PROJECT REPORT

AI BASED DISCOURSE FOR BANKING INDUSTRY

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1. INTRODUCTION

1.1 Project Overview

This project, titled “AI Based Discourse for Banking Industry”, aims at providing a platform for customers to clarify their queries online regarding banking. This is achieved with the help of a chatbot that is trained with some of the most frequently asked questions that banking customers usually tend to come up with. The chatbot is created using IBM Watson Assistant and is trained by manually adding the queries to it along with the relevant responses. The chatbot will then be available for use on a website which usually is the bank’s website for anyone to access. Customers or anyone in fact can access the chatbot to interact with it and find solutions to their queries.

1.2 Purpose

With banking being an essential service that people require and with it being a slightly complicated and confusing topic for many, a lot of queries naturally tend to arise. For them to be answered as they are predominantly now in a manual aspect either by face to face interactions with a banking employee or through a customer care service, will require a lot of workforce and still end up with long waiting times. Hence, comes the need for an automated solution to the problem which can be easily handled by our chatbot. A chatbot is free, easy to use and is readily accessible at all times and from anywhere. It also provides instant reliable answers to queries and hence eliminating the need for the customers to wait to get their queries cleared. It also ensures that there is no spread of misinformation by providing official and authentic responses to queries straight from the bank sources.

2. LITERATURE SURVEY

2.1 Existing problem

Banks are not able to resolve the queries of customers at all times related to the products or services in a satisfactory way which in turn hinders the customer satisfaction. Customers need to visit banks frequently for simple queries.

2.2 References

Paper 1

Authors: Vinod Kumar Shukla, Sasha Fathima Suhel, Sonali Vyas, Ved Prakash Mishra Year:

2020

Title: Conversation to Automation in Banking Through Chatbot Using Artificial Machine Intelligence Language

Methodology: This paper examines some of the latest AI patterns and activities. System-Chatbots are made. In the banking industry, the introduction of Artificial Intelligence has driven chatbots and changed the face of the interaction between banks and customers.

Advantage: Artificial Intelligence involves creating machines that are capable of simulating knowledge. It also explores the existing usability of chatbot to assess whether it can fulfill the customers ever-changing needs.

Disadvantage: The dialogue capability can be limited to a very specific set or format of questions that are established by the chatbot development team.

Paper 2

Authors: Yomna Abdulla, Rabab Ebrahim, Sumathi Kumaraswamy

Year: 2020

Title: Artificial Intelligence in Banking sector: Evidence from Bahrain

Methodology: Artificial intelligence applications and robotic process automation for chatbots are discussed. Findings highlight that a high priority is given to the digital transformation journey in banks, which suggests that further development and implantation of technology in banks will be seen in the near future.

Advantage: AI can be best described as the computerized processes that employ knowledge, reasoning, and communication that aids smart decision making by chatbots in banks.

Disadvantage: Banking sector faces significant challenges relating to security, risk management and inefficiency that decrease the overall performance of banks.

Paper 3

Authors: Tebaga Lucky Mamela, Nita Sukdeo, Sambil Charles Mukwakungu

Year: 2020

Title: Adapting to Artificial Intelligence through Workforce Re-skilling within the Banking Sector in South Africa

Methodology: This research paper intends to inspire the banking sector to re-skill the banking Institution's workforces in South Africa to adapt to the Artificial Intelligence technologies.

Advantage: Re-skilling the banking workforce to cooperate and collaborate effectively with Artificial Intelligence will enable not only efficiency but futuristic innovation and continuous growth.

Disadvantage: Although AI is creating millions of new jobs, the banking institutions does the substitution of workforces with intelligent robots that could increase the inequality among the highly skilled workforce.

Paper 4

Authors: Shashank Bairy, Rashmi R

Year: 2021

Title: Conversation to Automation in Banking Through Chatbot Using Artificial Machine Intelligence Language

Methodology: Chatbot is a software application that listens to a user's query in natural language and responds accordingly. There is rapid adoption of the latest technologies in banking and chatbots are one of them. Answering customer queries and assisting customers with banking transactions are some of the ways in which it's making an impact on the industry.

Advantage: Netbanking websites are complex and involve navigating through a lot of pages to find the information that users need. Bank staff undergo a lot of stressful situations when communicating with clients directly. Such situations can be avoided gracefully by using chatbots with AI.

Disadvantage: Chatbots cannot hold the conversation which means it cannot answer multiple questions at the same time.

Paper 5

Authors: Navleen Kaur, Dr Monika Sharma, Supriya Lamba Sahdev, Laraibe Siddiqui

Year: 2020

Title: A Review of Chatbots in the Banking Sector

Methodology: Artificial intelligence (AI), is simulation of human intelligence in machines. Artificial intelligence consists of generally two fundamental ideas. First it involves studying human brains like how their thought process works and secondly it helps representing those processes through machine learning.

Advantage: AI is used in banking industry to minimize the chances of fraud and scam. It is also used to carry out effective decision-making

Disadvantage: 24.1% i.e. 27 people out of 112 are not sure that using artificial intelligence in banking is beneficial.4.5% i.e. 5 people out of 112 don‘t think that it is beneficial at all. 22.3% i.e. 25 people don‘t agree that it has any impact on fast services.

Paper 6

Authors: Dr.Anil B Malali, Dr.S.Gopalakrishnan

Year: 2020

Title: Application of Artificial Intelligence and Its Powered Technologies in the Indian Banking and Financial Industry

Methodology: Examine the dynamics of AI ecosystems in the banking and financial industry and how it is fast becoming a most important disrupter by looking at some of the critical unsolved problems in this area of business

Advantage: AI will empower banking organizations to completely redefine how they operate, establish innovative products and services, and most importantly impact customer experience interventions.

Disadvantage: AI and ML are replacing the human analysts in business activities since human selection involves high cost.

Paper 7

Authors: Dr. Shalini Sayiwal

Year : 2020

Title: CHATBOTS IN BANKING INDUSTRY: A CASE STUDY

Methodology: Chatbots designed with AI are one of the most promising strategies of a banking business that can lead the bank to win the satisfaction vote of their loyal customers.

Advantage: Chatbots are relatively inexpensive to develop and maintain compared to the human equivalent. Chatbots are more intuitive and easier to use. There is no download required and the experience can be personalized over time through machine learning.

Disadvantage: Chatbots have significant limitations based on accents and languages.

2.3 Problem Statement Definition

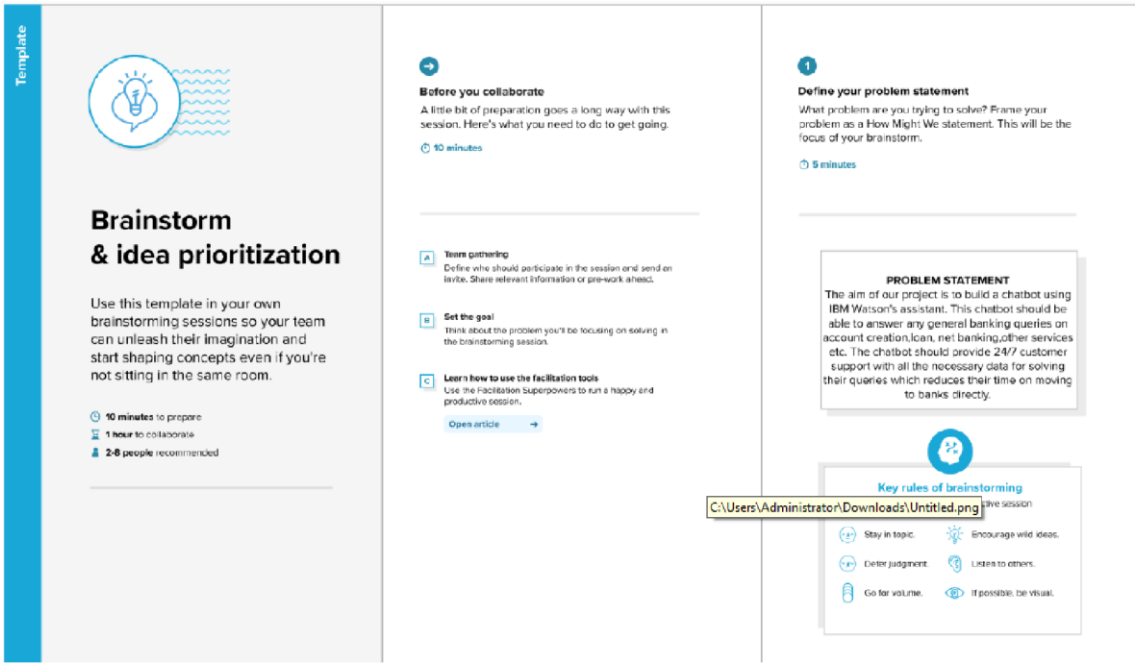
Banking is one the crucial sectors, it deals with financial transactions which can be availed by everyone, but banks are not able to resolve the queries of customers at all times related to the products or services in a satisfactory way in turn hinders the customer satisfaction. In order to guide the customers throughout all the financial services provided by the bank, an intelligent system has to be introduced to provide people with the best solution possible. The users are bank customers who need 24/7 service to clear all their queries and guide them through all the banking processes.

So, an enhanced and smarter way of interaction with the customers has to be built to ensure efficient delivery of service. In order to overcome the user satisfaction issues associated with banking services, chatbot will provide personal and efficient communication between the user and the bank. It is built to be the overall virtual assistant that can facilitate customers to ask banking- related questions without visiting the bank or calling up customer service centers as well as providing them with relevant suggestions.

3. IDEATION AND PROPOSED SOLUTION 3.1

Empathy Map Canvas

3.2 Ideation & Brainstorming



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!

ABHISHEK B

- It provides instant solution for general banking queries
- It is multilingual
- It is interoperable
- It facilitates constant guidance to customers on creating bank accounts

ADITHYA R

- It provides reliable service on answering net banking queries
- It saves user's time and cost
- It is trustworthy
- It works in a very fast and intelligent manner

PRATHYUSH KRISHNEN J

- It maintains a confidential conversation with customers
- It provides quick responses for loan related queries
- It supports voice assistance feature
- It maintains a user friendly interface

RAMKUMAR K

- It has an assured security and provides personalized service
- It provides efficient and convenient customer support
- It is used to retrieve customer's old transaction history quickly
- It is availabie 24/7

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

Using Natural Language Processing

- It supports voice assistance feature
- It is multilingual
- It provides instant solution for general banking queries
- It has an assured security and provides personalized service

Using Neural network

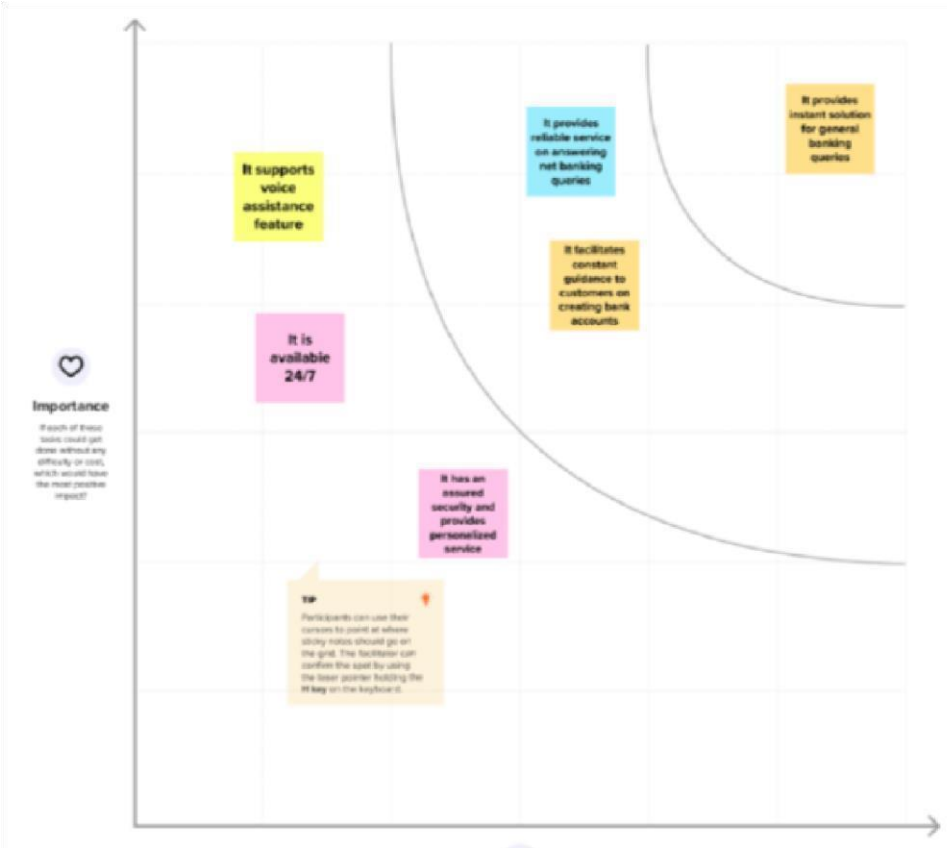
- It works in a very fast and intelligent manner
- It provides quick responses for loan related queries
- It provides reliable service on answering net banking queries
- It provides efficient and convenient customer support

Using Artificial Intelligence

- It is trustworthy
- It maintains an user friendly interface
- It facilitates constant guidance to customers on creating bank accounts
- It maintains a confidential conversation with customers

Using Cloud technology

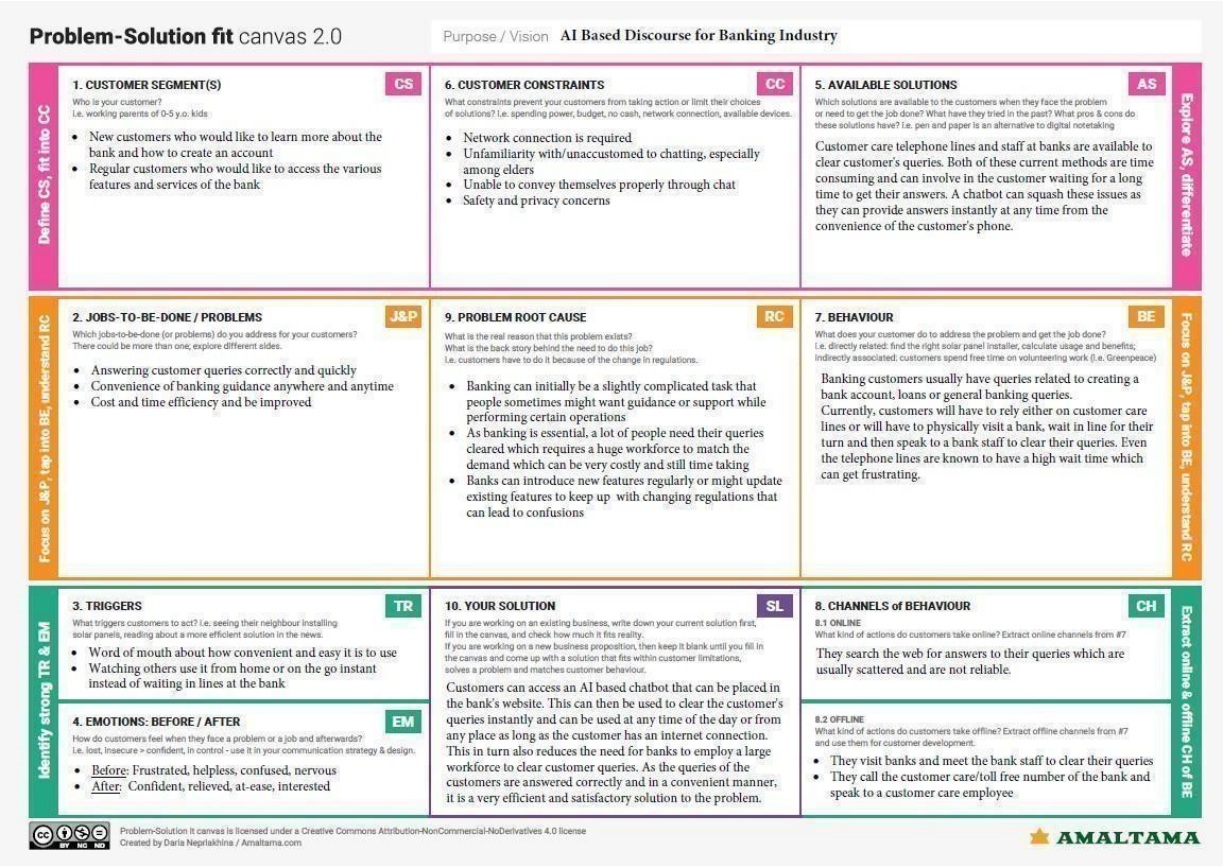
- It is used to retrieve customer's old transaction history quickly
- It is interoperable
- It is availabie 24/7
- It saves user's time and cost



3.3 Proposed Solution

S.NO	PARAMETER	DESCRIPTION
1.	Problem Statement (Problem to be solved)	Banks are not able to resolve the queries of customers at all times related to the products or services in a satisfactory way which in turn hinders the customer satisfaction. Customers need to visit banks frequently for simple queries.
2.	Idea / Solution description	In order to guide the customers throughout all the financial services provided by the bank, an intelligent system has to be introduced to provide people with the best solution possible.
3.	Novelty / Uniqueness	Chatbots developed using AI should be able to answer any general banking queries on account creation, loan, net banking, other services etc. It addresses the queries of customers immediately and effectively in a cost efficient manner.
4.	Social Impact / Customer Satisfaction	In order to attain the user satisfaction issues associated with banking services, chatbot will provide personal and efficient communication between the user and the bank. It is built to be the overall virtual assistant that can facilitate customers to ask banking- related questions without visiting the bank or calling up customer service centers as well as providing them with relevant suggestions.
5.	Business Model (Revenue Model)	Employing a chatbot will be a cost-effective solution to clear customer queries for banks. It eliminates the need for a massive customer care workforce and even reduces the workload of the bank employees whose efforts can be used elsewhere.
6.	Scalability of the Solution	AI Chatbots provides 24/7 service to clear all customer queries and guide them through all the banking processes. It supports voice assistance feature and maintains a confidential conversation with customers. It can be scaled as per the requirements of the bank to include answers to queries related to any new feature or service introduced by the bank.

