

# **AI BASED DISCOURSE FOR BANKING INDUSTRY**

**PNT2022TMID12391**

## **TEAM MEMBERS:**

1. B.NAGA SAPTA AAKASH
2. RAHUL VISWANATH .V
3. GOWRI SUPRAMANIAN .A
4. ATHI NARAYANA KESAVAN .B

## **Project Report Format**

### **1. INTRODUCTION**

1. Project Overview
2. Purpose

### **2. LITERATURE SURVEY**

1. Existing problem
2. References
3. Problem Statement Definition

### **3. IDEATION & PROPOSED SOLUTION**

1. Empathy Map Canvas
2. Ideation & Brainstorming
3. Proposed Solution
4. Problem Solution fit

### **4. REQUIREMENT ANALYSIS**

1. Functional requirement
2. Non-Functional requirements

### **5. PROJECT DESIGN**

1. Data Flow Diagrams
2. Solution & Technical Architecture
3. User Stories

### **6. PROJECT PLANNING & SCHEDULING**

1. Sprint Planning & Estimation
2. Sprint Delivery Schedule
3. Reports from JIRA

### **7. CODING & SOLUTIONING (Explain the features added in the project along with code)**

1. Feature 1
2. Feature 2
3. Database Schema (if Applicable)

### **8. TESTING**

1. Test Cases
2. User Acceptance Testing

### **9. RESULTS**

1. Performance Metrics

### **10. ADVANTAGES & DISADVANTAGES**

### **11. CONCLUSION**

### **12. FUTURE SCOPE**

### **13. APPENDIX**

# INTRODUCTION:

## 1. Project Overview

- However, they also help the staff and prevent stressful situations that arise from Direct communication with clients.
- The core purpose of banking Chatbots is to provide the customers with prompt service and to improve the operational efficiency of the bank and its employees.
- Besides, Conversational AI in banking also assists the staff to distribute their workload.
- Chatbots allow businesses to connect with customers in a personal way without the expense of human representatives.
- For example, many of the questions or issues customers have been common and easily answered. That's why companies create FAQs and trouble shooting guides.
- Banking chatbots have huge potential in customer engagement.
- It gives customers 24/7 access to support and banks can make great use of Conversational AI and improve customer engagement to enhance the experience and improve retention

## 2. Purpose

- Chatbots are mainly used to provide customer support.
- It helps in catering a huge amount of target audience at the same time 24/7
- Can Schedule meetings, Broadcast newsletters, auto-sequences
- [Acquire leads from Comments](#)
- Create conversational forms and saving all the data on spreadsheets
- Chatbots are very intelligent. You train them once and they will communicate with your target audience in their language.  
Multilingual chatbots have saved you from investing much on hiring different languages resources.
- If you are a company that's functional all around the world, you get hands-on [chatbot](#) asap! Because, while you are asleep, your bot can entertain your customers anywhere in the world.

## **2.LITERATURE SURVEY**

### **Customer service/engagement (Chatbot)-**

Chatbots deliver a very high ROI in cost savings, making them one of the most commonly used applications of AI across industries. Chatbots can effectively tackle most commonly accessed tasks, such as balance inquiry, accessing mini statements, fund transfers, etc. This helps reduce the load from other channels such as contact centres, internet banking, etc.

### **Robo Advice-**

Automated advice is one of the most controversial topics in the financial services space. A robo-advisor attempts to understand a customer's financial health by analyzing data shared by them, as well as their financial history. Based on this analysis and goals set by the client, the robo-advisor will be able to give appropriate

### **General Purpose / Predictive Analytics-**

One of AI's most common use cases includes general-purpose semantic and natural language applications and broadly applied predictive analytics. AI can detect specific patterns and correlations in the data, which legacy technology could not previously detect. These patterns could indicate untapped sales opportunities, cross-sell opportunities, or even metrics around operational data, leading to a direct revenue impact.

### **Cybersecurity-**

AI can significantly improve the effectiveness of cybersecurity systems by leveraging data from previous threats and learning the patterns and indicators that might seem unrelated to predict and prevent attacks. In addition to preventing external threats, AI can also monitor internal threats or breaches and suggest corrective actions, resulting in the prevention of data theft or abuse

### **Credit Scoring / Direct Lending-**

AI is instrumental in helping alternate lenders determine the creditworthiness of clients by analyzing data from a wide range of traditional and non-traditional data sources. This helps lenders develop innovative lending systems backed by a robust credit scoring model, even for those individuals or entities with limited credit history. Notable companies include Affirm and GiniMachine. [3]

### **Personalized Customer Service-**

Banks are using AI to increase client satisfaction, improve efficiency and maintain customer loyalty in many ways. With AI in finance, it's possible to create intelligent products that can learn from the customer's financial data and determine what's working for them and what's not, and help them track their financial activities better.

### **Handle Risk Management-**

While extending loans is a complex and critical process, it requires both accuracy and confidentiality. AI can combine & analyse the data related to the latest transactions, market trends, and the most recent financial activities to identify the potential risks in giving the loan. Banks can also get an idea of the client's behaviour with AI-based risk assessment process. AI can minimize the probability of error in identifying even the slightest probability of fraud.

### **Compliance & Fraud Detection-**

With AI, it is possible to simulate umpteen situations where a fraud or cybercrime may occur. It follows a proactive approach to making the financial services' environment safe and breach-proof. AI is helping the field of finance to innovate freely by securing its products and services through a continuous understanding of human psychology. Besides, AI in finance also helps to keep a strict regulatory oversight. AI ensures that all policies, regulations, and security measures are being sincerely followed while designing and delivering any financial service.

### **AML Pattern Detection-**

In most cases, money launderers hide their actions through a series of steps that make it look like money that came from illegal or unethical sources are earned legitimately. Most of the major banks across the globe are shifting from rule based software systems to artificial intelligence based systems which are more robust and intelligent to the anti-money laundering patterns. Over the coming years, these systems are only set to become more and more accurate and fast with the continuous innovations and improvements in the field of artificial intelligence.

### **Process Automation-**

Process automation is one of the key drivers of automation in financial institutions. It's also evolving into cognitive process automation, where AI systems are able to perform more complex automation. AI in finance implies thorough research, understanding, and learning over long periods of time and vast volumes of data.

### **Cost Reduction-**

AI in finance has automated processes and drastically reduced the cost of serving customers. While AI has, on one hand, reduced the cost of financial services, on the other, it has made financing extremely convenient to avail.

### **Voice Assisted Banking-**

This technology empowers customers to use banking services with voice commands rather than a touch screen. The natural language technology can process queries to answer questions, find information, and connect users with various banking services.

### **Algorithmic Trading –**

Plenty of Hedge funds across the globe are using high end systems to deploy artificial intelligence models which learn by taking input from several sources of variation in financial markets and sentiments about the entity to make investment decisions on the fly. Reports claim that more than 70% of the trading today is actually carried out by automated artificial intelligence systems. Most of these hedge funds follow different strategies for making high frequency trades (HFTs) as soon as they identify a trading opportunity based on the inputs.

