotions	Unworried	Care takers are content to use the app for the elderly	Reminds at precise intervals	Mentions the dates of expiry of the medicines	Maintains health & stress free
Overall Experiences	Efficacious	Efficacious	Efficacious	Efficacious	Efficacious
Customer Expectations	Simple & user friendly	By the application of cloudant DB, care takers can monitor the of the elderly	It keeps track of the dosage and regular reports provided by the physicians	Voice commands makes easier usage for elders	The care givers can be stress free and the Elderly will have a better health condition



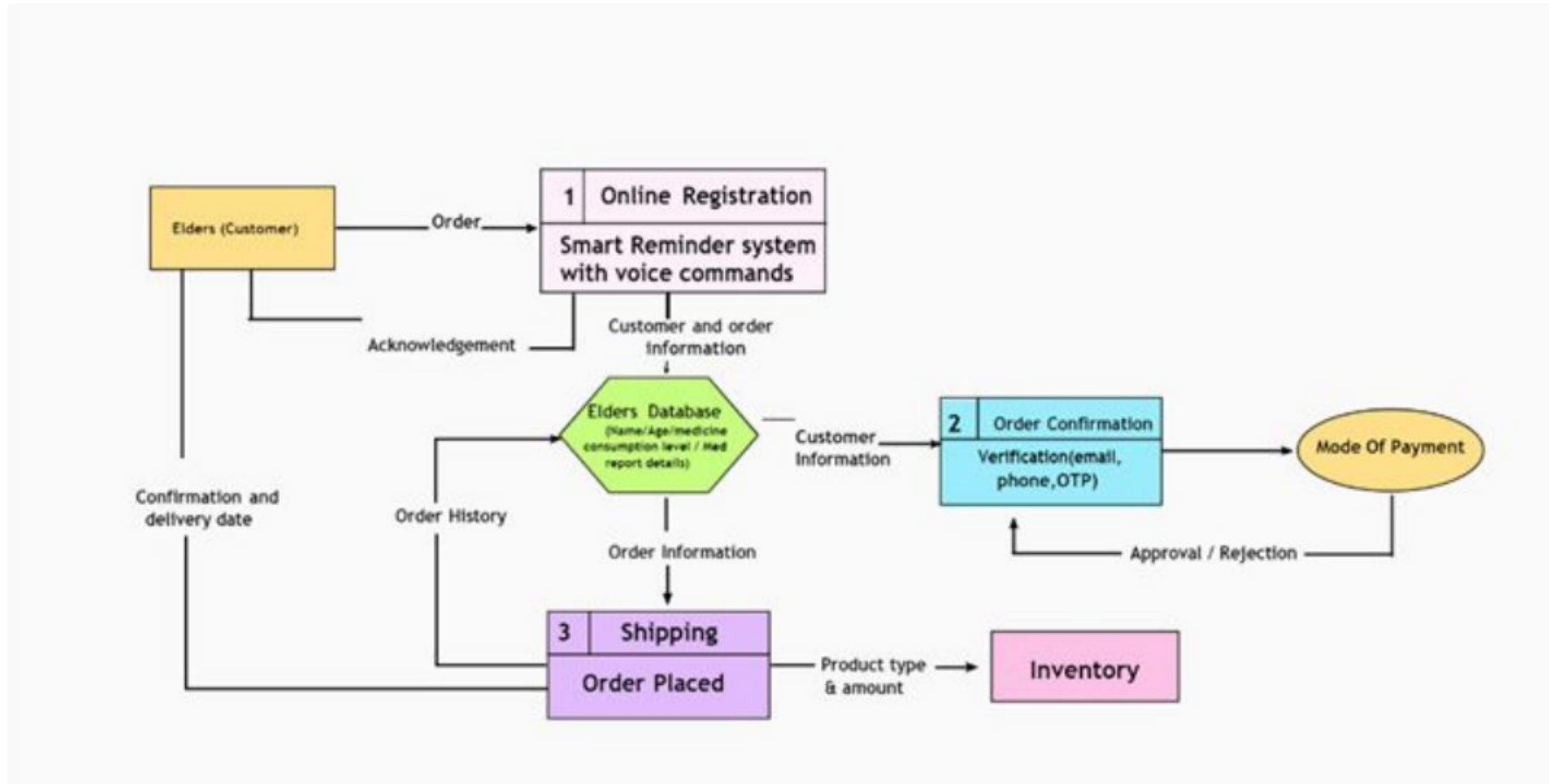
**Project Design Phase-II**  
**Solution Requirements (Functional & Non-functional)**