3.4 Problem Solution fit



4. REQUIREMENT ANALYSIS

4.1 Functional requirements

FR NO.	FUNCTIONAL REQUIREMENT (EPIC)	SUB REQUIREMENT (STORY / SUB-TASK)
FR-1	Savings Account Related Actions	• Type of Savings Account Creation Details • Interest Rate • Minimum Balance • Debit Card • Credit Card
FR-2	Current Account Related Actions	• Type of Company • Current Account Closure Steps • Update GSTIN • Zero Balance Current Account
FR-3	Loan Account Related Actions	• Type of Loan

		• How long for approval • Available Loan Amounts • Loan Status • Joint Loan
FR-4	General Queries Related Actions	• Bank Working Days • List of Branches • Storage Locker Facility • Currency Conversion Facility • CIBIL • Find a nearest branch
FR-5	Net Banking Related Actions	• Login Steps • Change Net Banking Password • Daily Limit • Types of Fund Transfer • Add Beneficiary

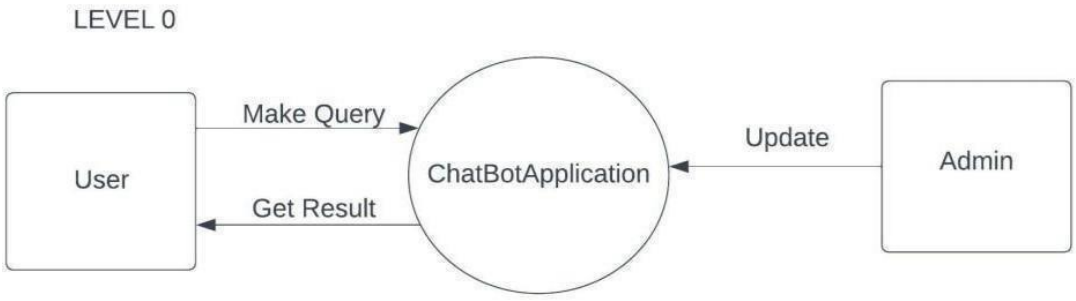
4.2 Non-Functional requirements

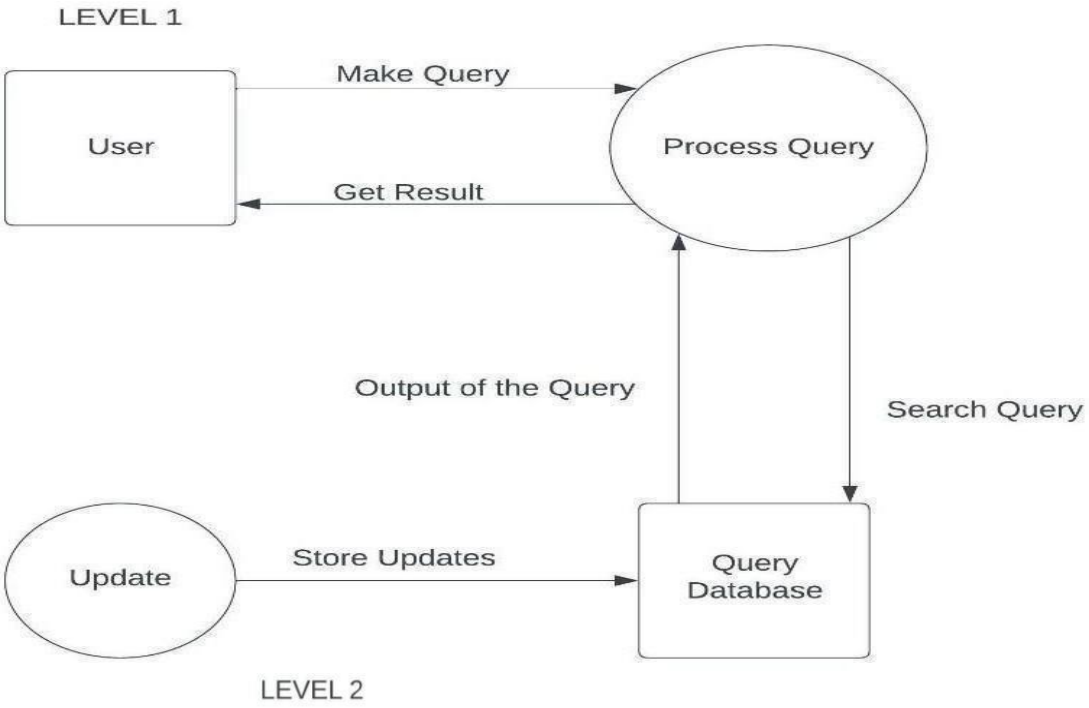
NFR NO.	NON-FUNCTIONAL REQUIREMENT	DESCRIPTION
NFR-1	Usability	Chatbots developed using AI should be able to answer any general banking queries on account creation, loan, net banking, other services etc. It addresses the queries of customers immediately and effectively in a cost efficient manner.
NFR-2	Security	The AI Chatbot maintains a confidential conversation with customers. Chatbot will provide personal and efficient communication between the user and the bank.

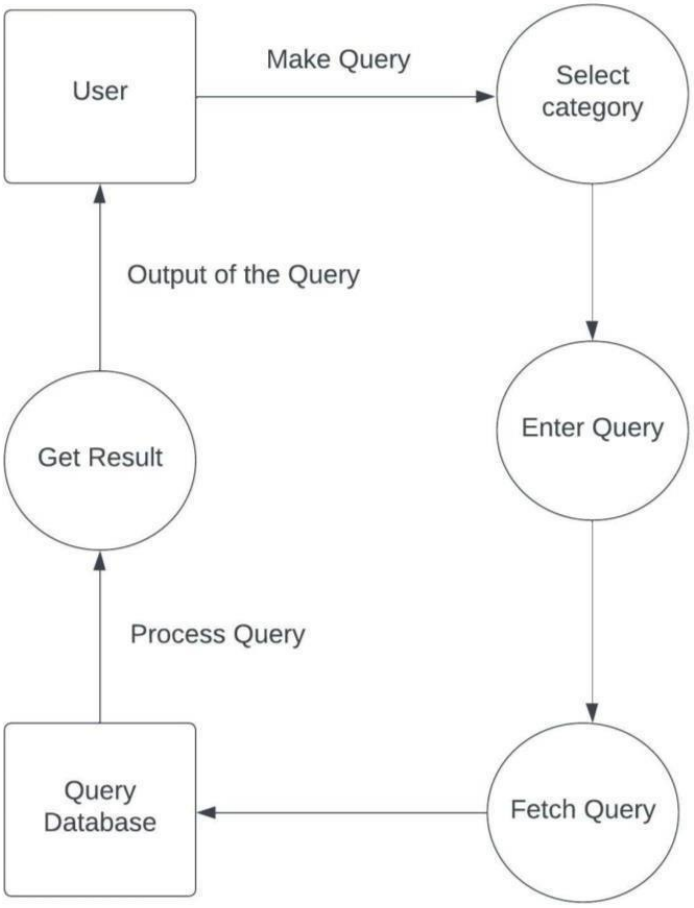
NFR-3	Reliability	Chatbots are trained very well using AI to provide solutions for the popular and frequently asked questions, thereby providing the best suited service quickly. Thus AI Chatbots has a reliable end-user experience.
NFR-4	Performance	AI Chatbots are a great way to overcome the limitation of workload of humans. There can be multiple instances of a single chatbot inquiring about different people at the same time. Such chatbots work in real time with no need for the customers to wait. This ensures faster, easier and more efficient face-time with customers.
NFR-5	Availability	AI Chatbots provide 24/7 service to clear all customer queries and guide them through all the banking processes. It is available to anyone with access to the internet with basic hardware.
NFR-6	Scalability	AI Chatbots are helping the banking industry to scale their customer service and to improve customer service satisfaction at the same time. It can be scaled as per the requirements of the bank to include answers to queries related to any new feature or service introduced by the bank.

5. PROJECT DESIGN

5.1 Data Flow Diagrams

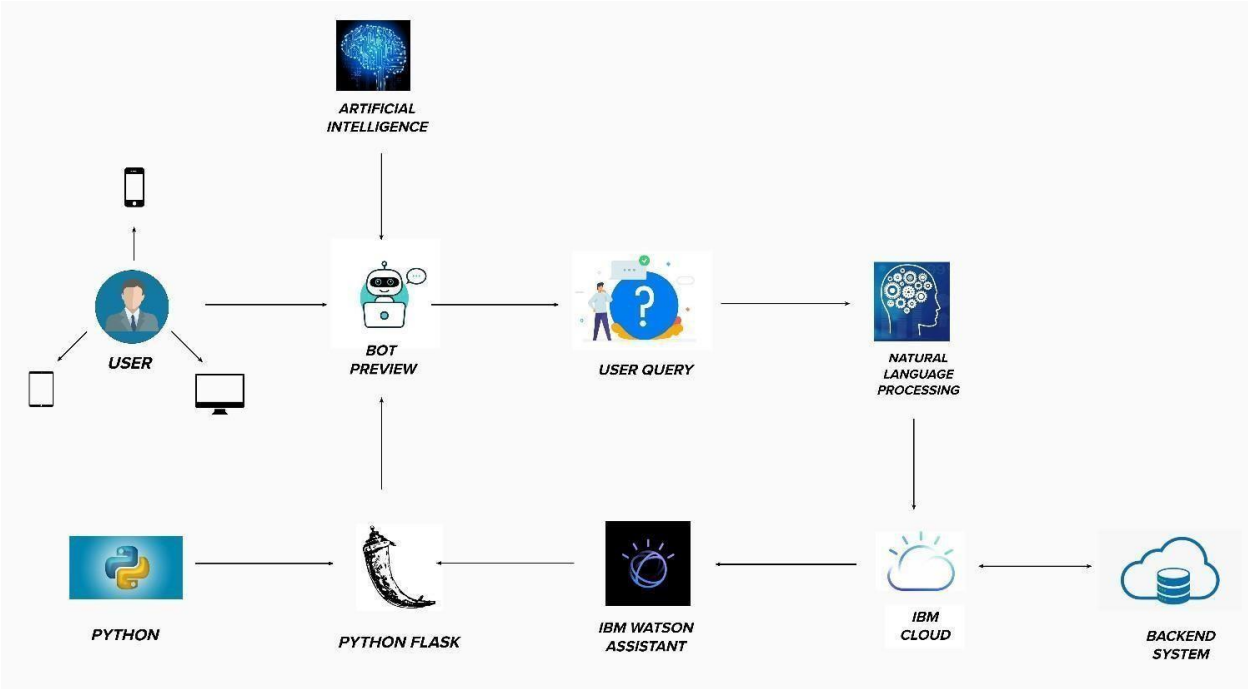




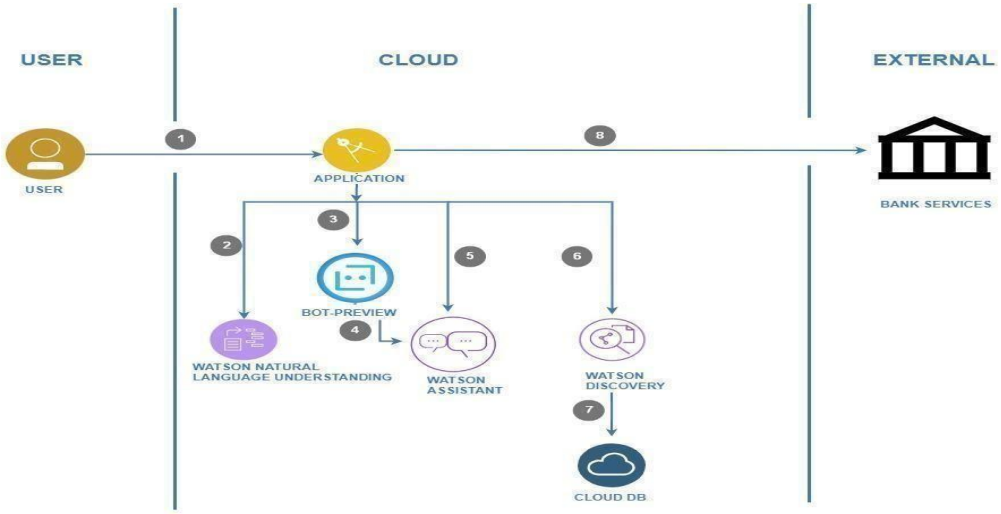


5.2 Solution & Technical Architecture

Solution Architecture



Technical Architecture



5.3 User Stories

USER TYPE	FUNCTIONAL REQUIREMENT (EPIC)	USER STORY NUMBER	USER STORY / TASK	ACCEPTANCE CRITERIA	PRIORITY	RELEASE

Customer (Mobile or Web user)	Savings Account Related Actions	USN-1	As a user, in the Savings Account option, I can select Types of Savings Account to get details regarding documents required for creating that savings account.	I can clear my queries regarding types of savings account	High	Sprint-1
		USN-2	As a user, I can check the Interest Rates of Savings Account	I can clear my queries regarding interest rates of savings account	High	Sprint-1
		USN-3	As a user, I can check the Minimum Balance of Savings Account	I can clear my queries regarding minimum balance of savings account	Medium	Sprint-2
	Current Account Related Actions	USN-4	As a user, I can choose the Type of Company to know the information on documents to be submitted for creating current account	I can clear my queries regarding types of companies	High	Sprint-1
		USN-5	As a user, I want to get details on procedure to close my Current Account	I can clear my queries regarding current account closure	High	Sprint-2
	Loan Account Related Actions	USN-6	As a user, I can choose the Type of Loans to know the information on choosing an essential loan scheme	I can clear my queries regarding types of loan account	High	Sprint-1
		USN-7	As a user, I can check the Loan Amounts that can be offered for corresponding Loan Accounts chosen	I can clear my queries regarding loan amounts of loan account	High	Sprint-2
		USN-8	As a user, I can check the Status of Loan for my Loan Accounts	I can clear my queries regarding loan status of loan account	Low	Sprint-2

USER TYPE	FUNCTIONAL REQUIREMENT (EPIC)	USER STORY NUMBER	USER STORY / TASK	ACCEPTANCE CRITERIA	PRIORITY	RELEASE
		USN-10	As a user, I want to check my CIBIL score for my loan application and to ensure whether my loan application is approved by the bank.	I can clear my queries regarding CIBIL score of loan application	Medium	Sprint 3
		USN-11	As a user, I want to get the procedure details for maintaining Storage Locker facility of my bank account	I can clear my queries regarding storage locker facilities of bank account	High	Sprint-3
	Net Banking Related Actions	USN-12	As a user, I want to get the procedure details for changing the Net Banking password of my bank account	I can clear my queries regarding change of net banking password	Medium	Sprint-2
		USN-13	As a user, I can select types of fund transfers to get details regarding different services available in net banking	I can clear my queries regarding types of fund transfers in net banking	High	Sprint-3
		USN-14	As a user, I want to get the procedure details for adding beneficiaries to my net banking account.	I can clear my queries regarding adding beneficiaries in net banking	Low	Sprint-3
Administrator		USN-15	As an admin, I can change responses to queries and modify them as and when needed.	I can modify responses of the chatbot	Medium	Sprint-1
		USN-16	As an admin, I can add more options to queries and add new options as new features get added.	I can add more options and queries into the chatbot	Medium	Sprint-1

SPRINT	FUNCTIONAL REQUIREMENT (EPIC)	USER STORY NUMBER	USER STORY / TASK	STORY POINTS	PRIORITY	TEAM MEMBERS

Sprint-1	Savings Account Related Actions	USN-1	As a user in Savings Account option, I can select the Type of Savings Account to get details regarding documents required for creating Savings Account	4	High	ADITHYA R
Sprint-1		USN-2	As a user, I can check the Interest Rates of Savings Account	4	High	ADITHYA R
Sprint-1		USN-3	As a user, I can check the Minimum Balance of Savings Account	3	Medium	ADITHYA R
Sprint-1	Current Account Related Actions	USN-4	As a user, I can choose the Type of Company to know the information on documents to be submitted for creating current account	5	High	PRATHYUSH KRISHNEN J
Sprint-1		USN-5	As a user, I want to get details on procedure to close my Current Account	4	High	PRATHYUSH KRISHNEN J
Sprint-2	Loan Account Related Actions	USN-6	As a user, I can choose the Type of Loans to know the information on choosing an essential loan scheme	3	High	RAMKUMAR K
Sprint-2		USN-7	As a user, I can check the Loan Amounts that can be offered for corresponding Loan Accounts chosen	3	High	RAMKUMAR K
Sprint-2		USN-8	As a user, I can check the Status of Loan for my Loan Accounts	1	Low	RAMKUMAR K
Sprint-2	General Queries Related Actions	USN-9	As a user, I want to get the procedure details for Currency Conversion facility of my bank account	2	Medium	PRATHYUSH KRISHNEN J
Sprint-2		USN-10	As a user, I want to check my CIBIL score for my loan application and to ensure whether my loan application is approved by the bank.	1	Low	ABHISHEK B RAMKUMAR K
Sprint-2		USN-11	As a user, I want to get the procedure details for maintaining Storage Locker facility of my bank account	3	High	ABHISHEK B RAMKUMAR K
Sprint-2	Net Banking Related Actions	USN-12	As a user, I want to get the procedure details for changing the Net Banking password of my bank account	3	High	ABHISHEK B

6. PROJECT PLANNING AND SCHEDULING

6.1 Sprint Planning & Estimation

Sprint-2		USN-13	As a user, I can select types of fund transfers to get details regarding different services available in net banking	2	Medium	ABHISHEK B
Sprint-2		USN-14	As a user, I want to get the procedure details for adding beneficiaries to my net banking account.	2	Medium	ABHISHEK B
Sprint-3	Web Application	USN-15	As a user, I want to access the chatbot in a web browser that can be accessed from almost all devices.	20	High	PRATHYUSH KRISHNEN J RAMKUMAR K
Sprint-4	User Interface and Web Pages	USN-16	As a user, I want to view pages of the banking website and have access to the chatbot easily.	20	High	ABHISHEK B ADITHYA R

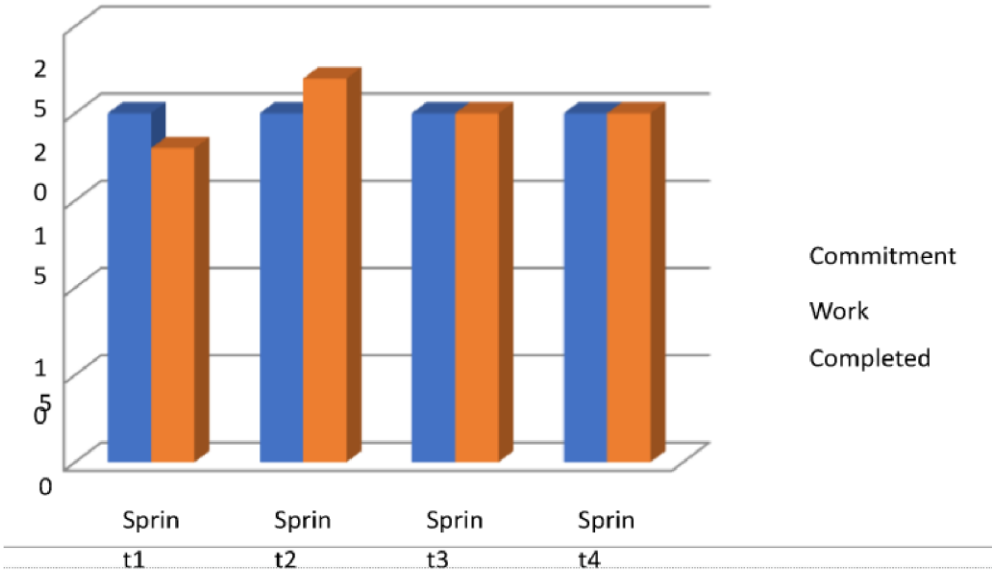
6.2 Sprint Delivery Schedule

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	18	02 Nov 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	22	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

SPRINT	TOTAL STORY POINTS	DURATION	AVERAGE VELOCITY
Sprint-1	20	6 Days	20/6 = 3.33
Sprint-2	20	6 Days	20/6 = 3.33