### **Predictive Analytics and wealth management for clients-**

Many consumers want some help when it comes to personal finance advice. Consumers want to be warned and reminded of important information about their own financial data, not told about issues after the fact. AI engines can provide insights on how to best service their high-net-worth clients. By automating large parts of the wealth management process, they would be able to offer personalized, tax-optimized investments to clients, who have far less in investable assets than what would usually qualify for professional wealth management.[4]

## **2.1 Existing problem:**

Banks will enable much and reliable services which will gain customer loyalty

## 2.2 References:

[1].web:<https://www.online-sciences.com/robotics/artificial-intelligence-in-transportation-advantagesdisadvantages-applications/>

[2].Web: <https://ibsintelligence.com/ibsi-news/5-applications-of-artificial-intelligence-in-banking/>

[3].Web:<https://www2.deloitte.com/content/dam/Deloitte/us/Documents/process-and-operations/us-aitransforming-future-of-banking.pdf>

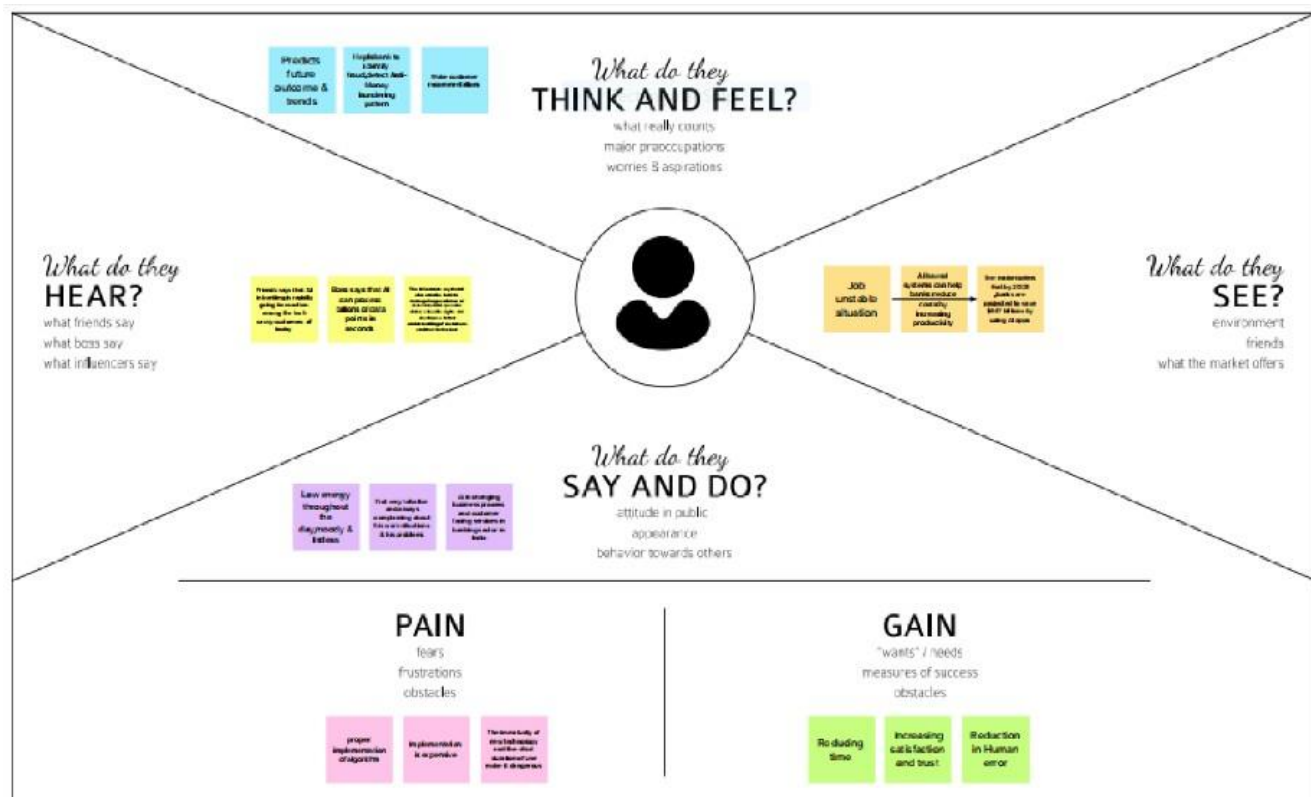
[4].Web:[https://www.researchgate.net/publication/360782923\\_A\\_STUDY\\_OF\\_APPLICATIONS\\_OF\\_ARTIFICIAL\\_INTELLIGENCE\\_IN\\_BANKING\\_AND\\_FINANCE\\_SECTOR](https://www.researchgate.net/publication/360782923_A_STUDY_OF_APPLICATIONS_OF_ARTIFICIAL_INTELLIGENCE_IN_BANKING_AND_FINANCE_SECTOR)

## 2.3 Problem Statement Definition:

Currently, most banks offer a wide variety of products and services – credit cards, savings accounts, debit cards, financial planning, personal loans, mortgages, etc. Yet many customers are not always aware of all the products offered by the financial company they're doing business with.

## 3. IDEATION & PROPOSED SOLUTION

### 3.1 Empathy Map Canvas



## 3.2 Ideation & Brainstorming

### Step-2: Brainstorm, Idea Listing and Grouping

#### 2 Brainstorm

##### Naga Sapta Aakash B

Detailed information will be provided for Customer Queries	Easy to Create a Bank Account with simple steps	Track Transaction History
Chatbot keep information end to end encryption	Net Banking is easily done using Chatbot	If the Transaction status is "Pending / Refund" chatbot helps to guide the situation
Chatbot also help to guide the Investment Process	Loan details and due status will share according to the end month date	Business Account Management

##### Athi Narayana kesavan B

Easy to use FAQ	Secure Communication	Customer Acquisition
Quicker help across the platform	User Behavioural Analytics	Financial planner
Improved efficiency	Automated customer support	Smart Payment processing

##### Gowri Supramanian A

24x365 days	Cost efficient	Easy to solve the queries
Queries can be solve anywhere anytime	Better data security	Easy to track customer details
Can handle multiple customer at a time	Automated customer service	Secure communication

##### Rahul Vishwanath

Provide security and fraud alerts	Provides complete guidance in assisting a new customer	Keep record of each customer
Loan Management	Guide us about credit card plan and policies	Able to guide customers with new queries and provide voice assistant feature
Able to handle multi-language queries	Financial advisory to keep customer finances on track	eKYC initiation



## Brainstorm & idea prioritization

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

- 1. Set the agenda
- 2. Share the agenda
- 3. Assign roles and responsibilities

1

### Brainstorming session

1. Set the agenda  
2. Share the agenda  
3. Assign roles and responsibilities

1. Set the agenda

2

2. Share the agenda  
3. Assign roles and responsibilities

3

3. Assign roles and responsibilities

4

4. Review the agenda  
5. Review the agenda

Review the agenda

1

### Define your problem statement

1. Set the agenda  
2. Share the agenda  
3. Assign roles and responsibilities

1. Set the agenda



### Key values of the solution being

1. Set the agenda  
2. Share the agenda  
3. Assign roles and responsibilities

- 1. Set the agenda
- 2. Share the agenda
- 3. Assign roles and responsibilities
- 4. Review the agenda
- 5. Review the agenda

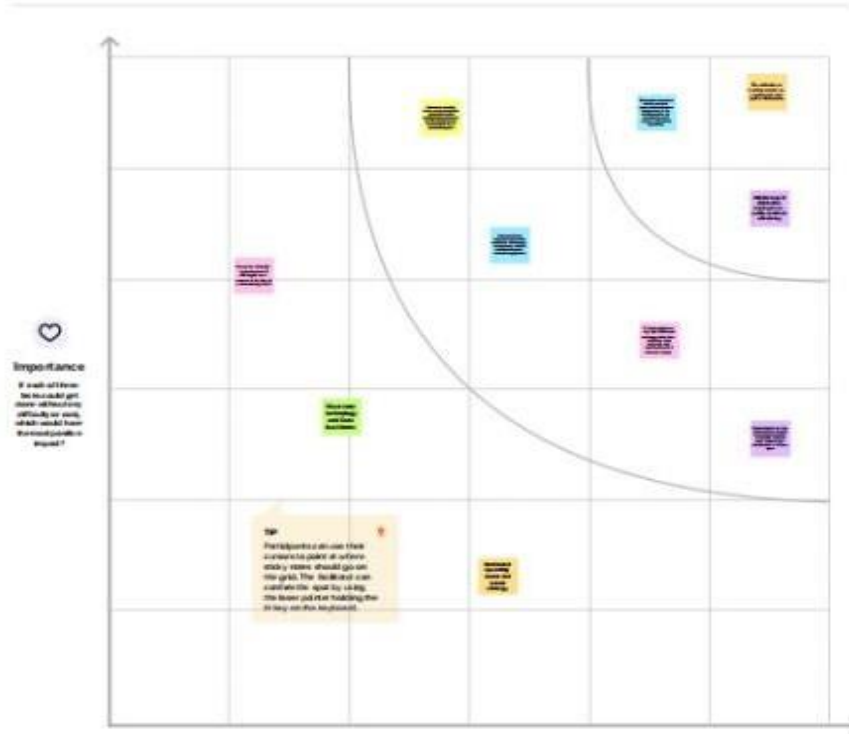




## Prioritize

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



### 3.3 Proposed Solution

S.NO	Parameter	Description
01	Problem Statement (Problem to be solved)	<b>Statement</b> -The handwritten digit recognition is the capability of computer applications to recognize the human handwritten digits. <b>Description:</b> It is a hard task for the machine because handwritten digits are not perfect and can be made with many different shapes and sizes.
02	Idea / Solution description	1. It is the capability of a computer to fetch the mortal handwritten integers from different sources like images, papers, touch defences. 2. It allows user to translate all those signature and notes into electronic words in a text document format and this data only requires far less physical space than the storage of the physical copies.
03	Novelty / Uniqueness	Accurately recognize the digits rather than recognizing all the characters like OCR.
04	Social Impact / Customer Satisfaction	1. Artificial Intelligence developed the app called Handwritten digit Recognizer. 2. It converts the written word into digital approximations and utilizes complex algorithms to identify characters before churning out a digital approximation
05	Business Model (Revenue Model)	• This system can be integrated with traffic surveillance cameras to recognize the vehicle's number plates for effective traffic management. • Can be integrated with Postal system to identify and recognize the pin-code details easily
06	Scalability of the Solution	• Ability to recognise digits in more noisy environments. • There is no limit in the number of digits it can be recognized.