Date	03 October 2022
Team ID	PNT2022TMID11112
Project Name	Project - Personal Assistance for seniors who are Self reliant
Maximum Marks	4 Marks

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

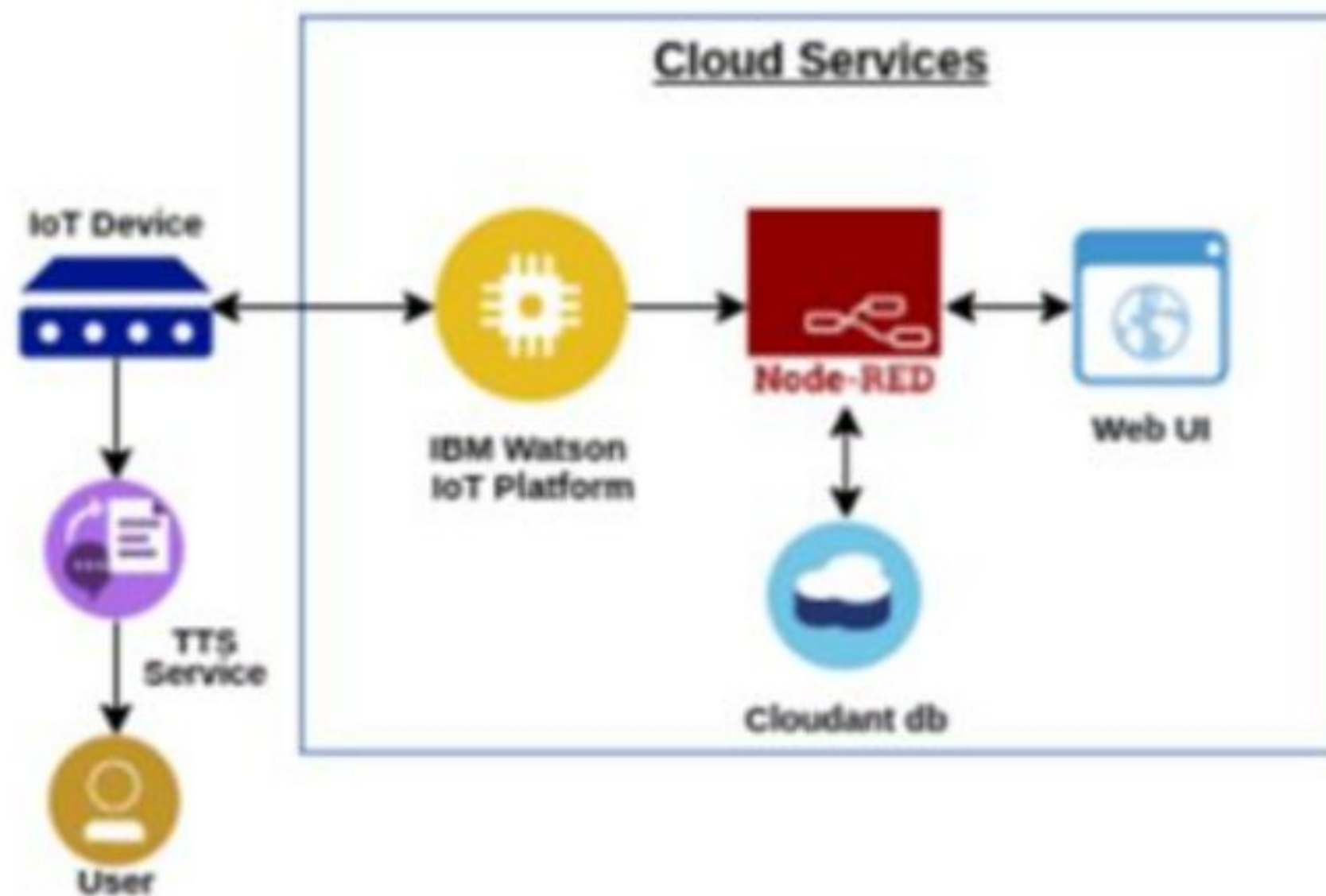
FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Requirements	Reminder system Voice commands Software IDLE, TTS service, IOT Watson platform
FR-2	User Registration	Manual Registration Registration through webpage Registration through Form Registration through Gmail
FR-3	User Confirmation	Confirmation via Phone Confirmation via Email Confirmation via OTP
FR-4	Payment Options	Cash on Delivery Net Banking/UPI Credit/Debit/ATM Card
FR-5	Product Delivery and Installation	Door Step delivery Take away Free Installation and 1 year Warranty
FR-6	Product Feedback	Through Webpage Through Phone calls Through Google forms