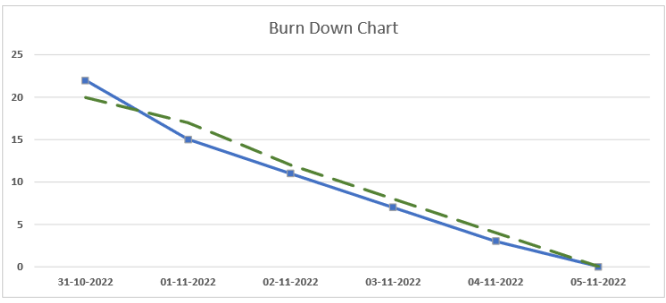
Sprint-3	20	6 Days	20/6 = 3.33
Sprint-4	20	6 Days	20/6 = 3.33
Overall	**80**	**24 Days**	**80/24 = 3.33**

Velocity chart:



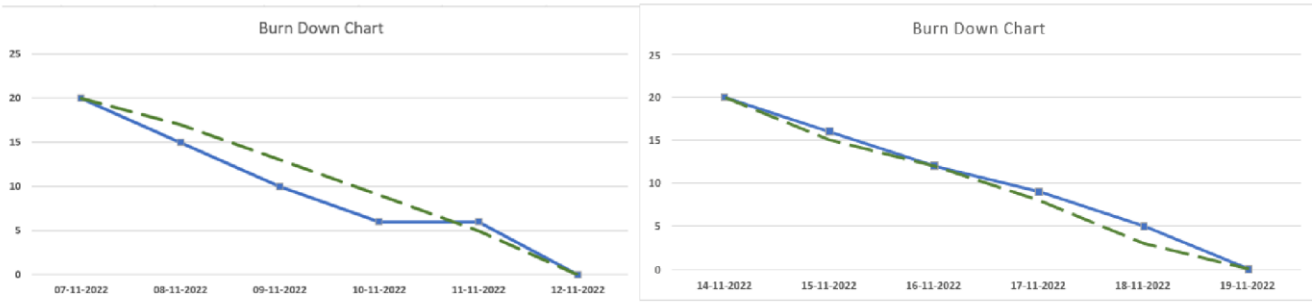
Burn down chart:

Sprint 1



Sprint 2

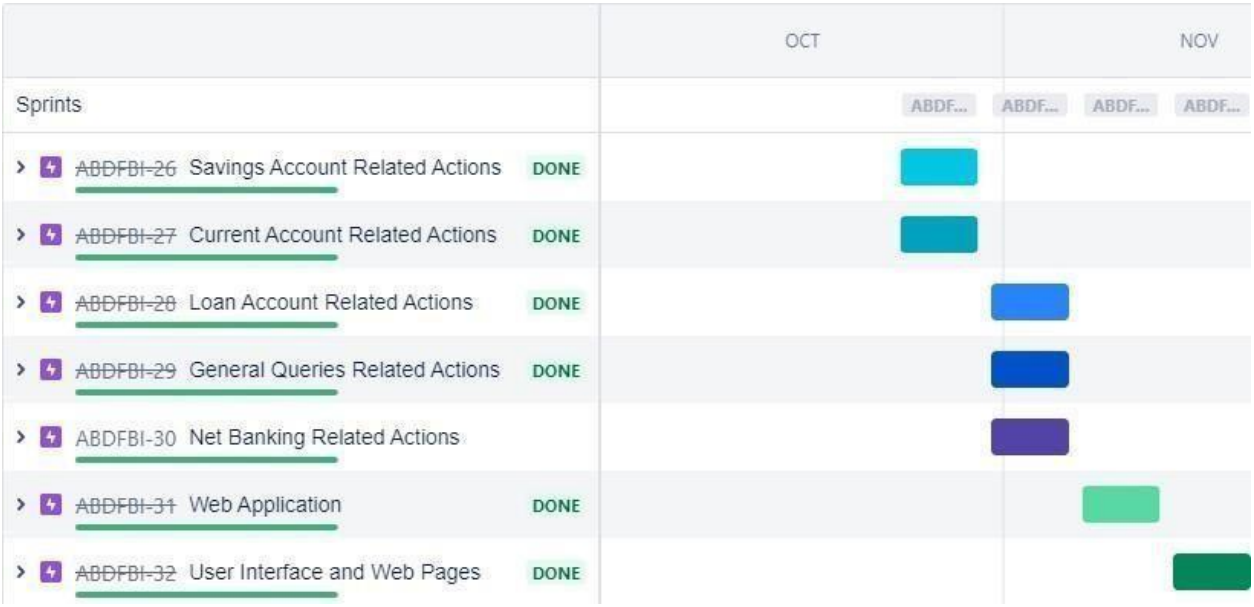
Summary of Stand- Up Calls

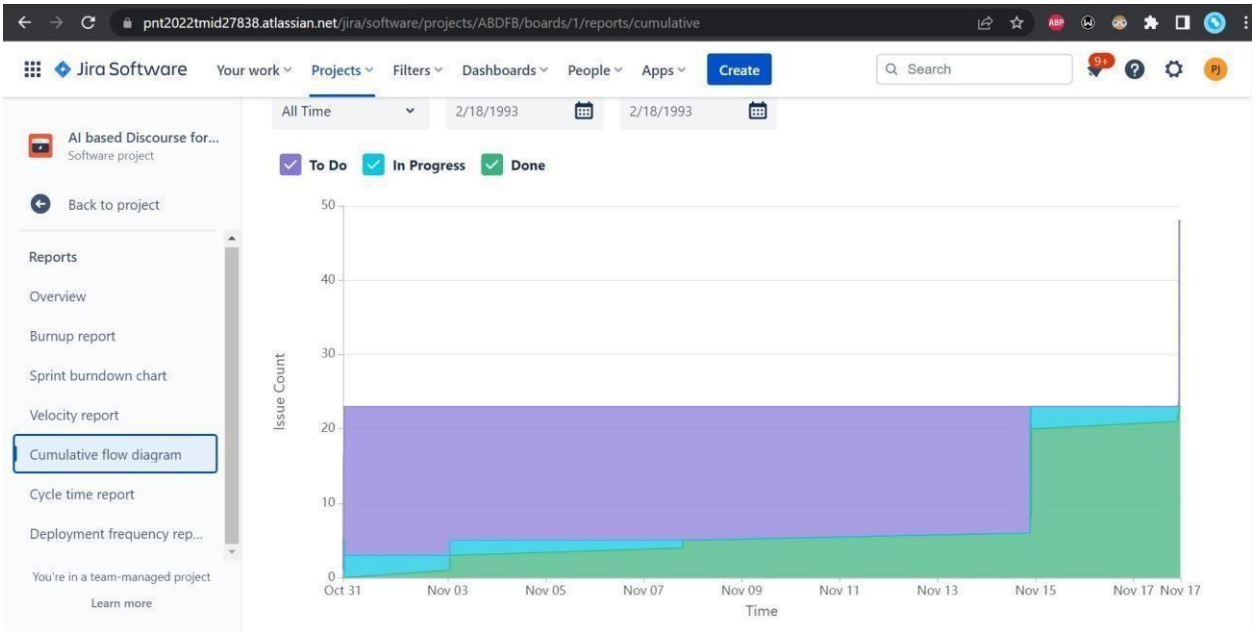


Sprint 3

Sprint 4

6.3 Reports from JIRA





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

7.1 Feature 1

Python Flask

Python Flask is used to develop chatbot applications using python. Flask is mainly used to render and integrate the chatbot application in the browser by providing API. By running the python application, the suitable server domain link is obtained and run in the browser.

HTML

The HTML and CSS is used to design the overall chatbot UI**.** HTML is used to add UI components and CSS is used to add style to those components. IBM watson assistant deploys HTML code to train the Chatbot.

Build PYTHON FLASK Code: **APP.PY**

```
from flask import Flask,render_template

app=Flask(__name__) @app.route('/') def

bank():

        return render_template('Home.html')

@app.route('/about')  def about():

        return render_template('About.html')   @app.route('/contact')

def contact():

        return render_template('Contact.html')

if __name__ =='__main__':

        app.run(debug = True)
```

HOME.HTML

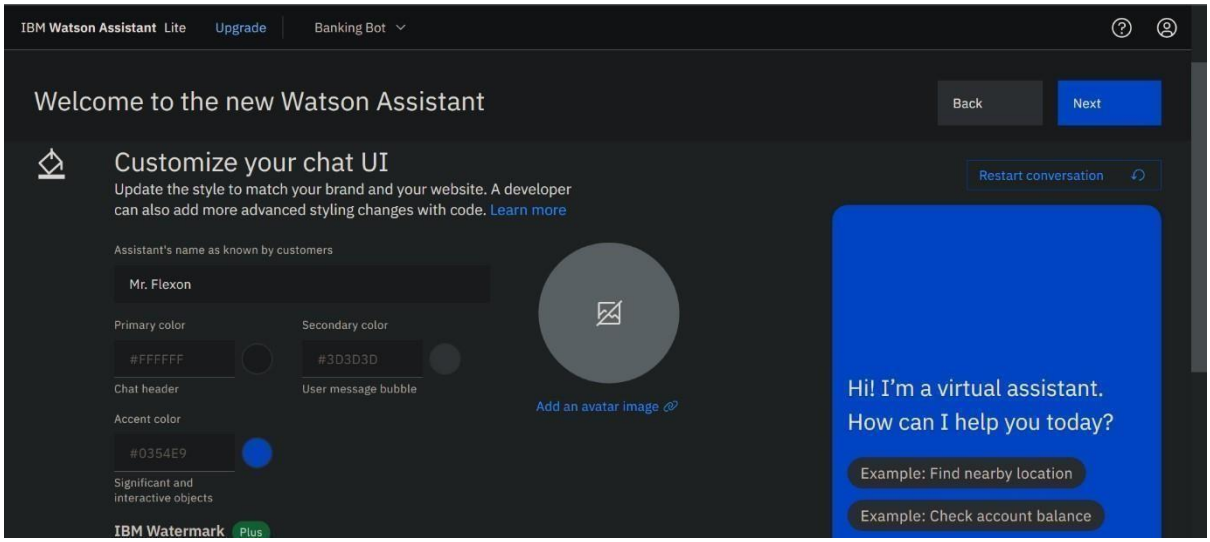
```
<!DOCTYPE html>
<html style="font-size: 16px;" lang="en"><head> <body>
<!==Chat Integration:==!>
   <script>  window.watsonAssistantChatOptions  =  {  integrationID:  "ffa94b22-
  82fd424dbaf005322655ecf4", // The ID of this integration.
   region: "us-south", // The region your integration is hosted in.
      serviceInstanceID: "e5ada103-ff26-4155-9a22-6cd24e8a71e0", // The ID of your service
instance.  onLoad:  function(instance)  { instance.render(); }
```

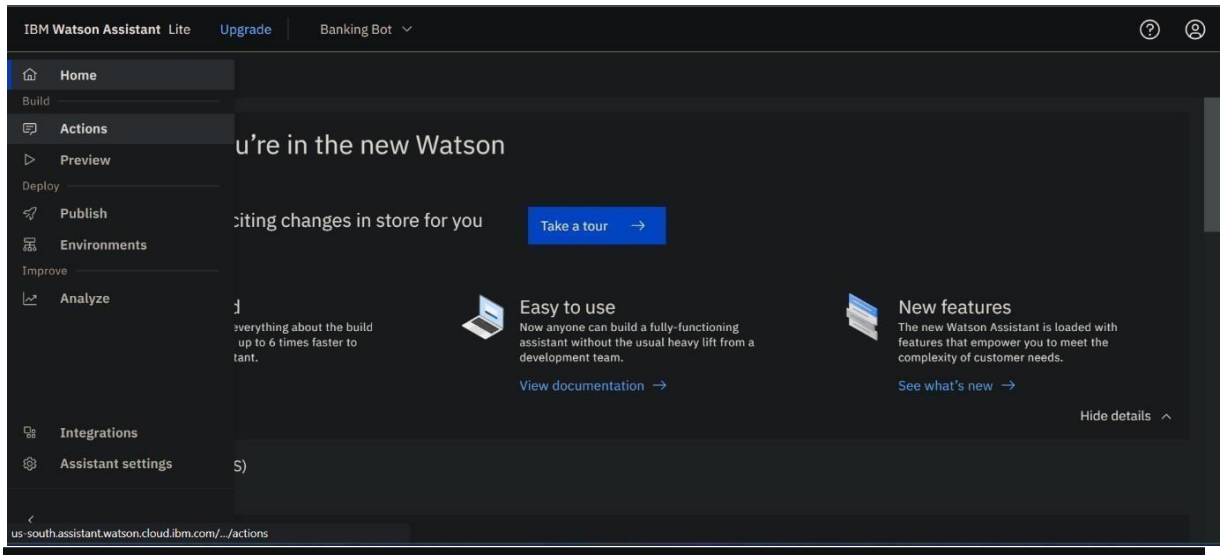
```
  };      setTimeout(function(){                  const
   t=document.createElement('script');
                  t.src="https://web-chat.global.assistant.watson.appdomain.cloud/versions/"      +
(window.watsonAssistantChatOptions.clientVersion || 'latest') + "/WatsonAssistantChatEntry.js";
   document.head.appendChild(t);
  });
</script>
      <footer class="u-align-center u-clearfix u-footer u-grey-80 u-footer" id="sec-bfdd"><div
class="u-clearfix u-sheet u-sheet-1">
      <p          class="u-small-text     u-text          u-text-variant          u-text-1">Banking
         ChatBot2022</p> </div></footer>
</body></html>
```

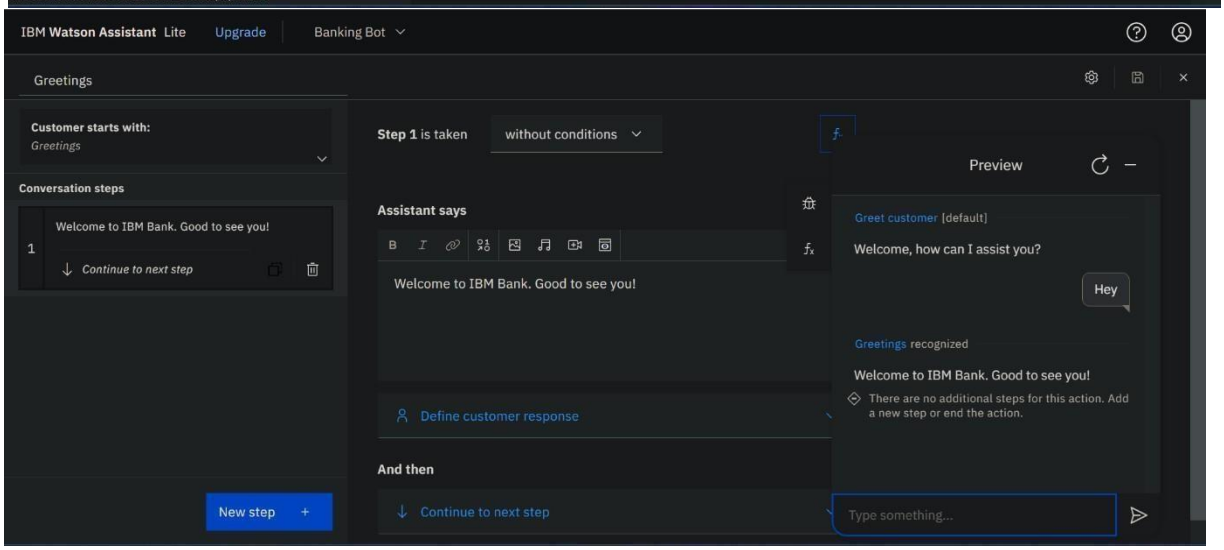
7.2 Feature 2

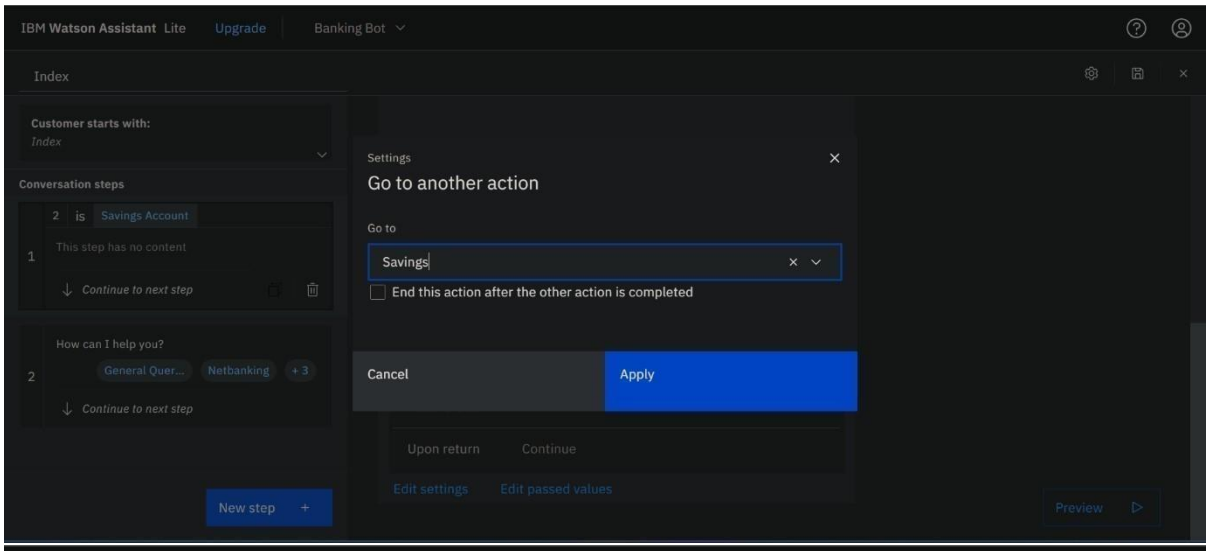
IBM CHATBOT:

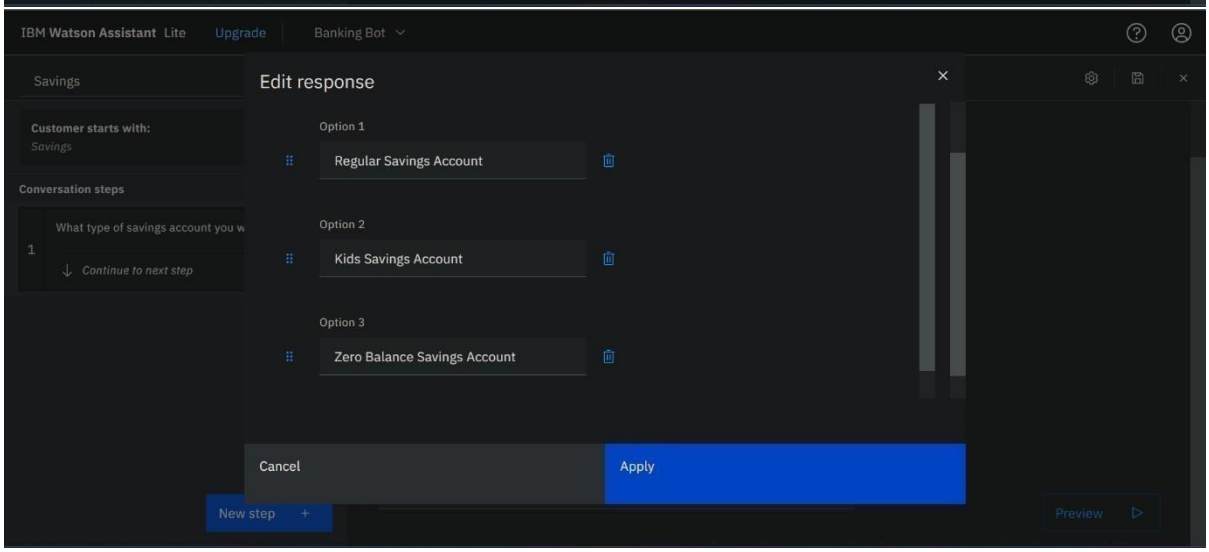
- Our chatbot is able to guide a customer to create a bank account.(Both current and savings account)
- Our chatbot is able to answer loan queries.
- Our chatbot is able to answer general banking queries.
- Our chatbot is able to answer queries regarding net banking.