## 3.4 Problem Solution fit

### Project DesignPhase-I-SolutionFit

Project Title: AI Based Discourse For Banking Industry

TeamID: PNT2022TMID41030

Define CS, refine CC	<b>1. CUSTOMER SEGMENT(S)</b> <span>CS</span> <ul style="list-style-type: none"> <li>Discover critical data points for customer segmentation</li> <li>Profile new customers into user specific segmentation</li> <li>Real time monitoring and reallocation of segments</li> <li>Support constant learning about each customer</li> </ul>	<b>2. CUSTOMER CONSTRAINTS</b> <span>CC</span> <ul style="list-style-type: none"> <li>The value of <u>reimagined</u> customer engagement</li> <li>Rising customer expectation</li> <li><u>Disintermediation</u></li> <li>Increasing human-like formats</li> </ul>	<b>3. AVAILABLE SOLUTIONS</b> <span>AS</span> <ul style="list-style-type: none"> <li>Use machine <u>learning</u> to achieve robotic process automation</li> <li>Augment human analytical competencies by leveraging machine learning</li> <li>Use data <u>analytics</u> to make smart and timely decisions</li> </ul>	Explore AS, differentiate
Focus on J&P, tap into BE, understand RC	<b>4. JOBS-TO-BE-DONE/PROBLEMS</b> <span>J&amp;P</span> <ul style="list-style-type: none"> <li>High error rates</li> <li>Hard to access</li> <li>Hard to integrate with external sources</li> </ul>	<b>5. PROBLEM ROOT CAUSE</b> <span>RC</span> <ul style="list-style-type: none"> <li>Security and compliance</li> <li>Localization</li> <li>Transparency, <u>Explainability</u></li> <li><u>Siloed</u> data</li> </ul>	<b>6. BEHAVIOUR</b> <span>BE</span> <ul style="list-style-type: none"> <li>Reduced costs of <u>acquisition</u></li> <li>Lower costs to serve</li> <li>Lower risk</li> </ul>	Focus on J&P, tap into BE, understand RC
Entity is strong TR & EM	<b>7. TRIGGERS</b> <span>TR</span> <ul style="list-style-type: none"> <li>Triggers can be pieces of information which users create through their everyday actions that indicate they are either a potential customer/prospect or otherwise</li> <li>A user transacts on a bank's ATM</li> </ul>	<b>9. YOUR SOLUTION</b> <span>SOLN</span> <ul style="list-style-type: none"> <li>Establish one master version for each customer</li> <li>Predict next best action for each customer</li> <li>Profile new customer as soon as they sign up</li> <li>Achieve smarter cross sell and up sell of products</li> </ul>	<b>10. CHANNELS of BEHAVIOUR</b> <span>CE</span> <ol style="list-style-type: none"> <li><b>ONLINE</b> <ul style="list-style-type: none"> <li>Blending high tech and high touch banking experience</li> <li>Security and Privacy</li> </ul> </li> <li><b>OFFLINE</b> <ul style="list-style-type: none"> <li>No Immediate response, as there is a direct interaction.</li> <li>Taking time to</li> </ul> </li> </ol>	Extract Online and Offline Chat BE
	<b>8. EMOTIONS: BEFORE/AFTER</b> <span>EM</span> <ul style="list-style-type: none"> <li>Before: Risk for storing data</li> <li>After: Easy to manage</li> </ul>			

## 4. REQUIREMENT ANALYSIS

### 4.1 Functional requirement

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail Registration through LinkedIn
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Complex dialogue	The best chatbots have advanced conversation features and can proactively search for information and ask clarifying questions even if the conversation is not linear.
FR-4	Flexible data connections	The chatbot can capture, read and process large amounts of data to gain insights from relevant data and to quickly solve customer problems.
FR-5	Multi-channel capabilit	<p>For a seamless experience, it is also useful if data and context can be stored over several channels. If a customer shares his order, email address or other information with the bot, it can use this input for further actions on other channels.</p> <p>Moreover, it should be possible to pass on all to a live agent if necessary.</p>
FR-6	Fast Onboarding	<p>Even if chatbots often build on multi-layered and technologically complex software, this does not mean that getting started should be an equally complex process. It's definitely an advantage if a chatbot can be launched quickly.</p> <p>"Plug &amp; Talk" solutions that make a chatbot ready to go in 2-4 weeks are therefore very beneficial for companies.</p>
FR-7	Easy handling	<p>Well-designed user interfaces and experiences (UI / UX), both on the company and customer side, are essential.</p> <p>In addition, the chatbot software has to be able to handle the huge amount of data without any problems and GDPR settings have to be taken into account.</p> <p>Being able to manage and handle a chatbot and its content easily can make all the difference!</p>
FR-8	Ongoing optimization	<p>Every single customer interaction represents a way of learning for artificial intelligence (AI).</p> <p>Therefore, a chatbot software should continuously expand its own knowledge base by analyzing conversations.</p>
FR-9	Analytics & reporting	Choose a chatbot provider that provides in-depth Chatbot analytics and analysis of customer information, responses and requests, and gives you the information you need to tailor your products and services to your customers' expectations