Medicine / Supplements



Elders



## PNT2022TMID11112 - PERSONAL ASSISTANCE FOR SENIORS WHO ARE SELF RELIANT

### PROJECT PLANNING PHASE

#### PROJECT MILESTONE

Date	21 October 2022
Team ID	PNT2022TMID11112
Project Name	Personal Assistance for Seniors who Are Self-Reliant
Maximum Marks	4 marks

S.NO	ACTIVITY TITLE	ACTIVITY DESCRIPTION	DURATION
1	Understanding the project requirement	Assign the team members and create repository in the Github, Assign the task to each members and teach how to use and open and class the Github and IBM career education	1 WEEK
2	Starting of project	Advice students to attend classes of IBM portal create and develop an rough diagram based on project description and gather of information on IOT and IBM project and team leader assign task to each member of the project	1 WEEK
3	Attend class	Team members and team lead must watch and learn from classes provided by IBM and NALAYATHIRAN and must gain	4 WEEK

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		access of MIT license for their project	
4	Budget and scope of project	Budget and analyze the use of IOT in the project and discuss with team for budget prediction to predict the favorability for the customer to buy	1 WEEK

# PNT2022TMID11112 - PERSONAL ASSISTANCE FOR SENIORS WHO ARE SELF RELIANT

## Project Planning Phase Sprint Delivery Plan

Date	21 October 2022
Team ID	PNT2022TMID11112
Project Name	Personal Assistance for Seniors who Are Self-Reliant
Maximum Marks	8 Marks

### Product Backlog, Sprint Schedule, and Estimation (4 Marks)

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	US#-1	As a user, I must be able to login to the IBM Platform	2	High	Theepura Sundhar K Sitalatha R
Sprint-2	Creation of IBM services like No-dep-SD, cloudant DB, TTS Service and design for IoT System	US#-2	As a user, I must be able to update the	2	High	Sathana R Shraka S
Sprint-3	Software Implementation	US#-3	As a user, I must push the details to the IoT device	2	High	Shraka S Sitalatha R
Sprint-4	Final demonstration and user testing. Generating voice commands using IBM Text to speech service	US#-4	As a user, I can log into the application by entering email & password	2	High	Sathana R Theepura Sundhar K

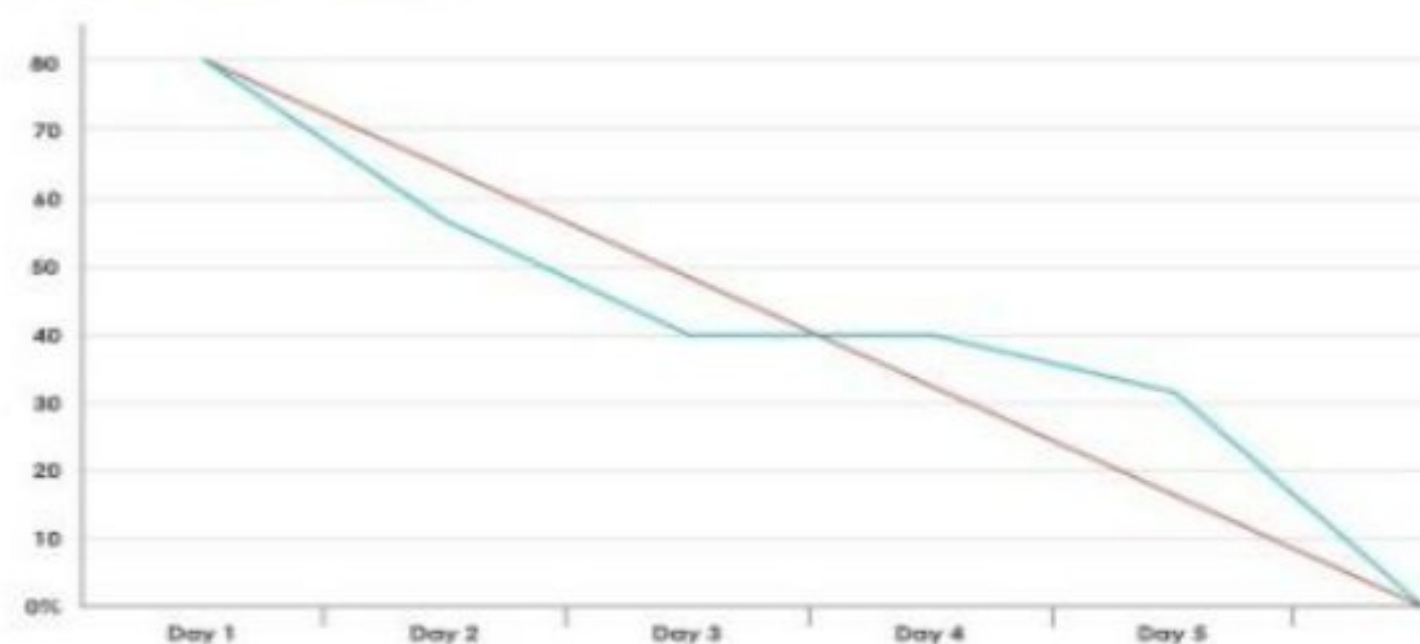
### Project Tracker, Velocity & Burndown Chart: (4 Marks)