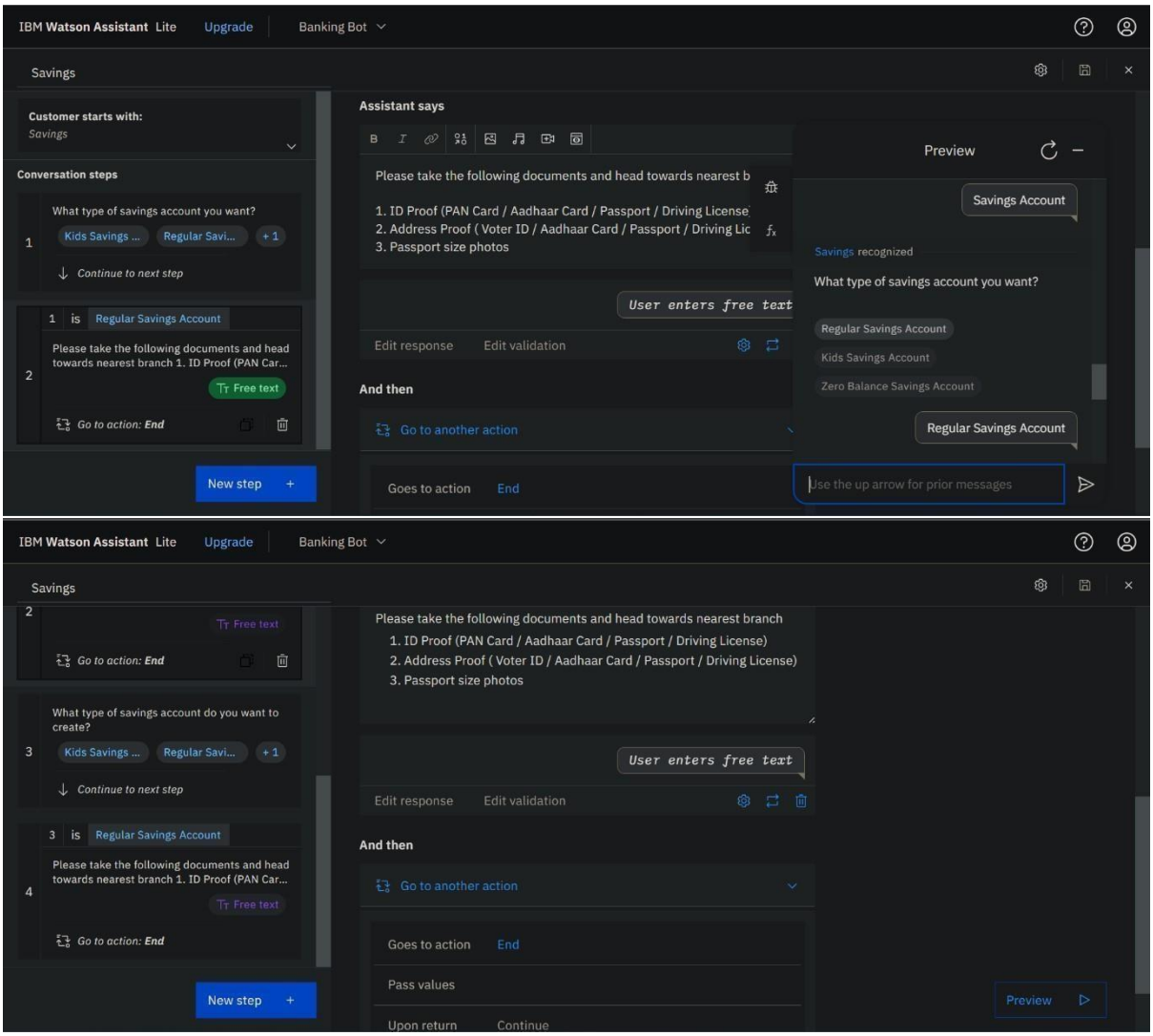

IBM Watson Assistant Lite
Upgrade
Banking Bot
Welcome to the new Watson Assistant
Back
Next
Customize your chat UI
Update the style to match your brand and your website. A developer can also add more advanced styling changes with code. Learn more
Restart conversation
Assistant's name as known by customers
Mr. Flexon
Primary color
#FFFFFF
Chat header
Secondary color
#3D3D3D
User message bubble
Accent color
#0354E9
Significant and interactive objects
Add an avatar image
IBM Watermark
Plus
Hi! I'm a virtual assistant. How can I help you today?
Example: Find nearby location
Example: Check account balance


IBM Watson Assistant Lite
Upgrade
Banking Bot
Home
Build
Actions
Preview
Deploy
Publish
Environments
Improve
Analyze
Integrations
Assistant settings
u're in the new Watson
citing changes in store for you
Take a tour
Easy to use
Now anyone can build a fully-functioning assistant without the usual heavy lift from a development team.
View documentation
New features
The new Watson Assistant is loaded with features that empower you to meet the complexity of customer needs.
See what's new
Hide details
us-south.assistant.watson.cloud.ibm.com/.../actions


IBM Watson Assistant Lite
Upgrade
Banking Bot
Greetings
Customer starts with:
Greetings
Conversation steps
1
Welcome to IBM Bank. Good to see you!
Continue to next step
Step 1 is taken
without conditions
Assistant says
Welcome to IBM Bank. Good to see you!
Define customer response
And then
Continue to next step
New step
Preview
Greet customer [default]
Welcome, how can I assist you?
Hey
Greetings recognized
Welcome to IBM Bank. Good to see you!
There are no additional steps for this action. Add a new step or end the action.
Type something...


IBM Watson Assistant Lite
Upgrade
Banking Bot
Index
Customer starts with:
Index
Conversation steps
2 is Savings Account
1
This step has no content
Continue to next step
How can I help you?
2
General Quer...
Netbanking
+ 3
Continue to next step
New step
Settings
Go to another action
Go to
Savings
End this action after the other action is completed
Cancel
Apply
Upon return
Continue
Edit settings
Edit passed values
Preview


IBM Watson Assistant Lite
Upgrade
Banking Bot
Savings
Customer starts with:
Savings
Conversation steps
What type of savings account you w
1
Continue to next step
New step
Edit response
Option 1
Regular Savings Account
Option 2
Kids Savings Account
Option 3
Zero Balance Savings Account
Cancel
Apply
Preview



8. TESTING 8.1 Test Cases

	Test Scenarios
1	Verify user is able to open and view chatbot UI
2	Verify user is able to interact with chatbot or not
3	Verify chatbot is able to respond to user queries immediately
4	Verify chatbot is able to provide options for user to choose various choices

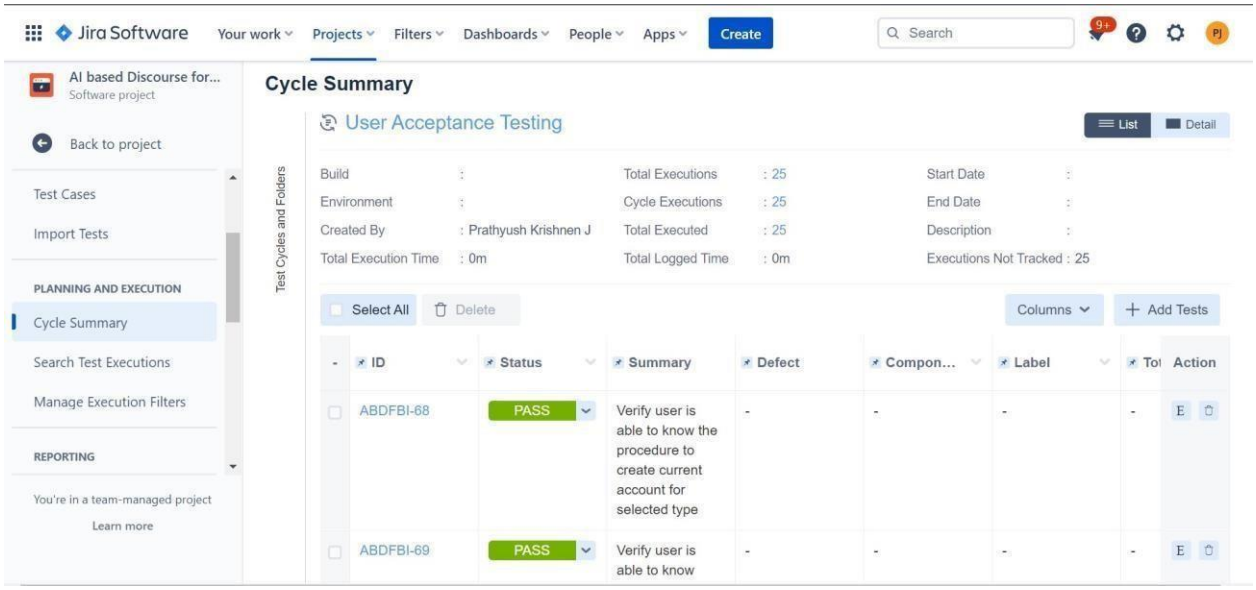
	Savings Account Related Actions
1	Verify user is able to select type of savings account
2	Verify user is able to know the procedure to create savings account for selected type
3	Verify user is check the minimum balance
4	Verify user is able to find interest rate
	Current Account Related Actions
1	Verify user is able to select type of company
2	Verify user is able to know the procedure to create current account for selected type
3	Verify user is able to know about zero balance current account
4	Verify user is able to know the procedure to close current account
	Loan Account Related Actions

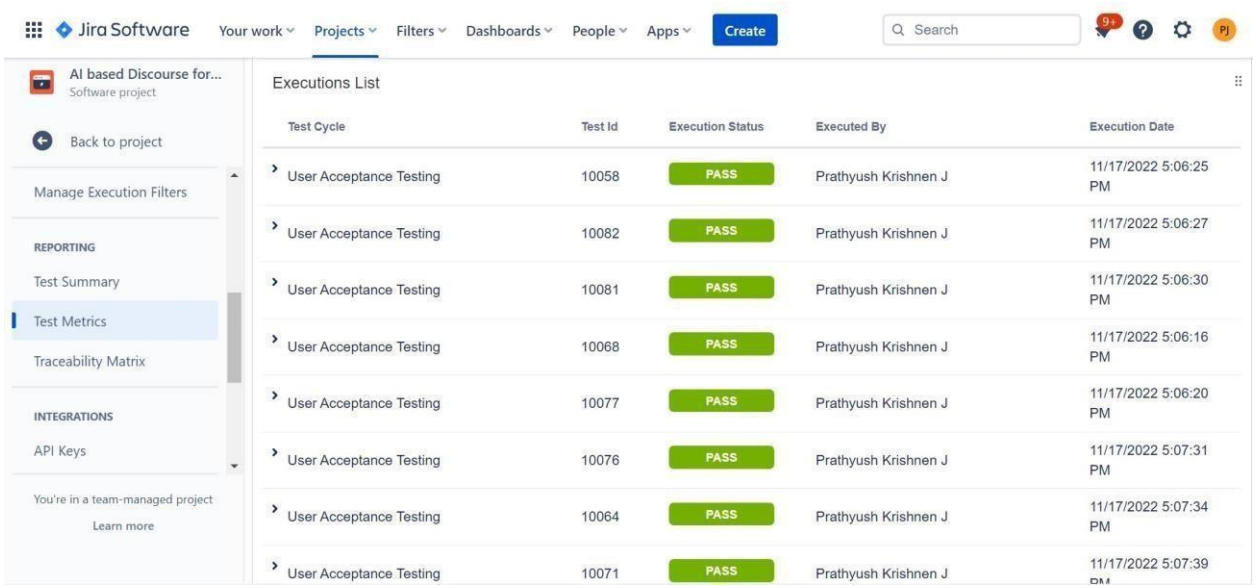
1	Verify user is able to choose options for selecting type of available loan policies
2	Verify user is able to know about available loan amounts
3	Verify user is able to check the loan status
4	Verify user is able to know about joint loan
	General Query Related Actions
1	Verify user is able to know about bank working days
2	Verify user is able to know about list of branches

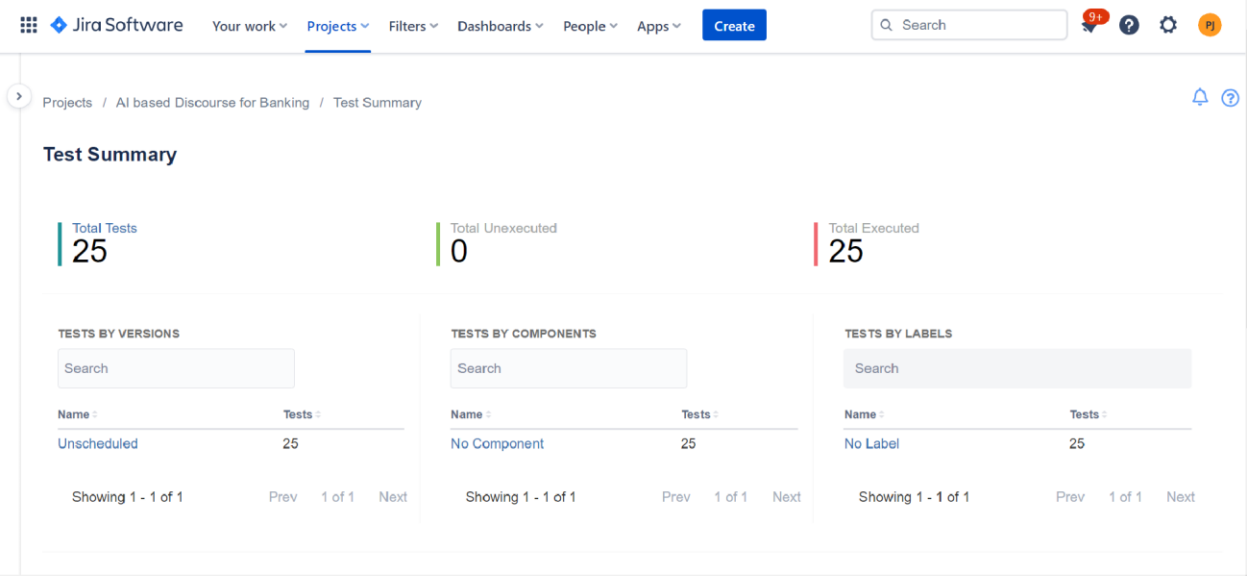
3	Verify user is able to find the nearest branch
4	Verify user is able to know about storage locker facility
5	Verify user is able to know about currency conversion facility
	Net banking Related Actions
1	Verify user is able to know the procedure to login netbanking account
2	Verify user is able to know the procedure to change netbanking password
3	Verify user is able to choose options for selecting type of fund transfers
4	Verify user is able to know about daily transaction limit

8.2 User Acceptance Testing

Test case ID	Feature Type	Component	Test Scenario	Pre-Requisite	Steps To Execute	Test Data	Expected Result	Actual Result	Status	Comments	TC for Automation(Y/N)	BUG ID	Executed By
Chatbot_TC_OO1	UI	Home Page	Verify user is able to open and view chatbot UI	None	1.Enter URL and click go 2.Click on chatbot icon 3.Verify chatbot UI displayed or not	URL link	Chatbot UI is able to be viewed by user	Working as expected	Pass	-	N	-	Adithya R
Chatbot_TC_OO2	Functional	Home Page	Verify user is able to interact with chatbot or not	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window	User query	User is able to interact with chatbot easily	Working as expected	Pass	-	N	-	Prathyush Krishnen J
Chatbot_TC_OO3	Functional	Home page	Verify chatbot is able to respond to user queries immediately	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter	User query	Chatbot is able to provide instant replies for user queries	Working as expected	Pass	-	N	-	Ramkumar K
Chatbot_TC_OO4	Functional	Home page	Verify chatbot is able to provide options for user to choose various choices	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter	User query	Chatbot is able to provide options for user to choose various choices	Working as expected	Pass	-	N	-	Abhishek B
Savings_TC_OO1	UI	Chatbot	Verify user is able to select type of savings account	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter 4.Select the desired option	User query	User is able to select type of savings account	Working as expected	Pass	-	N	-	Adithya R
Savings_TC_OO2	Functional	Chatbot	Verify user is able to know the procedure to create savings account for selected type	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter 4.Select the desired option	User query	User is able to know the steps to create savings account for selected type	Working as expected	Pass	-	N	-	Adithya R
Savings_TC_OO3	Functional	Chatbot	Verify user is check the minimum balance	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter 4.Select the desired option	User query	User is able to check the minimum balance	Working as expected	Pass	-	N	-	Adithya R
Savings_TC_OO4	Functional	Chatbot	Verify user is able to find interest rate	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter 4.Select the desired option	User query	User is able to find interest rate	Working as expected	Pass	-	N	-	Adithya R
Current_TC_OO1	UI	Chatbot	Verify user is able to select type of company	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter 4.Select the desired option	User query	User is able to select type of company	Working as expected	Pass	-	N	-	Prathyush Krishnen J
Current_TC_OO2	Functional	Chatbot	Verify user is able to know the procedure to create current account for selected type	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter 4.Select the desired option	User query	User is able to know the steps to create current account for selected type	Working as expected	Pass	-	N	-	Prathyush Krishnen J
Current_TC_OO3	Functional	Chatbot	Verify user is able to know about zero balance current account	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter 4.Select the desired option	User query	User is able to know about zero balance current account	Working as expected	Pass	-	N	-	Prathyush Krishnen J
Current_TC_OO4	Functional	Chatbot	Verify user is able to know the procedure to close current account	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter 4.Select the desired option	User query	User is able to know the procedure to close current account	Working as expected	Pass	-	N	-	Prathyush Krishnen J
Loan_TC_OO3	Functional	Chatbot	Verify user is able to check the loan status	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter 4.Select the desired option	User query	User is able to check the loan status	Working as expected	Pass	-	N	-	Ramkumar K
Loan_TC_OO4	Functional	Chatbot	Verify user is able to know about joint loan	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter 4.Select the desired option	User query	User is able to know about joint loan	Working as expected	Pass	-	N	-	Ramkumar K
General_TC_OO1	Functional	Chatbot	Verify user is able to know about bank working days	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter 4.Select the desired option	User query	User is able to know about bank working days	Working as expected	Pass	-	N	-	Abhishek B
General_TC_OO2	Functional	Chatbot	Verify user is able to know about list of branches	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter 4.Select the desired option	User query	User is able to know about list of branches	Working as expected	Pass	-	N	-	Abhishek B
General_TC_OO3	Functional	Chatbot	Verify user is able to find the nearest branch	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter 4.Select the desired option	User query	User is able to find the nearest branch	Working as expected	Pass	-	N	-	Abhishek B
General_TC_OO4	Functional	Chatbot	Verify user is able to know about storage locker facility	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter 4.Select the desired option	User query	User is able to know about storage locker facility	Working as expected	Pass	-	N	-	Abhishek B
General_TC_OO5	Functional	Chatbot	Verify user is able to know about currency conversion facility	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter 4.Select the desired option	User query	User is able to know about currency conversion facility	Working as expected	Pass	-	N	-	Abhishek B
Netbank_TC_OO1	Functional	Chatbot	Verify user is able to know the procedure to login netbanking account	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter 4.Select the desired option	User query	User is able to know the steps to login netbanking account	Working as expected	Pass	-	N	-	Adithya R
Netbank_TC_OO2	Functional	Chatbot	Verify user is able to know the procedure to change netbanking password	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter 4.Select the desired option	User query	User is able to know the steps to change netbanking password	Working as expected	Pass	-	N	-	Prathyush Krishnen J
Netbank_TC_OO3	UI	Chatbot	Verify user is able to choose options for selecting type of fund transfers	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter 4.Select the desired option	User query	User is able to choose options for selecting type of fund transfers	Working as expected	Pass	-	N	-	Ramkumar K
Netbank_TC_OO4	Functional	Chatbot	Verify user is able to know about daily transaction limit	Chatbot is accessible	1.Click on chatbot icon 2.Type the query in the chat window 3. Press enter 4.Select the desired option	User query	User is able to know about daily transaction limit	Working as expected	Pass	-	N	-	Abhishek B