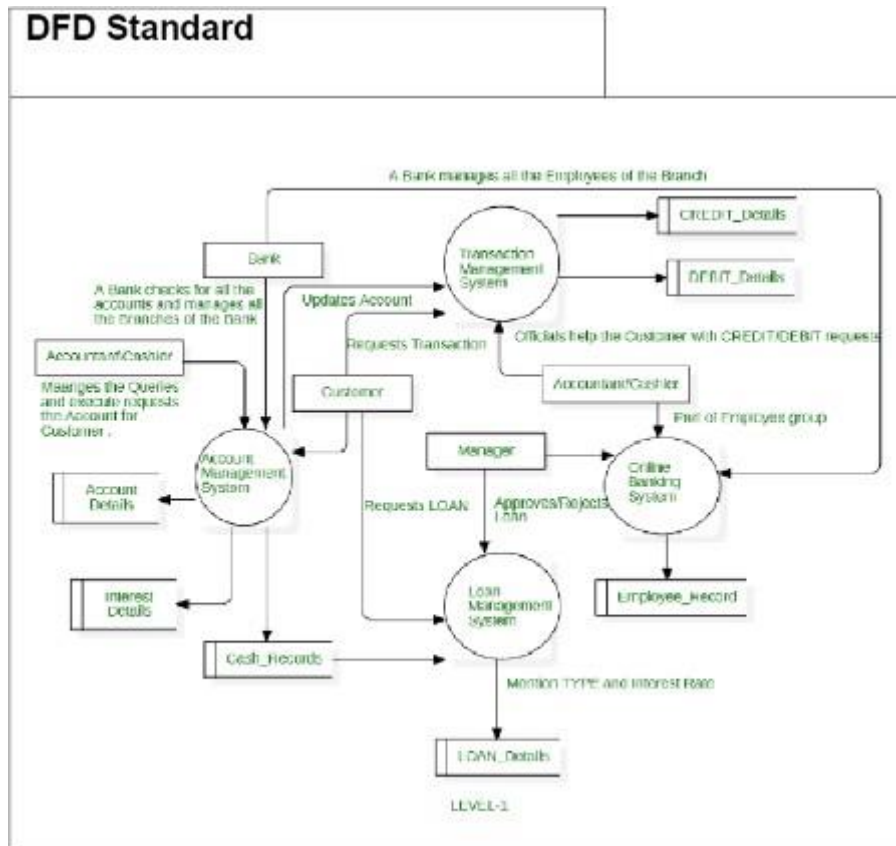
## 4.2 Non-Functional requirements

S.NO	Non-Functional Requirement	Description
NFR-1	Usability	It doesn't specify parts of the system functionality, only how that functionality is to be perceived by the user, for instance how easy it must be to learn and how efficient it must be for carrying out user tasks.
NFR-2	Security	A set of specifications that describe the system's operation capabilities and constraints and attempt to improve its functionality.
NFR-3	Reliability	The extent to which the software system consistently performs the specified functions without failure.
NFR-4	Performance	<p>Performance defines how fast a software system or a particular piece of it responds to certain users' actions under a certain workload.</p> <p>In most cases, this metric explains how long a user must wait before the target operation happens (the page renders, a transaction is processed, etc.) given the overall number of users at the moment.</p> <p>But it's not always like that. Performance requirements may describe background processes invisible to users, e.g. backup. But let's focus on usercentric performance.</p>
NFR-5	Availability	Dynamically available and accessible in smart devices.
NFR-6	Scalability	<p>Scalability assesses the highest workloads under which the system will still meet the performance requirements.</p> <p>There are two ways to enable your system scale as the workloads get higher: horizontal and vertical scaling.</p>

## 5. PROJECT DESIGN

### 5.1 Data Flow Diagrams





## 5.2 Solution & Technical Architecture:



**Table-1: Components & Technologies:**

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript, Bootstrap
2.	Application Logic-1	Logic for a process in the application	Python
3.	Application Logic-2	Logic for a process in the application	IBM Watson STT service
4.	Application Logic-3	Logic for a process in the application	IBM Watson Assistant
5.	Database	Data Type, Configurations etc.	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	Purpose of External API used in the application	IBM Weather API, etc.
9.	External API-2	Purpose of External API used in the application	Aadhar API, etc.
10.	Machine Learning Model	Purpose of Machine Learning Model	Object Recognition Model, etc.
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry, Kubernetes, etc.

**Table-2: Application Characteristics:**

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Anaconda Navigator, Keras, Tensor flow, Flask
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	Response time, Throughput, CPU and network usages, etc.
4.	Availability	Justify the availability of application (e.g. use of load balancers, distributed servers etc.)	All kind of users.
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	Watson Assistant is used to build the chatbot.

## 5.3 User Stories

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

Use the below template to create product backlog and sprint schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Create IBM Watson Assistant Service	USN-1	As a user, I can see a Watson Assistant.	8	High	All Member
Sprint-1	Chatbot Skills Creation	USN-2	As a user, I will see the Chatbot having banking-related skills	7	Medium	All Member
Sprint-1	Creating Saving Account Action	USN-3	As a user, I can converse with the chatbot regarding saving account-related queries and Action.	5	High	All Member
Sprint-2	Creating Current Account Action	USN-4	As a user, I can converse with the chatbot regarding current account-related queries and Action.	8	Medium	All Member
Sprint-2	Creating Loan Account Action	USN-5	As a user, I can converse with the chatbot regarding loan account-related queries and Action.	12	High	All Member



Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-3	Creating General Query Action	USN-6	As a user, I can converse with the chatbot regarding general queries and Action.	9	High	All Member
Sprint-3	Creating Net Banking Action	USN-7	As a user, I can converse with the chatbot regarding net banking-related queries and Action.	6	Medium	All Member
Sprint-3	Creating Assistant & Integrate With Flask Web Page Build Python Code	USN-8	As a user, I can see a flask web page for banking chatbot.	5	High	All Member
Sprint-4	Creating Assistant & Integrate With Flask Web Page Build Python Code	USN-9	As a user, I can web pages integrated with a chatbot.	5	High	All Member
Sprint-4	Run The Application	USN-10	As a user, I can communicate with the chatbot 24*7 and easy to access.	15	Medium	All Member

## 6. PROJECT PLANNING & SCHEDULING:

### 6.1 Sprint Planning & Estimation

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

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date(Planned)	Story Points Completed (as onPlanned 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	04 Nov 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	20	11Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	20	18 Nov 2022

#### Velocity:

Imagine we have a 10-day sprint duration, and the velocity of the team is 20 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

$$AV = \text{Velocity} / \text{Sprint duration}$$

$$AV = 20/6$$

$$AV = 3.34$$



## 6.2 Sprint Delivery Schedule:

### Sprint 1

#### CREATE IBM WATSON ASSISTANT SERVICE

The screenshot displays the IBM Cloud console interface for a Watson Assistant service. The browser's address bar shows the URL: `cloud.ibm.com/services/conversation/crm%3Av1%3Abluemix%3Apublic%3Aconversation%3Aau-syd%3Aa%2F932387b2c54c45dea6baec41396c8926%3A3bd80df1-2c51-48a6-9ae2-3b3adff05...`. The IBM Cloud header includes a search bar and navigation links for Catalog, Manage, and the user profile (Naga Sapta Aakash's A...). The main content area is titled 'Watson Assistant-4e' and indicates the service is 'Active'. A left sidebar lists management options: Service credentials, Plan, and Connections. The 'Plan' section shows the current plan is 'Lite' with an 'Upgrade' button. The 'Credentials' section displays the API key (redacted) and the URL: `https://api.au-syd.assistant.watson.cloud.ibm.com/instances/3bd80df1-2c51-48a6-9ae2-3b3adff05...`. The bottom of the screen shows a Windows taskbar with various application icons and system status information (25°C, Partly cloudy, 21:42, 17-11-2022).

Resource list /

### Watson Assistant-4e

Active Add tags

Details Actions...

**Manage**

- Service credentials
- Plan
- Connections

**Start by launching the tool**

Launch Watson Assistant Getting started tutorial API reference

**Plan**

Lite Upgrade

**Credentials**

Download Show credentials

API key:

.....

URL:

`https://api.au-syd.assistant.watson.cloud.ibm.com/instances/3bd80df1-2c51-48a6-9ae2-3b3adff05...`

25°C Partly cloudy

21:42 17-11-2022

IBM Watson Assistant

Chatbot using Flask API with

us-south.assistant.watson.cloud.ibm.com/crn%3Av1%3Abluemix%3Apublic%3Aconversation%3Aus-south%3Aa%2F8dc22086a97c449db1bbf6e507ca...

GmailYouTubeMaps

IBM Watson Assistant LiteUpgrademonisha

Learning center

Home

Assistant name: monisha

Description: going to associate

Assistant language: English (US)

Task tracker

Enhance your assistant  
5 steps left 11 min  
16%

Test and refine your assistant  
3 steps left 5 min  
25%

Deploy your assistant  
2 steps left 7 min  
50%

Live assistant status

Channels

Web chat

Resolution Methods

V1 10/03/2022 10:10PM Live

Extensions

Search  
Powered by IBM Watson D...  
Extend what your assistant can answer by searching your ...  
Try Plus Plan +

View live environment

Actions

Name	Last edited	Examples Count	Status
------	-------------	----------------	--------

Type here to search

32°C02:14 PM04-11-2022

IBM Watson Assistant

Chatbot using Flask API with

us-south.assistant.watson.cloud.ibm.com/crn%3Av1%3Abluemix%3Apublic%3Aconversation%3Aus-south%3Aa%2F8dc22086a97c449db1bbf6e507ca...

GmailYouTubeMaps

IBM Watson Assistant LiteUpgrademonisha

Learning center

Actions

Actions

Created by you

Set by assistant

Variables

Created by you

Set by assistant

Set by integration

Saved responses

New action +

Name	Last edited	Examples Count	Status
hii	2 days ago	1	

Items per page: 50Showing 1–1 of 1 actions

11 of 1 pages

Preview

Type here to search

32°C

02:15 PM

04-11-2022

IBM Watson Assistant

Chatbot using Flask API with

us-south.assistant.watson.cloud.ibm.com/crn%3Av1%3Abluemix%3Apublic%3Aconversation%3Aus-south%3Aa%2F8dc22086a97c449db1bbf6e507ca...