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	06 Nov 2022	30	30 Oct 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	48	06 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	50	07 Nov 2022

### Velocity:

$$AV = \frac{\text{sprint duration}}{\text{velocity}} = \frac{20}{10} = 2$$

### Burndown Chart:



**PROJECT DEVELOPMENT PHASE**

**DELIVERY OF SPRINT 1**

Team ID	PNT2022TMID11112
Project Name	Personal Assistance for senior citizens who are self-reliant
Team members	Thirupura Sundhari.K Srilalitha.R Sathana.R Sneha.S

**SPRINT 1: REGISTRATION INTO THE IBM CLOUD SERVICES**

**Outline of Sprint 1**

This sprint delivery document contains the following,

- 1) Evidence of creating an account in IBM cloud (IBM IoT Watson platform)
- 2) Creation of NodeRED service
- 3) Creation of Cloudant DB
- 4) Creation of Text to Speech service.



**PROJECT**  
**DEVELOPMENT PHASE**  
**DELIVERY OF SPRINT 2**

Team ID	PNT2022TMID11112
Project Name	Project – Personal Assistance for senior citizens whoare self-reliant
Team members	Thirupura Sundhari K Srilalitha R Sathana R Sneka S

**SPRINT II: Development of Web User Interface in NodeRED service of IBM**

**Outline of Sprint 2**

This sprint delivery document contains the following,

- 1)To create a form dashboard to enter the medicine details.
- 2)To send the medicine name at the right time to the IoT device.
- 3)Total node flow of the entire Web UI.
- 4)The results of the web UI after deploying.

**PROJECT**  
**DEVELOPMENT PHASE**  
**DELIVERY OF SPRINT 3**

Team ID	PNT2022TMID11112
Project Name	Personal Assistance for senior citizens who are self-reliant
Team members	Thirupura Sundhari K Srilalitha R Sathana R Sneka S