Jira Software
Your work
Projects
Filters
Dashboards
People
Apps
Create
Search
AI based Discourse for...
Software project
Back to project
Test Cases
Import Tests
PLANNING AND EXECUTION
Cycle Summary
Search Test Executions
Manage Execution Filters
REPORTING
You're in a team-managed project
Learn more
Cycle Summary
User Acceptance Testing
List
Detail
Test Cycles and Folders
Build :
Environment :
Created By : Prathyush Krishnen J
Total Execution Time : 0m
Total Executions : 25
Cycle Executions : 25
Total Executed : 25
Total Logged Time : 0m
Start Date :
End Date :
Description :
Executions Not Tracked : 25
Select All
Delete
Columns
Add Tests
ID
Status
Summary
Defect
Compon...
Label
Action
ABDFBI-68
PASS
Verify user is able to know the procedure to create current account for selected type
ABDFBI-69
PASS
Verify user is able to know


Jira Software
Your work
Projects
Filters
Dashboards
People
Apps
Create
Search
AI based Discourse for...
Software project
Back to project
Manage Execution Filters
REPORTING
Test Summary
Test Metrics
Traceability Matrix
INTEGRATIONS
API Keys
You're in a team-managed project
Learn more
Executions List
Test Cycle
Test Id
Execution Status
Executed By
Execution Date
User Acceptance Testing 10058 PASS Prathyush Krishnen J 11/17/2022 5:06:25 PM
User Acceptance Testing 10082 PASS Prathyush Krishnen J 11/17/2022 5:06:27 PM
User Acceptance Testing 10081 PASS Prathyush Krishnen J 11/17/2022 5:06:30 PM
User Acceptance Testing 10068 PASS Prathyush Krishnen J 11/17/2022 5:06:16 PM
User Acceptance Testing 10077 PASS Prathyush Krishnen J 11/17/2022 5:06:20 PM
User Acceptance Testing 10076 PASS Prathyush Krishnen J 11/17/2022 5:07:31 PM
User Acceptance Testing 10064 PASS Prathyush Krishnen J 11/17/2022 5:07:34 PM
User Acceptance Testing 10071 PASS Prathyush Krishnen J 11/17/2022 5:07:39


Jira Software
Your work
Projects
Filters
Dashboards
People
Apps
Create
Search
Projects / AI based Discourse for Banking / Test Summary
Test Summary
Total Tests
25
Total Unexecuted
0
Total Executed
25
TESTS BY VERSIONS
Search
Name
Tests
Unscheduled 25
Showing 1 - 1 of 1 Prev 1 of 1 Next
TESTS BY COMPONENTS
Search
Name
Tests
No Component 25
Showing 1 - 1 of 1 Prev 1 of 1 Next
TESTS BY LABELS
Search
Name
Tests
No Label 25
Showing 1 - 1 of 1 Prev 1 of 1 Next

Test Report

1. Purpose of Document

The purpose of this document is to briefly explain the test coverage and open issues of the AI based Discourse for Banking Industry project at the time of the release to User Acceptance Testing (UAT).

2. 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

3. 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

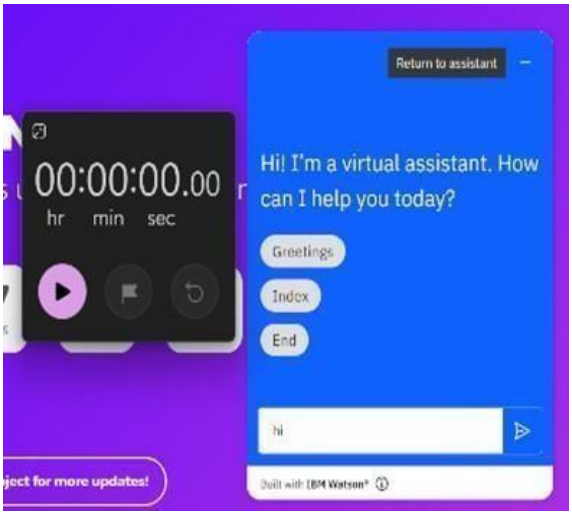
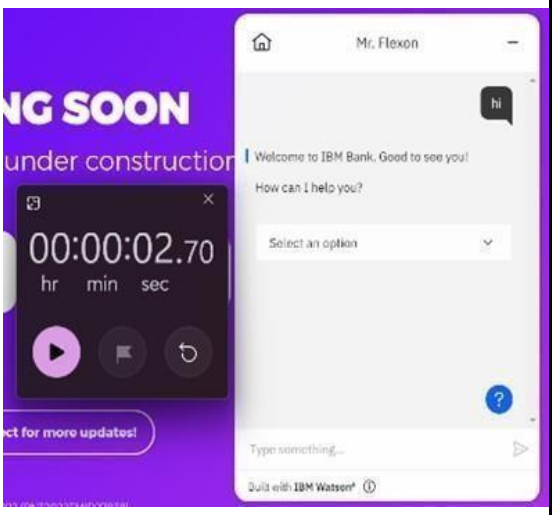
Version Control	0	0	0	0

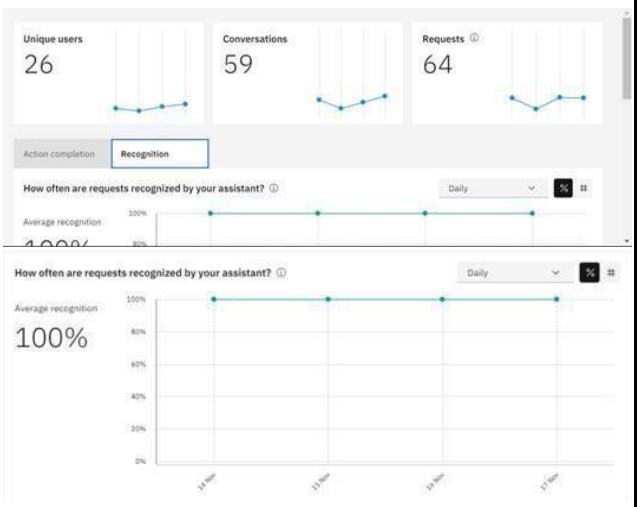
9. RESULTS

9.1 Performance Metrics

Model Performance Testing:

S.NO.	PARAMETER	VALUES	SCREENSHOT

1.	Model Summary	The chatbot is used by the user to interact and select queries that are populated based on frequently asked questions of banking customers. There can be multiple instances of a single chatbot serving different users at the same time. It quickly responds with expected answers to frequently asked customer queries. It can be scaled as per the requirements of the bank to include answers to queries related to any new feature or service introduced by the bank.	 

2.	Accuracy	Training Accuracy – 100% Validation Accuracy – 100%	

10. ADVANTAGES AND DISADVANTAGES

Advantages

1. **Round-the-clock support:** Chatbots provide 24/7 client support, so existing and potential customers can try and solve their banking problems after work hours and on weekends. This ultimately also leads to better customer experience.
2. **Enhanced productivity of bank personnel**: Not all clients' problems require the help of a staff member. Artificial intelligence may successfully deal with minor issues leaving only the most urgent and complicated cases for the human approach.
3. **More convenient mode of communication**: Chatbots may combine various functionalities that would make them convenient for customers of different age groups.

Disadvantages

1. **Internet Issues:** Chatbots will not work without the internet.If there is a network problem,chatbots may stop working and will not respond to client queries.
2. **Requirement of technical knowledge**: Users who make use of chatbots must know how to use chatbots.Otherwise, it is difficult to do interaction with chatbot.
3. **Providing unexpected answers**: Chatbots in some cases may get confused due to prolonged user inputs and may provide irrelevant answers.
4. **Inability to interpret multiple queries**: Chatbots can't understand multiple questions at a time if a user continuously posts queries to it. So it is necessary for a user to post queries one-by-one.

11. CONCLUSION

Chatbots developed using AI are able to answer any frequently asked banking queries on account creation, loan, net banking, other services etc. It addresses the queries of customers immediately and effectively in a cost efficient manner. It eliminates the need for a massive customer care workforce and even reduces the workload of the bank employees whose efforts can be used elsewhere. AI Chatbots provides 24/7 service to clear all customer queries and guide them through all the banking processes. It can be scaled as per the requirements of the bank to include answers to queries related to any new feature or service introduced by the bank. In order to overcome the user satisfaction issues associated with banking services, chatbot will provide personal and efficient communication between the user and the bank. It is built to be the overall virtual assistant that can facilitate customers to ask banking-related questions without visiting the bank or calling up customer service centers as well as providing them with relevant suggestions.

12. FUTURE SCOPE

Chatbots help people obtain the information they need and solve their problems. The technology sector has seen a massive increase in AI development, which has led to the creation of chatbots that can help users easily find the information they need online. AI Chatbots effectively create a strong brand image. They will continue to evolve and play an important role in customer service for businesses.

1. Bots for Internal Business Communications

Chatbots can be used for various purposes, including addressing common problems, communicating with employees, and finishing HR-related tasks and transactional functions. Chatbots for websites are acting as a guide to new employees through company protocols, recording answers for screen questions, and assisting with the onboarding process for new employees. Chatbots can save time for IT desk agents and help with more complicated issues. 2. Content Marketing

Chatbots can communicate with the target market by speaking with them in complete sentences with a natural and easy-going conversational flow. Some markets use these bots to serve customer service and retail, amongst others. Chatbots can segment consumers for future marketing campaigns. This can be incredibly useful for creating more accurate target marketing. Based on the information from dialogue with chatbots, marketers can use this information to help with personalizing brand content.

3. Social Media

Chatbots have better customer interaction rates on social media. Chatbot interactions increase consumer confidence in a brand or business. Customers are informed with daily or weekly announcements about deals, events, and promotions via social media.With time, it is used for voicing opinions, ordering products and services, offering reviews, and even getting in touch with businesses.

4. Use of AI in contact centers

AI chatbots without human involvement can handle simple requests such as changing a password, requesting a balance, scheduling an appointment, etc.

13. APPENDIX

Source Code

Build PYTHON FLASK Code: **APP.PY** from flask import

Flask,render_template app=Flask(__name__) @app.route('/')

def bank():

return
render_template('Home.html')

@app.route('/about') def about(): return render_template('About.html') @app.route('/contact')

def contact():

return render_template('Contact.html')

if __name__ =='__main__': app.run(debug =

True)

Build HTML and CSS Code

HOME.HTML

```
<!DOCTYPE html>
<html style="font-size: 16px;" lang="en"><head>
    <meta name="viewport" content="width=device-width, initial-scale=1.0">   <meta
    charset="utf-8">
```

```
    <meta name="keywords" content="">
    <meta name="description" content="">
    <title>Home</title>
    <link rel="stylesheet" href="static/css/nicepage.css" media="screen">
<link rel="stylesheet" href="static/css/Home.css" media="screen">
    <script class="u-script" type="text/javascript" src="static/js/jquery.js" defer=""></script>
    <script class="u-script" type="text/javascript" src="static/js/nicepage.js" defer=""></script>
    <meta name="generator" content="Nicepage 4.21.12, nicepage.com">
                                        <link id="u-theme-google-font" rel="stylesheet" href="https://fonts.googleapis.com/css?family=Roboto:100,100i,300,300i,400,400i,500,500i,700,700i,900,900i|Open+Sans:300,300i,400,400i,500,500i,600,600i,700,700i,800,800i">
                                        <link id="u-page-google-font" rel="stylesheet" href="https://fonts.googleapis.com/css?family=Raleway:100,100i,200,200i,300,300i,400,400i,500,500i,600,600i,700,700i,800,800i,900,900i">
    <script type="application/ld+json">{
                    "@context": "http://schema.org",
                    "@type": "Organization",
                    "name": "Site1"
}</script>
    <meta name="theme-color" content="#478ac9">
    <meta property="og:title" content="Home">
    <meta property="og:description" content="">
    <meta property="og:type" content="website">  </head>
  <body class="u-body u-xl-mode" data-lang="en"><header class="u-clearfix u-header u-header" id="sec-7119"><div class="u-clearfix u-sheet u-sheet-1">
        <nav class="u-menu u-menu-dropdown u-offcanvas u-menu-1">
          <div class="menu-collapse" style="font-size: 1rem; letter-spacing: 0px;">
                <a class="u-button-style u-custom-left-right-menu-spacing u-custom-padding-bottom u-custom-top-bottom-menu-spacing u-nav-link u-text-active-palette-1-base u-text-hoverpalette2base" href="#">
                                        <svg  class="u-svg-link" viewBox="0  0  24  24"><use xmlns:xlink="http://www.w3.org/1999/xlink" xlink:href="#menu-hamburger"></use></svg>
              <svg class="u-svg-content" version="1.1" id="menu-hamburger" viewBox="0 0 16 16" x="0px"  y="0px"  xmlns:xlink="http://www.w3.org/1999/xlink" xmlns="http://www.w3.org/2000/svg"><g><rect  y="1" width="16" height="2"></rect><rect  y="7" width="16" height="2"></rect><rect  y="13" width="16" height="2"></rect>
</g></svg>
            </a>
          </div>
          <div class="u-nav-container">
              <ul class="u-nav u-unstyled u-nav-1"><li class="u-nav-item"><a class="u-button-style u-nav-link u-text-active-palette-1-base u-text-hover-palette-2-base" href="{{ url_for('bank') }}" style="padding: 10px 22px;">Home</a>
```

```
</li><li class="u-nav-item"><a class="u-button-style u-nav-link u-text-active-palette-1-base
utext-hover-palette-2-base" href="{{ url_for('about') }}" style="padding: 10px
22px;">About</a>
</li><li class="u-nav-item"><a class="u-button-style u-nav-link u-text-activepalette-1-base utext-
hover-palette-2-base" href="{{ url_for('contact') }}"  style="padding: 10px 22px;">Contact</a>
</li></ul>
        </div>
        <div class="u-nav-container-collapse">
              <div class="u-black u-container-style u-inner-container-layout u-opacity u-opacity-95
u-sidenav">
            <div class="u-inner-container-layout u-sidenav-overflow">
              <div class="u-menu-close"></div>
                          <ul class="u-align-center u-nav u-popupmenu-items u-unstyled u-nav-2"><li
class="u-nav-item"><a          class="u-button-style u-nav-link"      href="{{          url_for('bank')
}}">Home</a>
</li><li          class="u-nav-item"><a          class="u-button-style u-nav-link"      href="{{
url_for('about') }}">About</a>
</li><li  class="u-nav-item"><a  class="u-button-style  u-nav-link"  href="{{  url_for('contact')
}}">Contact</a>
</li></ul>
            </div>
          </div>
          <div class="u-black u-menu-overlay u-opacity u-opacity-70"></div> </div>
      </nav>
      <div class="u-shape u-shape-svg u-text-palette-1-base u-shape-1">
                  <svg class="u-svg-link" preserveAspectRatio="none" viewBox="0 0 160 160"
style=""><use  xmlns:xlink="http://www.w3.org/1999/xlink"
xlink:href="#svgdea9"></use></svg>
                          <svg class="u-svg-content"           viewBox="0 0 160 160" x="0px" y="0px"
id="svg-dea9"><path d="M157.5,72.3l-74-70.9c-1.9-1.9-
51.96.9,0l74.1,71C0.9,74,0,76.1,0,78.3c0,4.6,3.7,8.3,8.3,8.
3H20V150c0,5.5,4.5,10,10,10

h28.3c2.8,0,5-2.2,5-5v-43.3c0-0.9,0.7-1.7,1.7-1.7h30c0.9,0,1.7,0.8,1.7,1.7V155c0,2.8,2.2,5,5,5H
130c5.5,0,10-4.5,10-10V86.7h11.7 c4.6,0,8.3-3.7,8.3-
      8.3C160,76.1,159.1,74,157.5,72.3z"></path></svg> </div>
      <div class="u-shape u-shape-svg u-text-palette-1-base u-shape-2">
                  <svg class="u-svg-link" preserveAspectRatio="none" viewBox="0 0 148 160"
style=""><use  xmlns:xlink="http://www.w3.org/1999/xlink"
xlink:href="#svg8c3b"></use></svg>
                          <svg class="u-svg-content"           viewBox="0 0 148 160" x="0px" y="0px"
id="svg-8c3b"><path d="M104,12.1c16.5,16.2,16.5,42.4,0,58.6s-43.3,16.2-59.8,0s-16.5-42.4,0-
58.6S87.5-4,104,12.1              M138.9,106.9                                    c-38.6-25.5-91.2-25.5-

129.7,0C3.5,110.7,0,117.1,0,124.1V160h148v-35.9C148.1,117.1,144.6,11
```

```
0.7,138.9,106.9L138.9,106.9z"></path></svg>
                </div><span class="u-file-icon u-icon u-icon-1"><img src="static/img/3357329.png"
alt=""></span>
      </div></header>
        <section class="u-clearfix u-image u-valign-bottom-xs u-section-1" id="carousel_9de0"
data-image-width="1980" data-image-height="1513">
      <div class="u-clearfix u-layout-wrap u-layout-wrap-1">
        <div class="u-layout">
          <div class="u-layout-row">
                          <div class="u-align-left u-container-style u-layout-cell u-left-cell u-size-29
u-layout-cell-1">
            <div class="u-container-layout u-container-layout-1">
                              <div class="u-border-6 u-border-palette-4-base u-line u-line-horizontal
u-line-1"></div>
              <h1 class="u-custom-font u-font-raleway u-text u-text-palette-4-base u-title u-text-1">
AI based discourse for Banking Industry </h1>
                                    <p  class="u-text  u-text-palette-4-base  u-text-2">  Team
ID:&amp;nbsp;PNT2022TMID27838<span style="font-size: 1.5rem;"></span>
              <br> Team Leader:&amp;nbsp;Prathyush Krishnen J<br>Team
Members:&amp;nbsp;Abhishek B, Adithya R, Ramkumar K<br> </p>  </div>
            </div>
            <div class="u-container-style u-layout-cell u-right-cell u-size-31 u-layout-cell-2">
              <div class="u-container-layout u-container-layout-2">
                <div class="u-preserve-proportions u-shape u-shape-circle u-white u-shape-1"></div>
                        <img class="u-image u-image-contain u-image-default u-preserve-proportions
u-image-1"  src="static/img/istockphoto-1010001882-612x612-removebg-preview.png"  alt=""
            dataimage-width="500" data-image-height="500"> </div>  </div>   </div>
          </div>   </div>
        </section>
        <--IBM Chatbot Integration:-->
          <script>  window.watsonAssistantChatOptions  =  {  integrationID:  "ffa94b22-
          82fd424dbaf005322655ecf4", // The ID of this integration.
          region: "us-south", // The region your integration is hosted in.
            serviceInstanceID: "e5ada103-ff26-4155-9a22-6cd24e8a71e0", // 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>
          <footer class="u-align-center u-clearfix u-footer u-grey-80 u-footer" id="sec-bfdd"><div
        class="u-clearfix u-sheet u-sheet-1">
```

```
      <p class="u-small-text u-text u-text-variant u-text-1">Banking ChatBot2022</p>
</div></footer>  </body></html>
```