GmailYouTubeMaps

IBM Watson Assistant LiteUpgrademonisha

Learning center

Actions

Actions

Created by you

Set by assistant

Variables

Created by you

Set by assistant

Set by integration

Saved responses

Name	Last edited	Examples Count	Status
Greet customer	2 days ago	0	✓
No action matches	18 days ago	0	✓
Fallback	18 days ago	5	✓

Preview

Type here to search

32°C

02:16 PM

04-11-2022

Greet customer

Assistant starts with step 1

Conversation steps

1welcome

Create a new...

Continue to next step

2please enter your name

Free text

Continue to next step

3please enter your email

Regex

Continue to next step

4Enter your Aadhaar Number

Number

Continue to next step

5successfully Open your Account

New step

Action starts

When your assistant is first opened or engaged with.

No training examples necessary.

Use the default greeting or customize your own.

Preview

Greet customer [default]

welcome

Create a new account

Create a new account

please enter your name

MONISHA

please enter your email

Type something...

## CHATBOT SKILL CREATION

IBM Watson Assistant Lite Upgrade Savings Learning center

No action matches

Customer starts with:  
Example: Can I have a sandwich?

5 total steps 0 end steps 0 re-ask steps

Conversation steps

1 welcome create a new Continue to next step

2 please enter your name Free text Continue to next step

New step +

Step 3 is taken without conditions

Assistant says

please enter your gmail

Assistant recognizes pattern in user's text

Edit response Edit validation

And then

Continue to next step

Preview

please enter your gmail

aakash

I'm sorry, I did not catch that, please restate your response.

aakash@gmail.com

enter your aadhar number

8099999

No action matches ended

Use the up arrow for prior messages

Steps\_to\_Create\_IB... pdf py2.ibm.png pyibm.png cssibm.png htmlibm.png IBM2.png Show all

21°C Mostly clear 23:46 19-11-2022

# CREATING SAVING ACCOUNT ACTION

The screenshot displays the IBM Watson Assistant interface for creating a saving account action. The interface is divided into several sections:

- Top Bar:** Shows the IBM Watson Assistant logo, a "Upgrade" button, and the current conversation name "Saving Account ...".
- Left Panel:** A list of steps in the conversation flow, numbered 1 through 7. Step 7 is highlighted, indicating it is the current step being edited.
- Central Workspace:** The main area for editing the assistant's response and validation. It shows the current step (Step 7) and the assistant's response "Thank you". Below the response, there are buttons for "Edit response" and "Edit validation".
- Right Panel:** A preview window showing the chat interaction. It displays the user's input "Welcome recognized" and the assistant's response "I want to transfer money". The preview also shows the user's input "how much" and the assistant's response "How much do you want to transfer".
- Bottom Bar:** A Windows taskbar at the bottom of the screen, showing the search bar, taskbar icons, and system tray information (28°C, 10:36 AM, 03-11-2022).

The conversation flow steps are as follows:

- Step 1: Welcome
- Step 2: How much do you want to transfer (3000, 40000)
- Step 3: give your name (Abinaya, Bharathi, +1)
- Step 4: Give your account number (123456789, 0987654321)
- Step 5: Give your IFSC code (333333245, 14031403)
- Step 6: Give your Bank name (Indian Bank, Kannada Bank)
- Step 7: Thank you (okk, welcome)

## SPRINT 2

## CREATING CURRENT ACCOUNT

IBM Watson Assistant Lite Upgrade I want to trans... Learning center

I want transfer the money

Conversation steps

- 1 hi NSA  
↓ Continue to next step
- 2 I WANT TO CHECK MY BALANCE  
HOW MUCH WHAT ACCO...  
↓ Continue to next step
- 3 GIVE YOUR ACCOUNT NUMBER  
Number  
↓ Continue to next step

WHAT IS YOUR NAME

New step +

Step 2 is taken without conditions

Assistant says

I WANT TO CHECK MY BALANCE

WHAT ACCOUNT HOW MUCH

Edit response Edit validation

And then

Continue to next step

Project P

- PC screen only
- Duplicate
- Extend
- Second screen only

More Display settings

Steps\_to\_Create\_IB...pdf py2.ibm.png py1bm.png cssibm.png htmlibm.png

21°C Mostly clear

00:00 20-11-2022



## CREATING LOAN ACCOUNT ACTION:

loan account action

Step 9 is taken without conditions

Assistant says

don't worry about that,we'll let you know when the loan is ready

thank you for your help.

Edit response Edit validation

And then

Preview

what is the next step sir?

don't worry about that,we'll let you know when the loan is ready

thank you for your help.

thank you for your help.

There are no additional steps for this action. Add a new step or end the action.

loan account action ended

Use the up arrow for prior messages

7fcd50d6-21e9-46....csv

Show all

Type here to search

31°C

ENG

03:41 PM

03-11-2022

## SPRINT 3

### CREATING GENERAL QUERY ACTION:

The screenshot displays the IBM Watson Assistant interface in a web browser. The browser's address bar shows the URL: `au-syd.assistant.watson.cloud.ibm.com/cm%3Av1%3Abluemix%3Apublic%3Aconversation%3Aau-syd%3Aa%2F60b082ac977846ed80c101a437a2f4a9%3A...`. The interface is titled "IBM Watson Assistant Lite" and "General Query A...".

**Customer starts with:**  
Brief me about yourself

**Conversation steps:**

- Step 1: "breif me about yourself" (Note: typo in original image). The assistant responds with "My name is b..." and "my village is ...". A "+1" button is visible. Below the response is a "Continue to next step" button.
- Step 2: "Why do you want to join the banking sector:". The assistant responds with "Avoid sharing...". Below the response is a "Continue to next step" button.
- Step 3: "What are types of accounts in banking sector". The assistant responds with "Indian Bank" and "Kannada Bank". Below the response is a "Continue to next step" button.
- Step 4: "What are the necessary documents". The assistant responds with "Aathar" and "Debit card". A "+1" button is visible. Below the response is a "Continue to next step" button.
- Step 5: "Is really helps banking industry". The assistant responds with "Confirmation". Below the response is a "Continue to next step" button.

A "New step +" button is located at the bottom of the conversation steps list.

**Step 6 is taken** without conditions. A function icon (fx) is shown.

**Assistant says**

Thank you

okkk

**And then**

Continue to next step

**Preview**

Greet customer [default]

Welcome, how can I assist you?

hi

Did you mean:

- Brief me about yourself
- Tell me brief about yourself
- None of the above

Brief me about yourself

Brief me about yourself recognized

breif me about yourself

My name is bharathi my village is sankari

I am a engineer

My name is bharathi

Use the up arrow for prior messages

# CREATING NET BANKING ACTION:

The screenshot displays the IBM Watson Assistant interface for creating a net banking action. The browser address bar shows the URL: `au-syd.assistant.watson.cloud.ibm.com/cm%3Av1%3Abluemix%3Apublic%3Aconversation%3Aau-syd%3Aa%2F60b082ac977846ed80c101a437a2f4a9%3A...`. The interface includes a top navigation bar with "IBM Watson Assistant Lite" and an "Upgrade" button. The main workspace is divided into several sections:

- Customer starts with:** A dropdown menu showing "hihi".
- Conversation steps:** A list of five steps, each with a question and a response button:
  - Step 1: "What you use in online banking to do" with buttons "Check balanc..." and "Send money ...".
  - Step 2: "What are the limitation of net banking" with buttons "No cashless ..." and "Internet requ...".
  - Step 3: "what are the major problem in online banking" with button "Security and ...".
  - Step 4: "Is really transaction is safe" with button "Confirmation".
  - Step 5: "How do you transfer money in mobile" with button "With the help...".
- Assistant says:** A text input area with a "Thank you" message and a "Full-screen ship" button.
- And then:** A dropdown menu showing "Continue to next step".
- Preview:** A window showing a simulated conversation flow with messages like "Welcome, how can I assist you?", "hihi recognized", and "What you use in online banking to do".