**SPRINT III: Development of Python code (Software implementation)**

**Outline of Sprint 3**

This sprint delivery document contains the following,

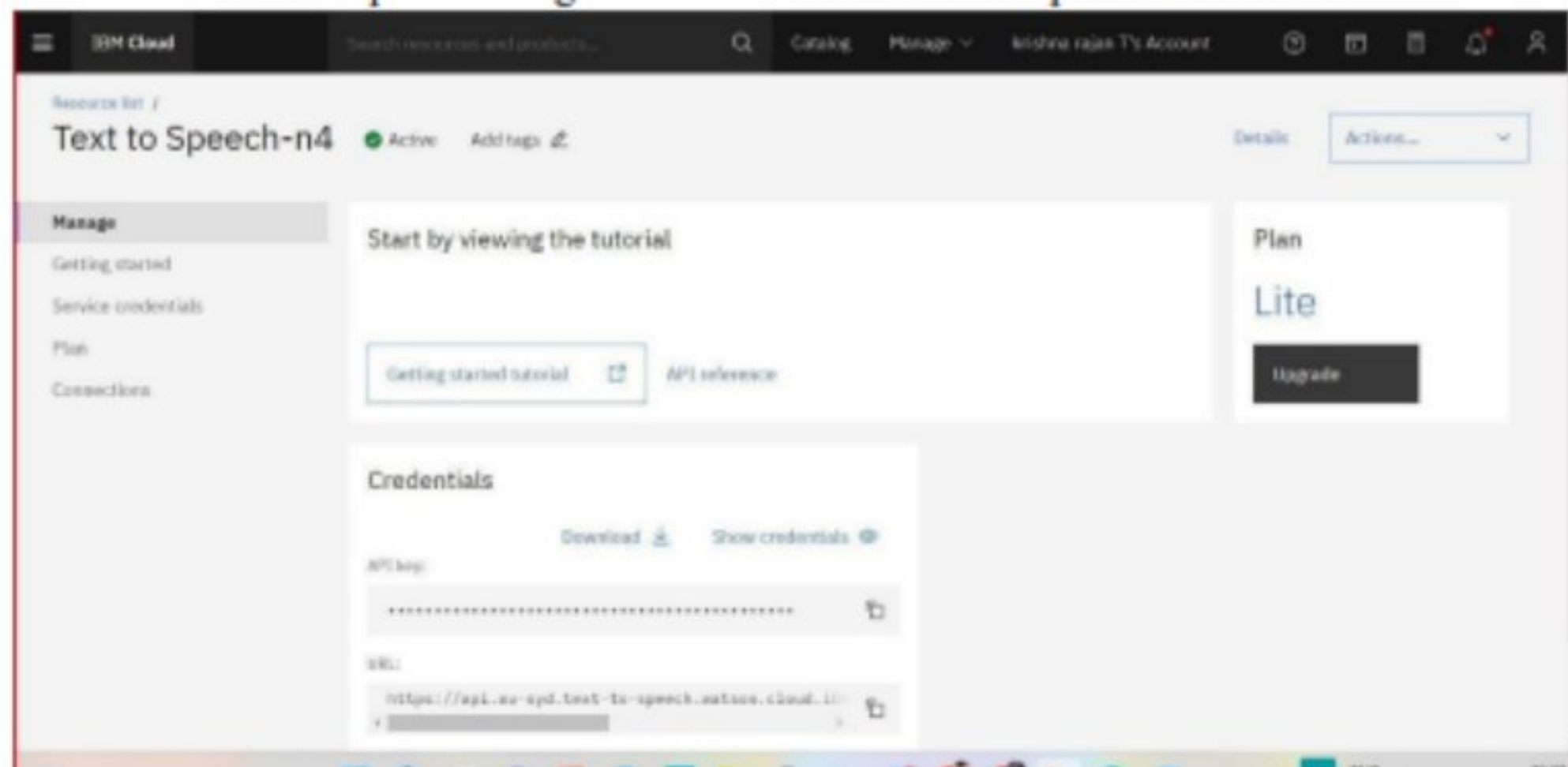
- 1) Python code to receive data from node red and send to IoT Watson platform
- 2) Updating of nodes in the node-red platform
- 3) The results of the web UI after deploying.