HOME.CSS

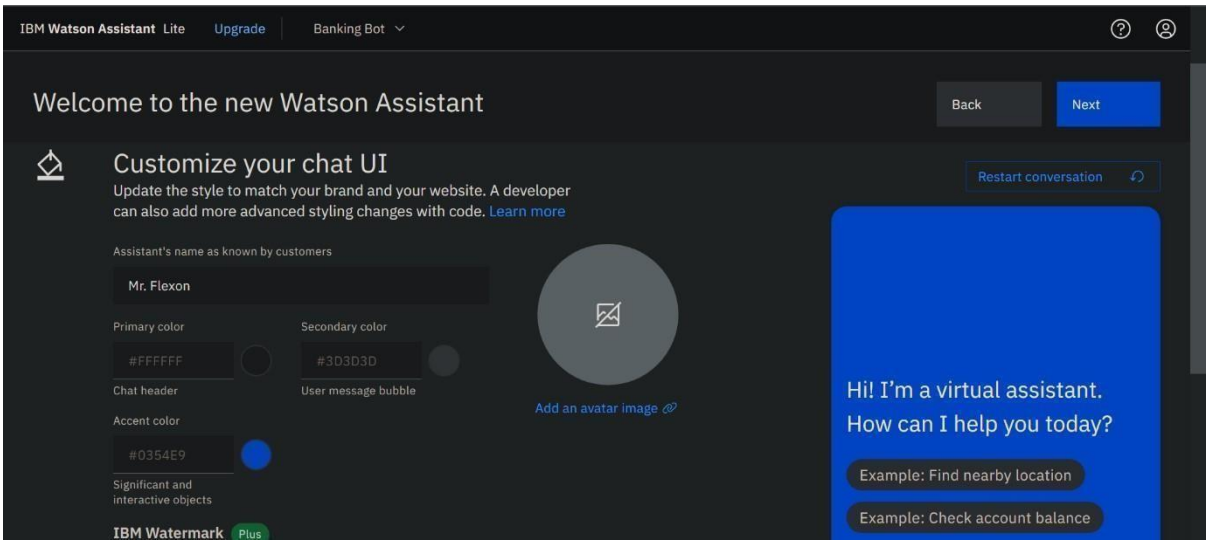
```
.u-section-1 { background-image:
  url("/static/img/bg.jpg");
  background-position: 50% 50%; min-
  height: 100vh;
}
.u-section-1 .u-layout-wrap-1 { width:
  calc(((100% - 1140px) / 2) + 1140px); margin: -
  18px 0 0 auto;
}
.u-section-1 .u-layout-cell-1 { minheight: 723px;
}
.u-section-1 .u-container-layout-1 { padding:
  30px 29px;
}
.u-section-1 .u-line-1 { width: 111px;
  height: 6px; transformorigin: left center
  0px; margin:
  111px auto 0 11px;
}
.u-section-1 .u-text-1 { font-size:
  3.75rem; fontweight: 700; lineheight:
  1; margin: 20px 17px 0
  11px;
}
.u-section-1 .u-text-2 { fontstyle:
  italic; margin: 23px  17px
  0 11px;
```

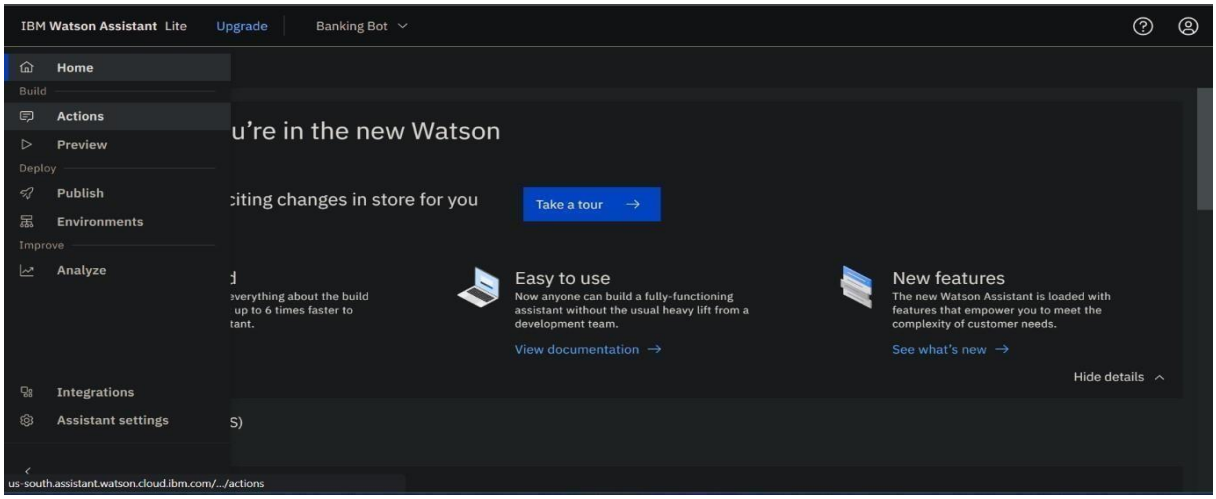
```
}
.u-section-1 .u-layout-cell-2 { backgroundposition:
  50% 50%; min-height: 723px;
}
.u-section-1 .u-container-layout-2 {  padding:
  30px;
}
.u-section-1 .u-shape-1 {
  width: 23px; height: 23px;
  margin: 279px 183px 0 auto;
}
.u-section-1 .u-image-1 {
  width: 443px; height: 444px;
  margin: -240px 0
  0 auto;
}
@media (max-width: 1199px) {
  .u-section-1  .u-layout-wrap-1  {    width:  calc(((100%  -
    940px) / 2) + 940px);
  }
  .u-section-1 .u-layout-cell-1 { minheight:
    596px;
  }
  .u-section-1 .u-text-1 { marginright:
    0;
  }
  .u-section-1 .u-text-2 { marginright:
    0;
  }
  .u-section-1 .u-layout-cell-2 { minheight:
    596px;
  }
  .u-section-1 .u-container-layout-2 { padding-left:
    27px; paddingright:
    27px;
  }
  .u-section-1 .u-shape-1 { margintop:
    296px;
  }
```

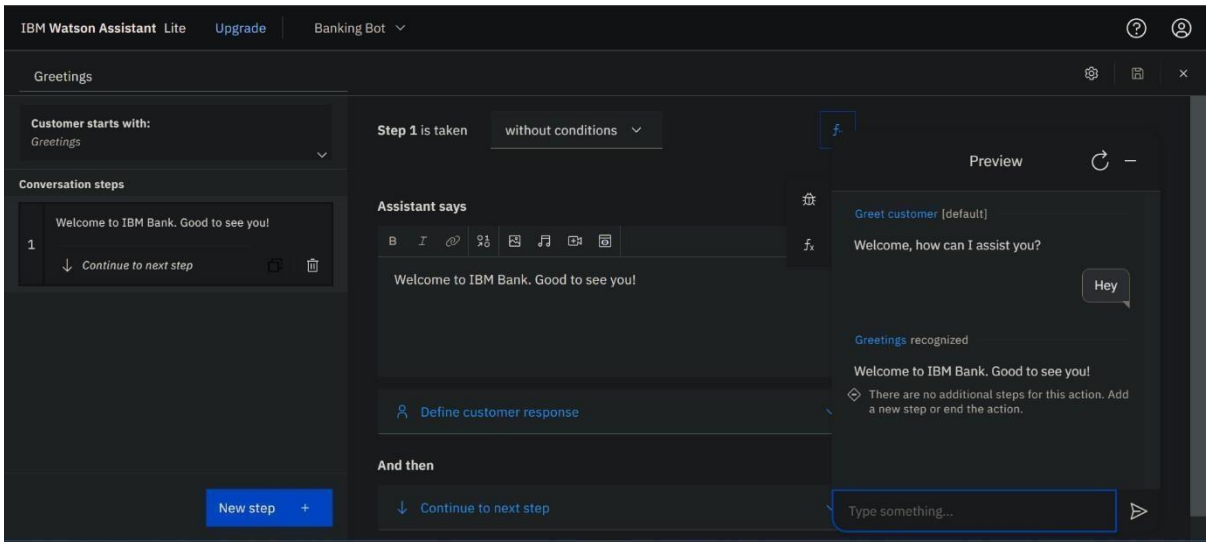
```
}
  .u-section-1 .u-image-1 { margintop: -249px;
  }
@media (max-width: 991px) {
  .u-section-1  .u-layout-wrap-1  {    width:  calc(((100%  -
    720px) / 2) + 720px);
  }
  .u-section-1 .u-layout-cell-1 { minheight:
    100px;
  }
  .u-section-1 .u-text-1 { fontsize:
    3rem;
  }
  .u-section-1 .u-layout-cell-2 { minheight:
    525px;
  }
  .u-section-1 .u-shape-1 { margintop:
    285px;
  }
  .u-section-1 .u-image-1 { width:
    319px; height:
    319px; margin-top: -
    238px;
  }   }
@media (max-width: 767px) {
  .u-section-1  .u-layout-wrap-1  {    width:  calc(((100%  -
    540px) / 2) + 540px);
  }
  .u-section-1 .u-container-layout-1 {
    padding-top: 50px; paddingright:
    60px; paddingleft:
    10px;
  }
  .u-section-1 .u-text-1 { font-size:
    3.75rem;
  }
  .u-section-1 .u-layout-cell-2 { minheight:
    663px;
  }
```

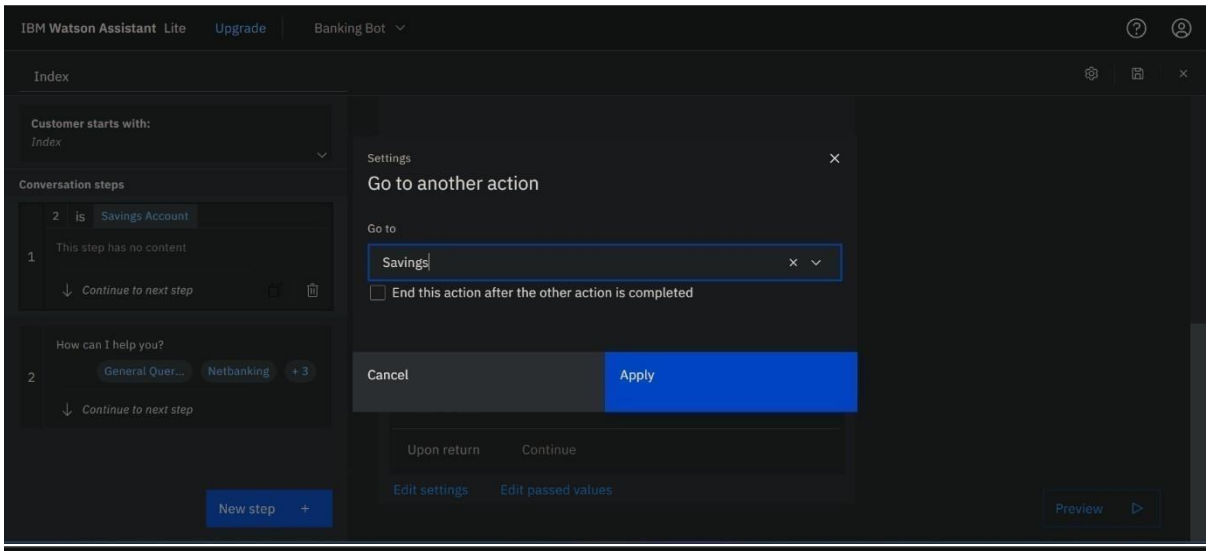
```
}
  .u-section-1 .u-container-layout-2 { padding-left:
    10px; paddingright:
    10px;
  }
@media (max-width: 575px) { .u-section-1 { min-height:
   907px;
  }
  .u-section-1 .u-layout-wrap-1 { width:
    390px; margin-right:
    auto;
  }
  .u-section-1 .u-container-layout-1 { paddingright: 50px;
  }
  .u-section-1 .u-text-1 { fontsize:
    3rem;
  }
  .u-section-1 .u-layout-cell-2 { minheight:
    417px;
  }
}
```

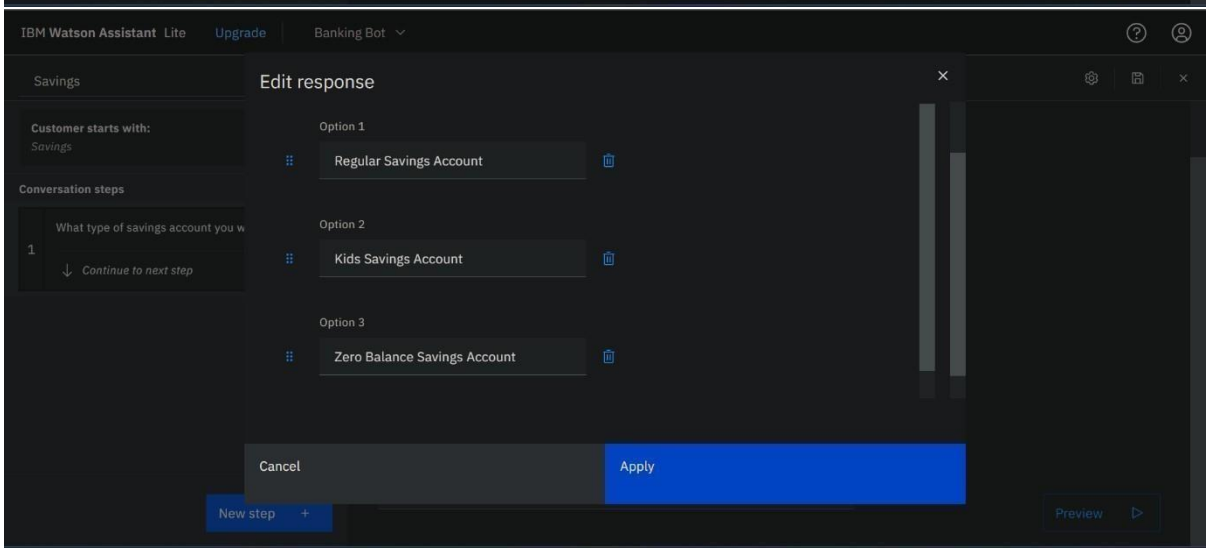
IBM CHATBOT:

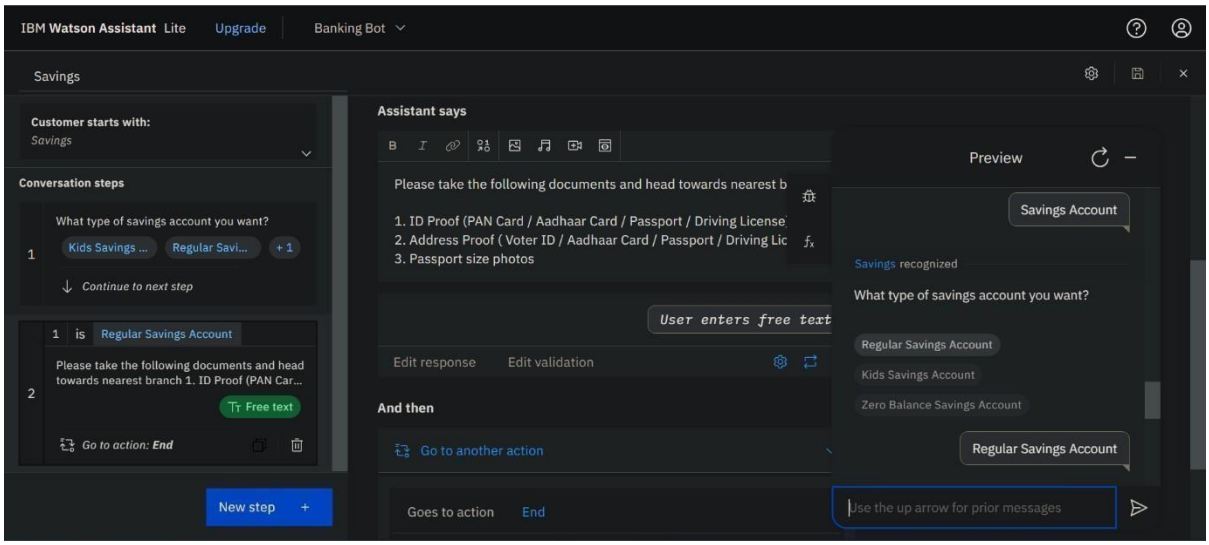


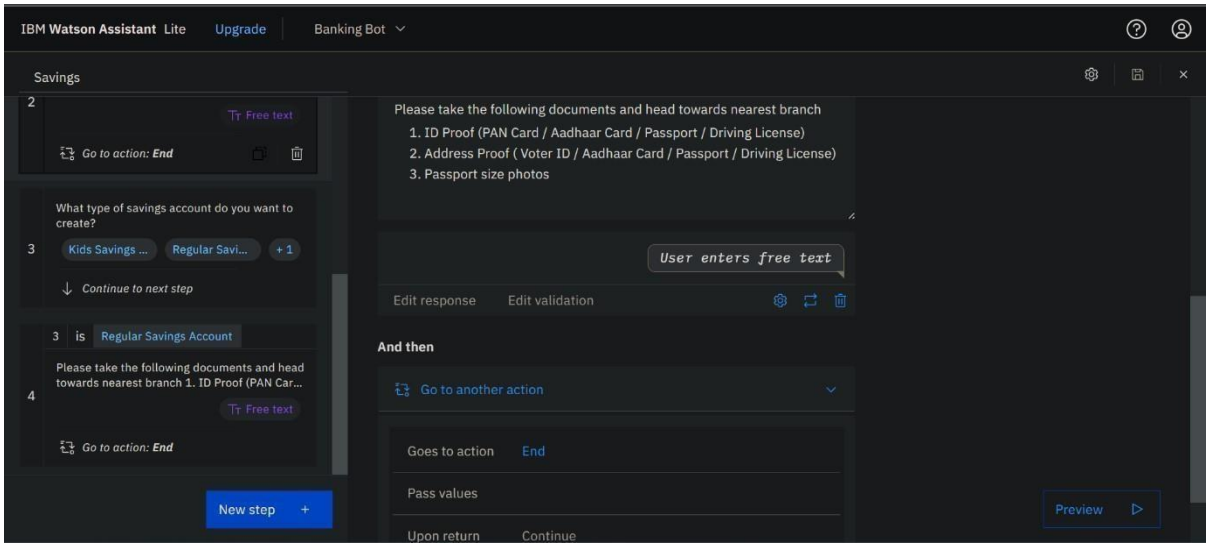

IBM Watson Assistant Lite
Upgrade
Banking Bot
Home
Build
Actions
Preview
Deploy
Publish
Environments
Improve
Analyze
Integrations
Assistant settings
u're in the new Watson
citing changes in store for you
Take a tour
everything about the build
up to 6 times faster to
tant.
Easy to use
Now anyone can build a fully-functioning assistant without the usual heavy lift from a development team.
View documentation
New features
The new Watson Assistant is loaded with features that empower you to meet the complexity of customer needs.
See what's new
Hide details
us-south.assistant.watson.cloud.ibm.com/.../actions