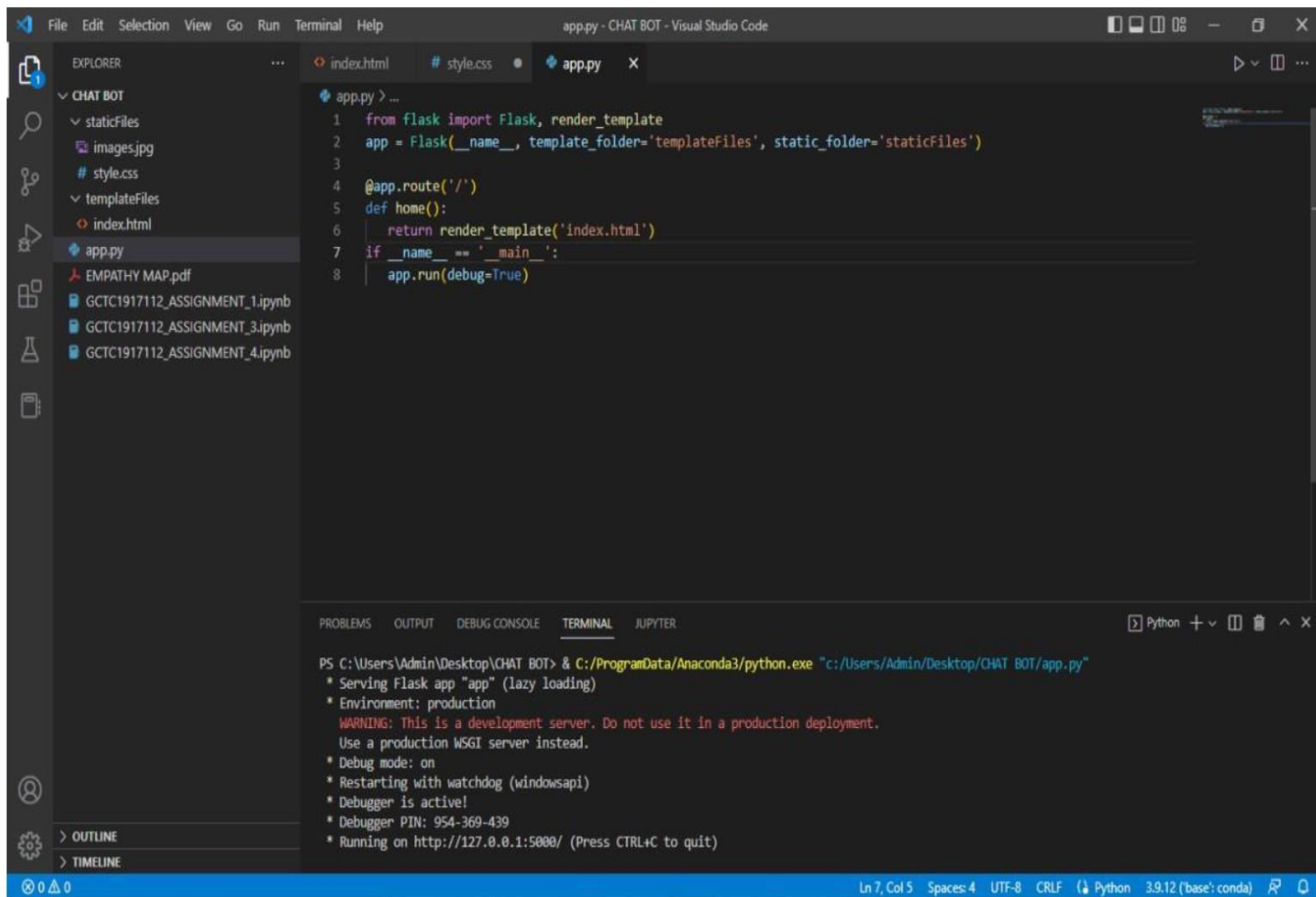
The bottom of the screen shows a Windows taskbar with a search bar, system icons, and the date/time: 03:49 PM, 03-11-2022.

## CREATING ASSISTANT & INTEGRATE WITH FLASK WEB PAGE

### BUILD PYTHON CODE:

```
from flask import Flask, render_template
app = Flask(__name__, template_folder='templateFiles', static_folder='staticFiles')

@app.route('/')
def home():
    return render_template('index.html')
if __name__ == '__main__':
    app.run(debug=True)
```