**PROJECT DEVELOPMENT PHASE  
SPRINT- 4**

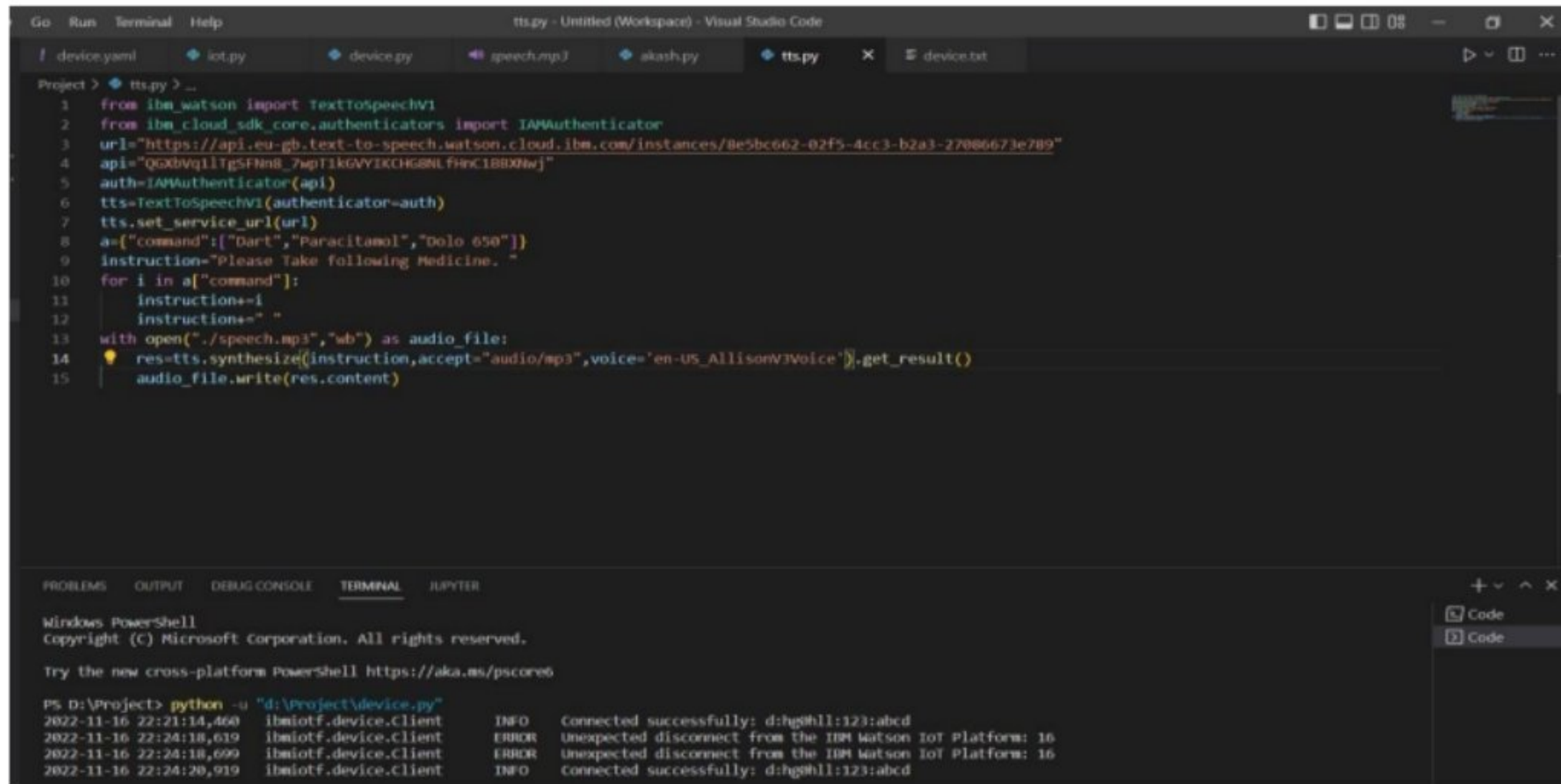
Team ID	PNT2022TMID11112
Project Name	Personal Assistance for Seniors Who Are Self-Reliant.
Team Members	Thirupura Sundhari.K Srilalitha.R Sathana.R Sneka.S

1. Create Text to speech using the IBM Watson Text to Speech credential:



## PNT2022TMID11112 - PERSONAL ASSISTANCE FOR SENIORS WHO ARE SELF RELIANT

Code:



```
Go Run Terminal Help
tts.py - Untitled (Workspace) - Visual Studio Code

device.yaml  .iot.py  .device.py  .speech.mp3  .akash.py  tts.py  .device.txt

Project > tts.py > ...
1 from ibm_watson import TextToSpeechV1
2 from ibm_cloud_sdk_core.authenticators import IAMAuthenticator
3 url="https://api.eu-gb.text-to-speech.watson.cloud.ibm.com/instances/8e5bc662-02f5-4cc3-b2a3-27086673e789"
4 api="QGXBVq11tG5Fnm8_7wpt1kGVYIKCHG8NLfHnC1B8X0Wj"
5 auth=IAMAuthenticator(api)
6 tts=TextToSpeechV1(authenticator=auth)
7 tts.set_service_url(url)
8 a=["command":["Dart","Paracetamol","Dolo 650"]]
9 instruction="Please Take following Medicine. "
10 for i in a["command"]:
11     instruction+=i
12     instruction+=" "
13 with open("./speech.mp3","wb") as audio_file:
14     res=tts.synthesize(instruction,accept="audio/mp3",voice='en-US_AllisonV3Voice').get_result()
15     audio_file.write(res.content)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL JUPYTER

Windows PowerShell  
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/powershell>

```
PS D:\Project> python -u "d:\Project\device.py"
2022-11-16 22:21:14,460 ibmiotf.device.Client INFO Connected successfully: d:hg8hll:123:abcd
2022-11-16 22:24:18,619 ibmiotf.device.Client ERROR Unexpected disconnect from the IBM Watson IoT Platform: 16
2022-11-16 22:24:18,699 ibmiotf.device.Client ERROR Unexpected disconnect from the IBM Watson IoT Platform: 16
2022-11-16 22:24:20,919 ibmiotf.device.Client INFO Connected successfully: d:hg8hll:123:abcd
```