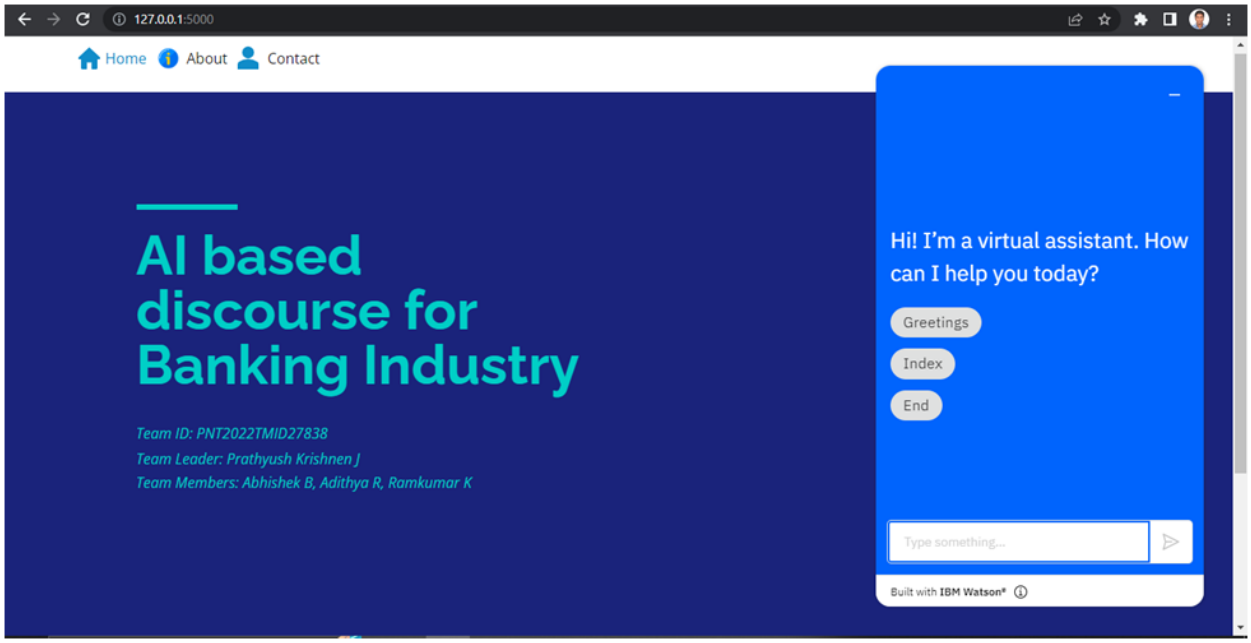

IBM Watson Assistant Lite
Upgrade
Banking Bot
Greetings
Customer starts with:
Greetings
Conversation steps
1
Welcome to IBM Bank. Good to see you!
Continue to next step
New step
Step 1 is taken
without conditions
Assistant says
Welcome to IBM Bank. Good to see you!
Define customer response
And then
Continue to next step
Preview
Greet customer [default]
Welcome, how can I assist you?
Hey
Greetings recognized
Welcome to IBM Bank. Good to see you!
There are no additional steps for this action. Add a new step or end the action.
Type something...

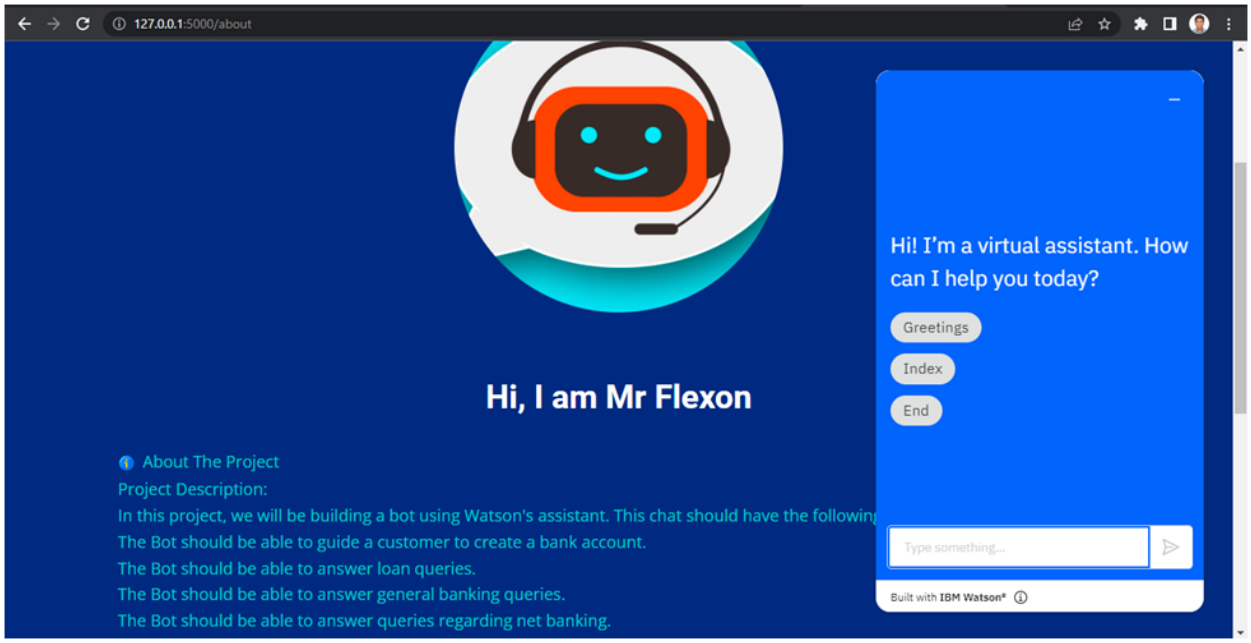

IBM Watson Assistant Lite
Upgrade
Banking Bot
Index
Customer starts with:
Index
Conversation steps
2
is
Savings Account
1
This step has no content
Continue to next step
How can I help you?
2
General Quer...
Netbanking
+ 3
Continue to next step
New step
Settings
Go to another action
Go to
Savings
End this action after the other action is completed
Cancel
Apply
Upon return
Continue
Edit settings
Edit passed values
Preview

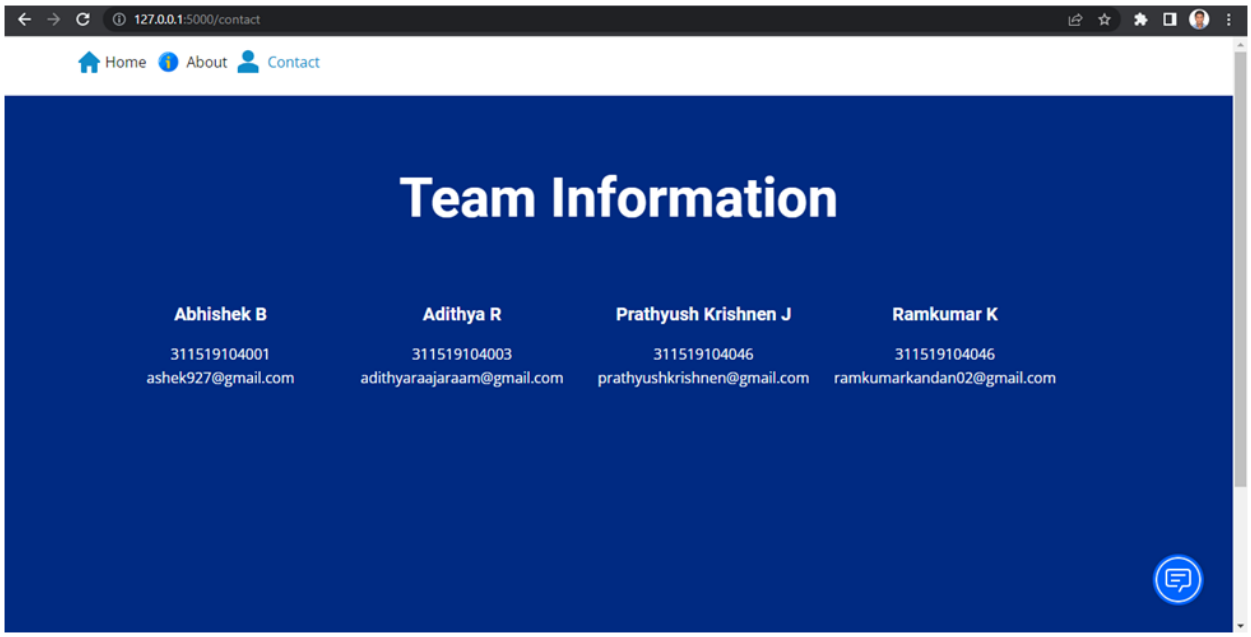

IBM Watson Assistant Lite
Upgrade
Banking Bot
Savings
Customer starts with:
Savings
Conversation steps
1
What type of savings account you w
Continue to next step
New step
Edit response
Option 1
Regular Savings Account
Option 2
Kids Savings Account
Option 3
Zero Balance Savings Account
Cancel
Apply
Preview

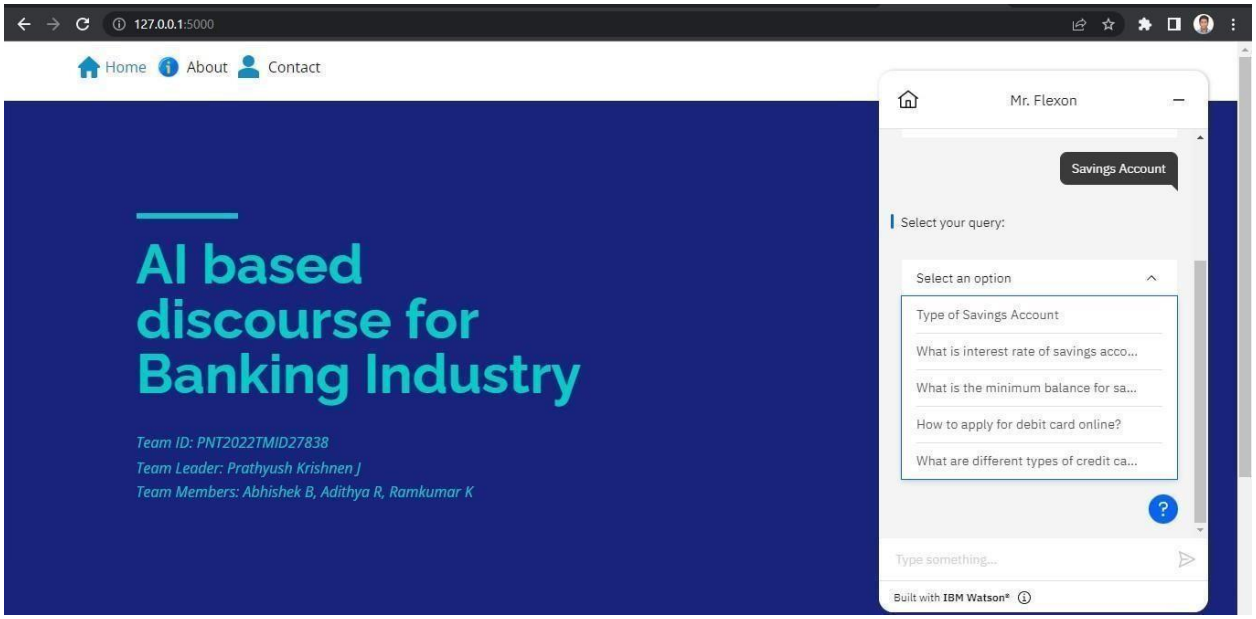

IBM Watson Assistant Lite
Upgrade
Banking Bot
Savings
Customer starts with:
Savings
Conversation steps
What type of savings account you want?
Kids Savings ...
Regular Savi...
+ 1
Continue to next step
1 is Regular Savings Account
Please take the following documents and head towards nearest branch 1. ID Proof (PAN Car...
Free text
Go to action: End
New step
Assistant says
Please take the following documents and head towards nearest b
1. ID Proof (PAN Card / Aadhaar Card / Passport / Driving License
2. Address Proof (Voter ID / Aadhaar Card / Passport / Driving Lic
3. Passport size photos
User enters free text
Edit response
Edit validation
And then
Go to another action
Goes to action
End
Preview
Savings Account
Savings recognized
What type of savings account you want?
Regular Savings Account
Kids Savings Account
Zero Balance Savings Account
Regular Savings Account
Use the up arrow for prior messages

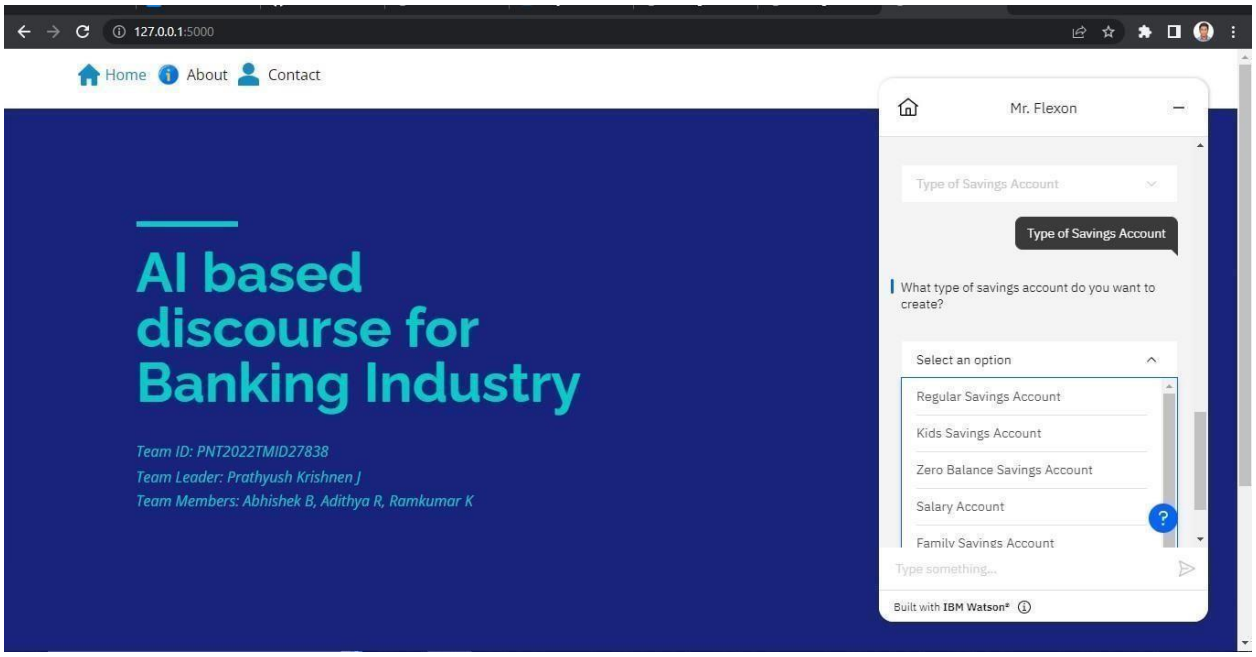

IBM Watson Assistant Lite
Upgrade
Banking Bot
Savings
Free text
Go to action: End
What type of savings account do you want to create?
Kids Savings ...
Regular Savi...
+ 1
Continue to next step
3 is Regular Savings Account
Please take the following documents and head towards nearest branch 1. ID Proof (PAN Car...
Free text
Go to action: End
New step
Please take the following documents and head towards nearest branch
1. ID Proof (PAN Card / Aadhaar Card / Passport / Driving License)
2. Address Proof (Voter ID / Aadhaar Card / Passport / Driving License)
3. Passport size photos
User enters free text
Edit response
Edit validation
And then
Go to another action
Goes to action
End
Pass values
Upon return
Continue
Preview

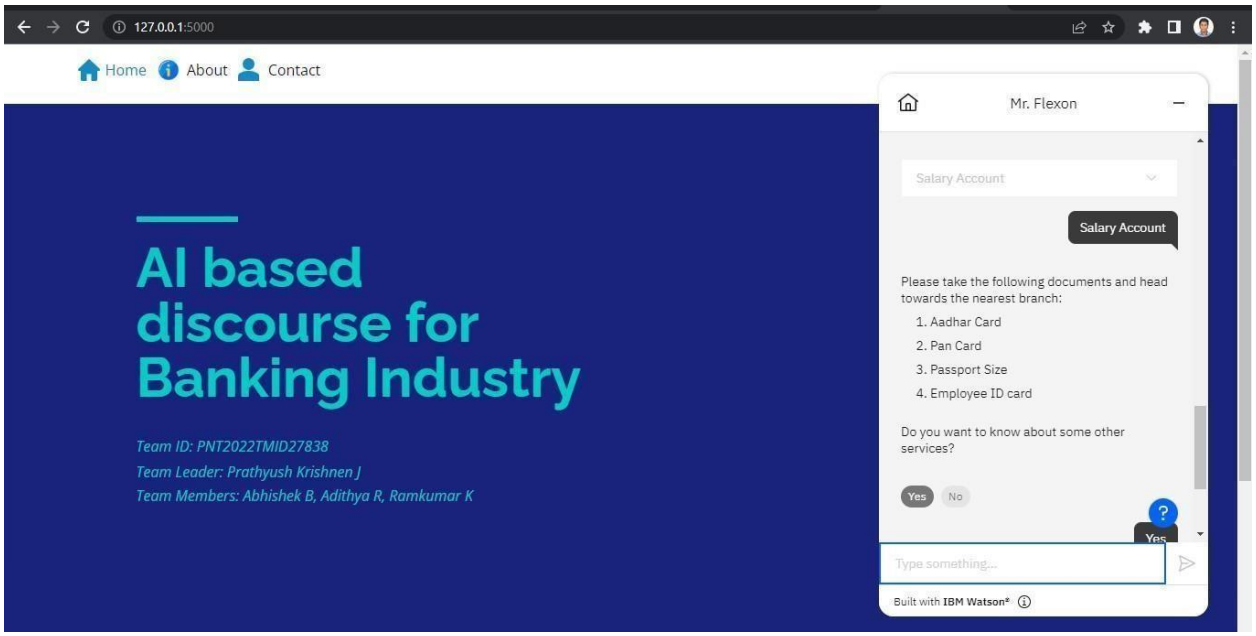

127.0.0.1:5000
Home
About
Contact
AI based discourse for Banking Industry
Team ID: PNT2022TMID27838
Team Leader: Prathyush Krishnen J
Team Members: Abhishek B, Adithya R, Ramkumar K
Hi! I'm a virtual assistant. How can I help you today?
Greetings
Index
End
Type something...
Built with IBM Watson®