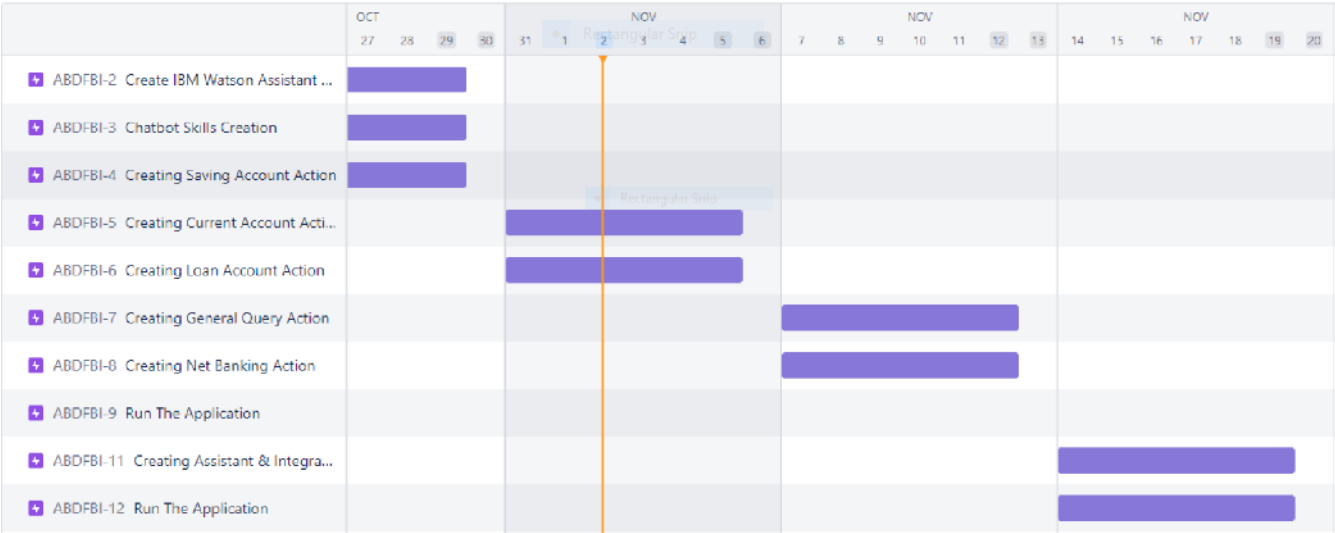


## SPRINT 4

### BUILD HTML CODE:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>CHATBOT</title>
  <link rel="stylesheet" href="\staticFiles\style.css">
</head>
<body>
  <div class="navbar">
    <ul>
      <li><a class="active" href="#home" style="font-size: 50px;">CHATBOT</a></li>
      <div class="items">
        <li style="font-family:'Times New Roman', Times, serif"><a href="#home">Home</a></li>
        <li style="font-family:'Times New Roman', Times, serif"><a href="#contact">Contact</a></li>
        <li style="font-family:'Times New Roman', Times, serif"><a href="#contact">Help</a></li>
        <li style="font-family:'Times New Roman', Times, serif"><a href="#about">About</a></li>
      </div>
    </ul>
    <div>
      <h1 class="head" style="font-family:'Times New Roman', Times, serif;">AI BASED DISCOURSE FOR
<br>BANKING <br>INDUSTRY</h1>
    </div>
  </div>
  <script>
    window.watsonAssistantChatOptions = {
      integrationID: "e5775fcd-13f7-4f60-82e2-2c8e7cb6913b", // The ID of this integration.
      region: "us-south", // The region your integration is hosted in.
      serviceInstanceID: "ea723f0a-d6a0-414a-8f2a-9ce24206b596", // The ID of your service instance.
      onLoad: function(instance) { instance.render(); }
    };
    setTimeout(function(){
      const t=document.createElement('script');
      t.src="https://web-chat.global.assistant.watson.appdomain.cloud/versions/" +
(window.watsonAssistantChatOptions.clientVersion || 'latest') + "/WatsonAssistantChatEntry.js";
      document.head.appendChild(t);
    });
  </script>
</body>
</html>
```

3. Reports



## 7. CODING & SOLUTIONING

### 1. Feature:

- Banks that offer Internet banking are open for business transactions anywhere a client might be as long as there is an internet connection, Apart from the periods of website maintenance, The services are available 24 hours a day and 365 days around the year.
- if the internet connection is unavailable, The customer services are provided round the clock via the telephone, where the actual time account balances and the information are availed, This has tens banking processes hence increasing their efficiency and effectiveness.
- Online banking allows automatic funding of accounts from long-established bank accounts via electronic funds transfers, and the client can monitor his spending via a virtual wallet through certain banks and the applications and enable the payments.
- The speed of transaction is faster relative to use of ATM's or the customary banking, Online banking allows easier updating and maintaining of direct accounts, The time for changing mailing address is greatly reduced, ordering of additional checks are availed and provision of actual time interest rates.
- It is available all the time, You can perform your tasks from anywhere and at any time, even in the night when the bank is closed or on holidays, The only thing you need to have is an active internet connection, It is fast and efficient, The funds get transferred from one account to the other very fast, and you can also manage several accounts easily through Internet banking
- Online accounts are easy to set up and require no more information than a traditional bank account, Many offer options of inputting your data online or downloading the forms and mailing them in, If you run into a problem, you have the option of calling or emailing the bank directly, One advantage of using online checks is that the payee's information is retained, which eliminates having to reenter the information on the subsequent checks to the same payee.
- You can control your transactions and the account balance all the time, This facility also keeps your account safe, You can monitor your account at any time, you can know about any fraudulent activity or threat to your account before it can pose your account to severe damage.

## 8. TESTING

### 1. TEST CASE

#### 1. Defect Analysis

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	0	0	2	1	3
Duplicate	0	0	0	0	0
External	0	0	0	0	0
Fixed	0	0	2	1	3
Not Reproduced	0	0	0	0	0
Skipped	0	0	0	0	0
Won't Fix	0	0	0	0	0
Totals		0	2	2	6

#### 2. Test Case Analysis

Section	Total Cases	Not Tested	Fail	Pass
Print Engine	0	0	0	0
Client Application	25	0	0	25
Security	0	0	0	0
Outsource Shipping	0	0	0	0
Exception Reporting	0	0	0	0
Final Report Output	25	0	0	25
Version Control	0	0	0	0

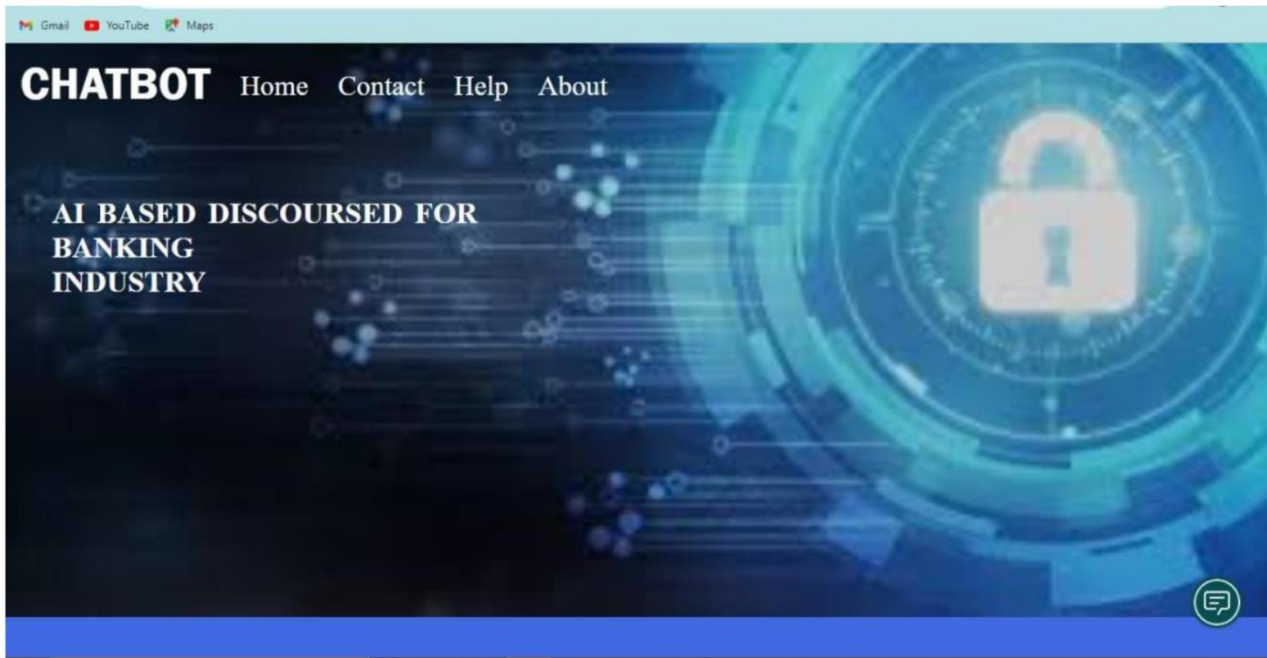


## 2.User Acceptance Testing

Test case ID	Feature Type	Component	Test Scenario	Pre-Requliste	Steps To Execute	Test Data	Expected Result	ActualResult	Status	Comments	TC For Automation Type	BUG ID	Executed By
Chatbot_TC_001	UI	Home Page	Verify user is able to see chatbot icon while website launched	None	1. login url and click go 2. click on chatbot icon 3. verify chatbot is displayed or not	<a href="#">click details</a>	Chatbot icon is able to be viewed by user	Working as expected	Pass	NA	NA	—	MOHAMED I
Chatbot_TC_002	Functional	Home Page	Verify the chatbot icon is in chatbot icon page	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window	<a href="#">click details</a>	user is able to interact with chatbot easily	Working as expected	Pass	NA	NA	—	MOHAMED I
Chatbot_TC_003	Functional	Home page	Verify user is able to verify getting from chatbot "Hi! I'm a banking bot. How can I help you today?" Banking Inquiry User?"	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter	<a href="#">click details</a>	Chatbot is able to provide instant replies for user queries	Working as expected	Pass	NA	NA	—	MOHAMED I
Chatbot_TC_004	Functional	Chatbot	Verify Chatbot is able to provide options for user to choose what to choose	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter	<a href="#">click details</a>	Chatbot is able to provide options for user to choose what to choose	Working as expected	Pass	NA	NA	—	MOHAMED I
Savings_TC_001	UI	Chatbot	Verify user is able to select type of savings account	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter 4. select the desired option	<a href="#">click details</a>	user is able to select type of savings account	Working as expected	Pass	NA	NA	—	MOHAMED I
Savings_TC_002	Functional	Chatbot	Verify user is able to know the procedure to open savings account for selected type	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter 4. select the desired option	<a href="#">click details</a>	user is able to know the steps to open savings account for selected type	Working as expected	Pass	NA	NA	—	ABIRRAJ S
Savings_TC_003	Functional	Chatbot	Verify user is check the minimum balance	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter 4. select the desired option	<a href="#">click details</a>	user is able to check the minimum balance	Working as expected	Pass	NA	NA	—	ABIRRAJ S
Savings_TC_004	Functional	Chatbot	Verify user is able to find interest rate	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter 4. select the desired option	<a href="#">click details</a>	user is able to find interest rate	Working as expected	Pass	NA	NA	—	ABIRRAJ S
Current_TC_001	UI	Chatbot	Verify user is able to select type of company	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter 4. select the desired option	<a href="#">click details</a>	user is able to select type of company	Working as expected	Pass	NA	NA	—	ABIRRAJ S
Current_TC_002	Functional	Chatbot	Verify user is able to know the procedure to open current account for selected type	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter 4. select the desired option	<a href="#">click details</a>	user is able to know the steps to open current account for selected type	Working as expected	Pass	NA	NA	—	ABIRRAJ S
Current_TC_003	Functional	Chatbot	Verify user is able to know about zero balance current account	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter 4. select the desired option	<a href="#">click details</a>	user is able to know about zero balance current account	Working as expected	Pass	NA	NA	—	ABIRRAJ S
Current_TC_004	Functional	Chatbot	Verify user is able to choose options for selecting type of available policies	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter 4. select the desired option	<a href="#">click details</a>	user is able to know the procedure to open current account	Working as expected	Pass	NA	NA	—	ABIRRAJ S
Loan_TC_001	UI	Chatbot	Verify user is able to know about available loans	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter 4. select the desired option	<a href="#">click details</a>	user is able to choose options to select type of available policies	Working as expected	Pass	NA	NA	—	DINESHJUNIOR M
Loan_TC_002	Functional	Chatbot	Verify user is able to check the loan status	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter 4. select the desired option	<a href="#">click details</a>	user is able to know about available loan amounts	Working as expected	Pass	NA	NA	—	DINESHJUNIOR M
Loan_TC_003	Functional	Chatbot	Verify user is able to know about post loan	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter 4. select the desired option	<a href="#">click details</a>	user is able to check the loan status	Working as expected	Pass	NA	NA	—	DINESHJUNIOR M
Loan_TC_004	Functional	Chatbot	Verify user is able to know about bank working days	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter 4. select the desired option	<a href="#">click details</a>	user is able to know about post loan	Working as expected	Pass	NA	NA	—	DINESHJUNIOR M
Recurd_TC_001	Functional	Chatbot	Verify user is able to know about list of branches	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter 4. select the desired option	<a href="#">click details</a>	user is able to know about bank working days	Working as expected	Pass	NA	NA	—	MOHURAJ S
Recurd_TC_002	Functional	Chatbot	Verify user is able to find the nearest branch	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter 4. select the desired option	<a href="#">click details</a>	user is able to know about list of branches	Working as expected	Pass	NA	NA	—	MOHURAJ S
Recurd_TC_003	Functional	Chatbot	Verify user is able to know about intercity transfer facility	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter 4. select the desired option	<a href="#">click details</a>	user is able to find the nearest branch	Working as expected	Pass	NA	NA	—	MOHURAJ S
Recurd_TC_004	Functional	Chatbot	Verify user is able to know about currency conversion facility	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter 4. select the desired option	<a href="#">click details</a>	user is able to know about currency conversion facility	Working as expected	Pass	NA	NA	—	MOHURAJ S
NFTbank_TC_001	Functional	Chatbot	Verify user is able to know the procedure to log out banking account	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter 4. select the desired option	<a href="#">click details</a>	user is able to know the steps to log out banking account	Working as expected	Pass	NA	NA	—	MOHURAJ S
NFTbank_TC_002	Functional	Chatbot	Verify user is able to know the procedure to change net banking password	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter 4. select the desired option	<a href="#">click details</a>	user is able to know the steps to change net banking password	Working as expected	Pass	NA	NA	—	MOHURAJ S
NFTbank_TC_003	UI	Chatbot	Verify user is able to choose options for selecting type of fund transfers	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter 4. select the desired option	<a href="#">click details</a>	user is able to choose options for selecting type of fund transfers	Working as expected	Pass	NA	NA	—	MOHURAJ S
NFTbank_TC_004	Functional	Chatbot	Verify user is able to know about daily transaction limit	Chatbot is available	1. click on chatbot icon 2. verify the query is in the chat window 3. Press enter 4. select the desired option	<a href="#">click details</a>	user is able to know about daily transaction limit	Working as expected	Pass	NA	NA	—	MOHURAJ S

## 9.RESULTS:

### Performance Metrics



## 10. ADVANTAGES

- Artificial\_intelligence can use analytics in banks, it can test vast quantities of data to search for patterns, groupings, and correlations, Machine learning can improve processes such as fraud detection, risk modeling, biometric identification or credit underwriting.
- Most leading banks have already added virtual assistants to their instant website chatbots, voice response systems, and mobile applications, Artificial\_Intelligence considers each interaction as a teachable moment, so the chatbots (virtual assistants) keeps getting better while understanding customers, With AI, virtual assistants can deliver better customer support.
- Artificial\_intelligence can detect the factors involved in frauds & support investigators, It improves financial security with advanced fraud prevention, Artificial\_Intelligence works as a real-time scam solution for the banking sector while handling complex situations, AI can detect fraud by flagging unusual transactions, It feeds back into the consumer's profile which subsequently builds a secure environment.
- AI can complete many tasks through complex automation, resulting in better productivity, Based on a machine\_learning algorithm, AI can quickly consume and process a massive amount of data at an expedited level, The enormous speed brings efficiency to financial services, providing scope for personalized offerings to consumers, AI makes faster decisions while carrying out actions quickly.
- The finance industry is harnessing machine\_learning to lower operational costs & drive profitability, This field involves both front-and back-office activities across multiple institutions, Machine\_learning algorithms can analyze thousands of data points in real time and flag suspicious or plain-right fraudulent transactions, stopping many fraudulent claims in the process.
- Artificial\_intelligence increase efficiency, accuracy, and speed of mathematical calculations, it can handle large quantities of data, banks can find the best combination of the initial margin reducing trades at a given time based on the degree of initial margin reduction in the past under different combinations of those trades

## DISADVANTAGES

- The production & maintenance of artificial\_intelligence requires high costs as they are very complex machines, AI consists of advanced software\_programs that require regular updates to meet the needs of the changing environment, In the case of critical failures, the procedure to reinstate the system and recover lost codes may require enormous time & cost.
- Although Artificial\_Intelligence can learn & improve, it still can't make judgment calls, Humans can take individual circumstances and judgment calls into account when making decisions, something that AI might never be able to do, Replacing adaptive human behavior with AI may cause irrational behavior within ecosystems of humans & things.
- AI can offer a lot of power to the few individuals who are controlling it, so, AI carries the risk and takes control away from humans while dehumanizing actions in several ways, Artificial Intelligence delivered to wrong hands can turn out to be a serious threat to humankind, If individuals start thinking destructively, they can generate havoc with these advanced machines.
- Artificial intelligence allows you to replace the workforce with machines that can lead to wide-reaching unemployment, if the use of AI becomes rampant, people will be highly dependent on the machines & lose their creative power, Be it banking or any other sector, AI can increase the unemployment rate, Individuals with nothing to do can lead to the devastating use of their minds.

## CONCLUSION:

Robust and rapid processing needs, advent of mobile technology, data availability, and proliferation of opensource software offer AI a huge scope in the banking sector. Though AI has been used in banking for decades, it remained unnoticed. In today's app-driven world, the banking sector eyes on leveraging with the help of mobile app development companies. In all these ways, AI in banking is continuing to transform the industry to provide a greater level of value to their customers, reduce risks, and increase opportunities as the financial engines of our modern economy. processes to fully realize the benefits that AI promises to deliver. Even so, technological advances could potentially outpace industry adoption, even as banks embrace an accelerated journey toward modernization. To successfully realize the benefits that AI can deliver in the future, banks must stay the course today, which, for some, can be easier said than done.

## Source Code:

```
<script>
  window.watsonAssistantChatOptions = {
    integrationID: "85e0cdaf-3469-40f7-bc8f-ebbed6d4bf69", // The ID of this
integration.
    region: "us-south", // The region your integration is hosted in.
    serviceInstanceID: "17716baf-6fe8-4782-beld-b9657b195767", // The ID of
your service instance.
    onLoad: function(instance) { instance.render(); }
  };
  setTimeout(function(){
    const t=document.createElement('script');
    t.src="https://web-chat.global.assistant.watson.appdomain.cloud/versions/"
+ (window.watsonAssistantChatOptions.clientVersion || 'latest') +
"/WatsonAssistantChatEntry.js";
    document.head.appendChild(t);
  });
</script>
```

## GITHUP LINK:

**B.NAGA SAPTA AAKASH** : <https://github.com/aakashnaga>  
**RAHUL VISWANATH** : <https://github.com/rahulv>  
**ATHI NARAYANA KESAVAN** : <https://github.com/athi5622>  
**GOWRI SUPRAMANIAN** : <https://github.com/GOWRISUPRAMANIAN>

## Project Demo Link:

[https://drive.google.com/file/d/1ym0NN1AgBnzcmOe4A8dm-OJI\\_KgBzlCH/view?usp=drivesdk](https://drive.google.com/file/d/1ym0NN1AgBnzcmOe4A8dm-OJI_KgBzlCH/view?usp=drivesdk)