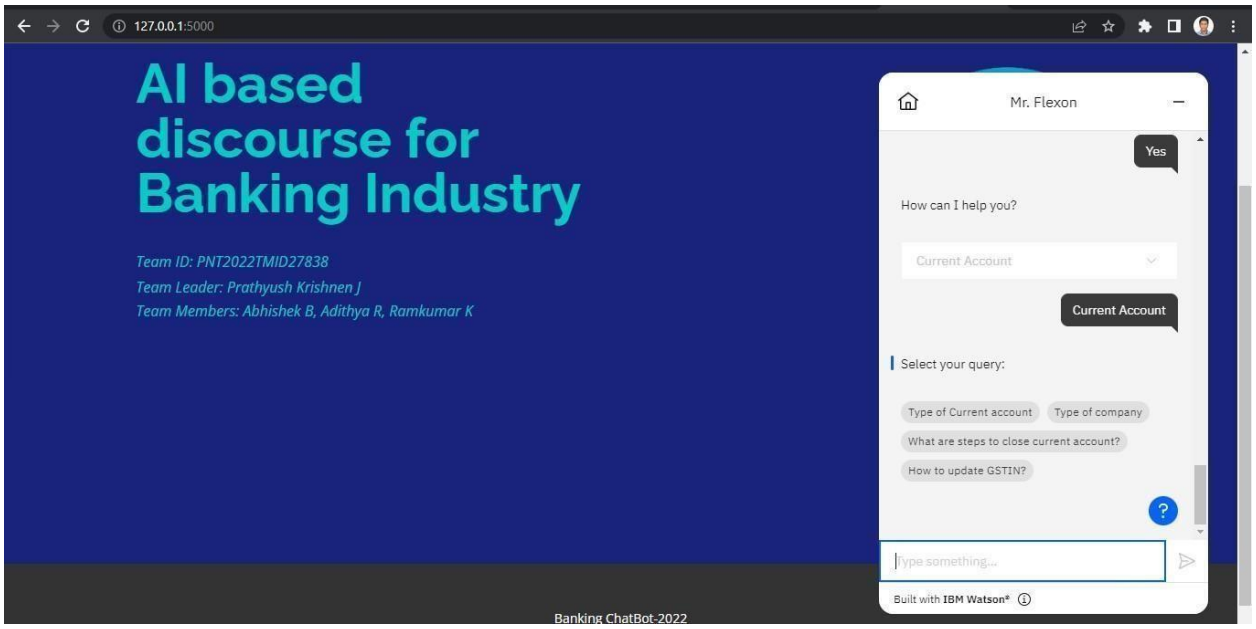

127.0.0.1:5000/about
Hi, I am Mr Flexon
About The Project
Project Description:
In this project, we will be building a bot using Watson's assistant. This chat should have the following
The Bot should be able to guide a customer to create a bank account.
The Bot should be able to answer loan queries.
The Bot should be able to answer general banking queries.
The Bot should be able to answer queries regarding net banking.
Hi! I'm a virtual assistant. How can I help you today?
Greetings
Index
End
Type something...
Built with IBM Watson®


127.0.0.1:5000/contact
Home
About
Contact
Team Information
Abhishek B
311519104001
ashek927@gmail.com
Adithya R
311519104003
adithyaraajaraam@gmail.com
Prathyush Krishnen J
311519104046
prathyushkrishnen@gmail.com
Ramkumar K
311519104046
ramkumarkandan02@gmail.com


127.0.0.1:5000
Home
About
Contact
AI based discourse for Banking Industry
Team ID: PNT2022TMID27838
Team Leader: Prathyush Krishnen J
Team Members: Abhishek B, Adithya R, Ramkumar K
Mr. Flexon
Savings Account
Select your query:
Select an option
Type of Savings Account
What is interest rate of savings acco...
What is the minimum balance for sa...
How to apply for debit card online?
What are different types of credit ca...
Type something...
Built with IBM Watson®


127.0.0.1:5000
Home
About
Contact
AI based discourse for Banking Industry
Team ID: PNT2022TMID27838
Team Leader: Prathyush Krishnen J
Team Members: Abhishek B, Adithya R, Ramkumar K
Mr. Flexon
Type of Savings Account
Type of Savings Account
What type of savings account do you want to create?
Select an option
Regular Savings Account
Kids Savings Account
Zero Balance Savings Account
Salary Account
Family Savings Account
Type something...
Built with IBM Watson®


127.0.0.1:5000
Home
About
Contact
AI based discourse for Banking Industry
Team ID: PNT2022TMID27838
Team Leader: Prathyush Krishnen J
Team Members: Abhishek B, Adithya R, Ramkumar K
Mr. Flexon
Salary Account
Salary Account
Please take the following documents and head towards the nearest branch:
1. Aadhar Card
2. Pan Card
3. Passport Size
4. Employee ID card
Do you want to know about some other services?
Yes
No
Yes
Type something...
Built with IBM Watson®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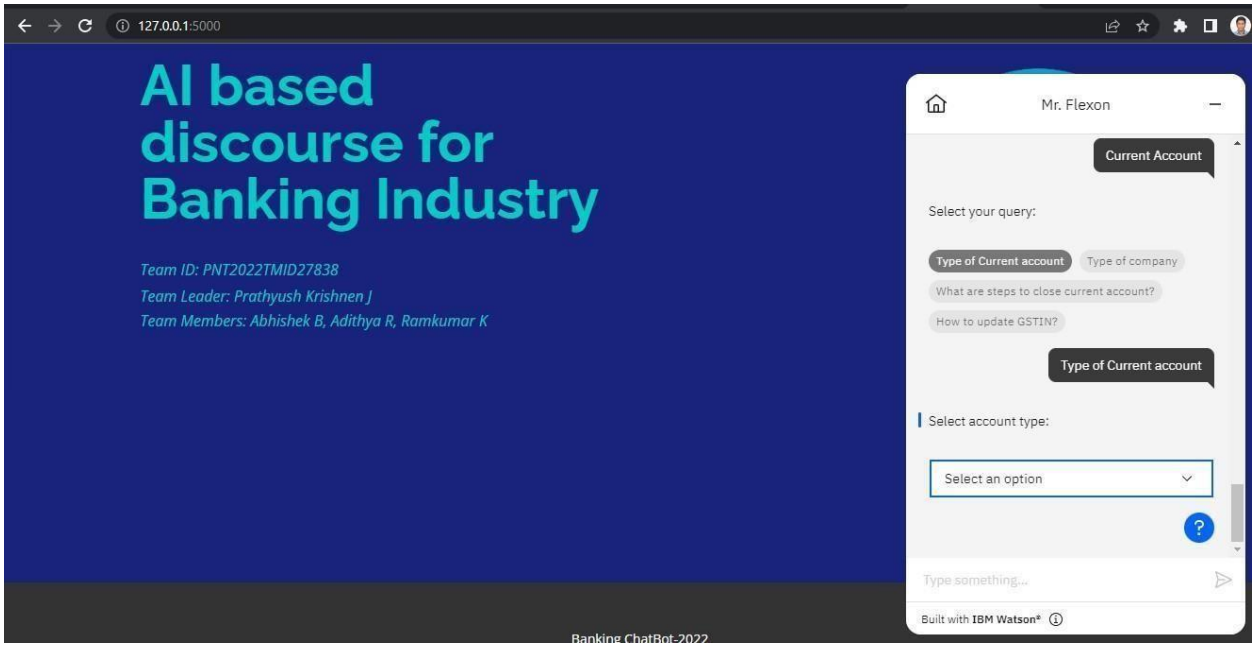
AI based discourse for Banking Industry
Team ID: PNT2022TMID27838
Team Leader: Prathyush Krishnen J
Team Members: Abhishek B, Adithya R, Ramkumar K
Mr. Flexon
Yes
How can I help you?
Current Account
Current Account
Select your query:
Type of Current account
Type of company
What are steps to close current account?
How to update GSTIN?
Type something...
Built with IBM Watson®
Banking ChatBot-2022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AI based discourse for Banking Industry
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Mr. Flexon
Current Account
Select your query:
Type of Current account
Type of company
What are steps to close current account?
How to update GSTIN?
Type of Current account
Select account type:
Select an option
Type something...
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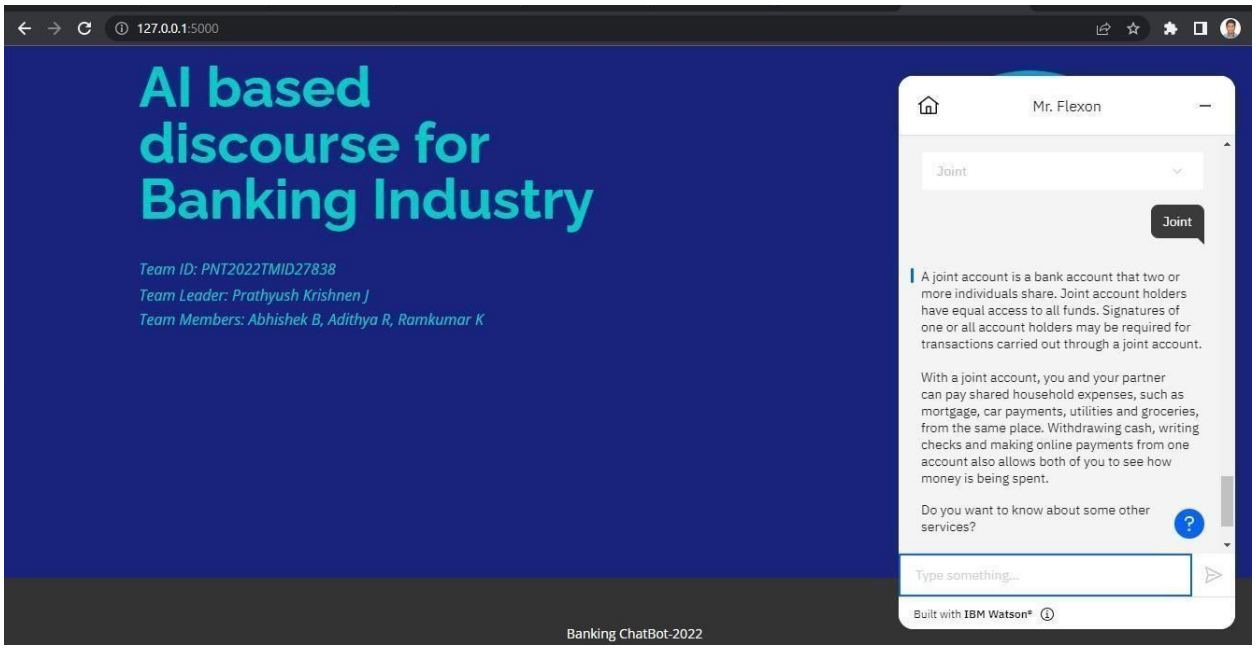
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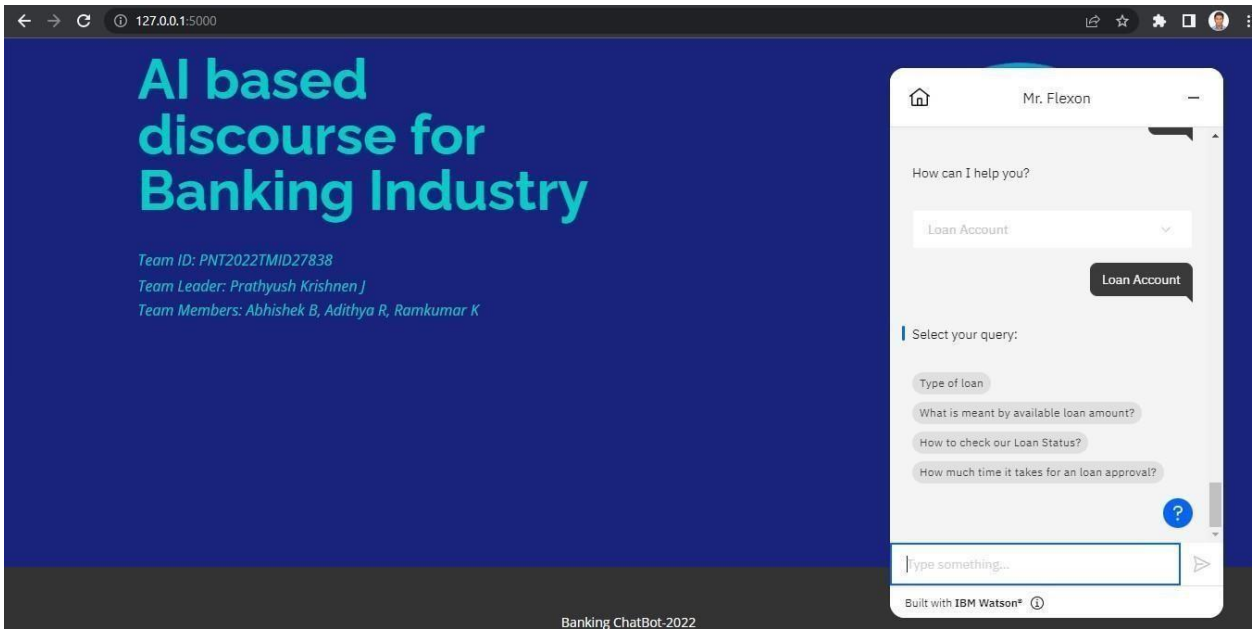
Joint
Joint
A joint account is a bank account that two or more individuals share. Joint account holders have equal access to all funds. Signatures of one or all account holders may be required for transactions carried out through a joint account.
With a joint account, you and your partner can pay shared household expenses, such as mortgage, car payments, utilities and groceries, from the same place. Withdrawing cash, writing checks and making online payments from one account also allows both of you to see how money is being spent.
Do you want to know about some other services?
Type something...
Built with IBM Watson®
Banking ChatBot-2022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Mr. Flexon
How can I help you?
Loan Account
Loan Account
Select your query:
Type of loan
What is meant by available loan amount?
How to check our Loan Status?
How much time it takes for an loan approval?
Type something...
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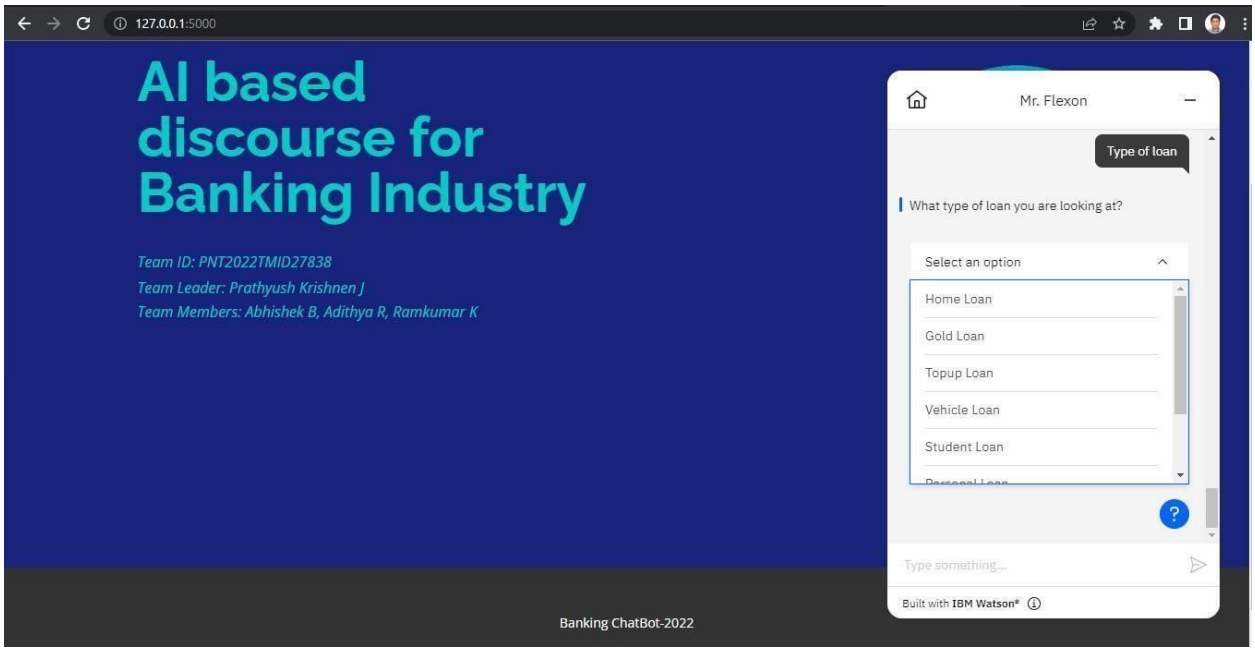
Banking ChatBot-2022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Mr. Flexon
Type of loan
What type of loan you are looking at?
Select an option
Home Loan
Gold Loan
Topup Loan
Vehicle Loan
Student Loan
Type something...
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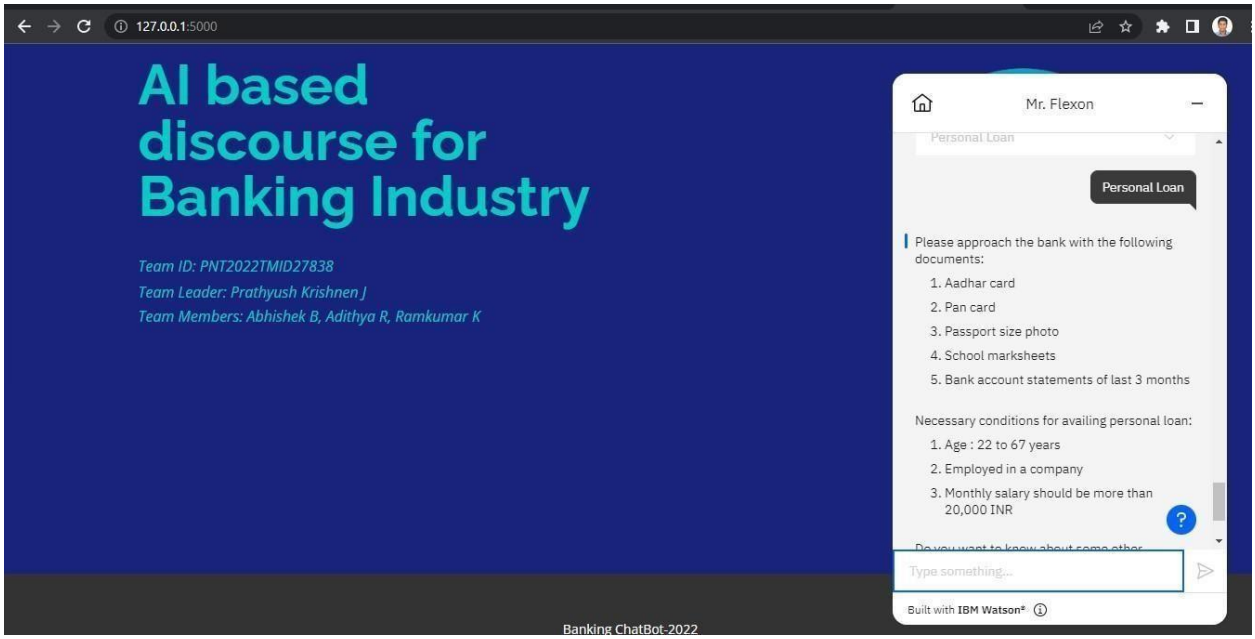
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Mr. Flexon
Personal Loan
Please approach the bank with the following documents:
1. Aadhar card
2. Pan card
3. Passport size photo
4. School marksheets
5. Bank account statements of last 3 months
Necessary conditions for availing personal loan:
1. Age : 22 to 67 years
2. Employed in a company
3. Monthly salary should be more than 20,000 INR
Type something...
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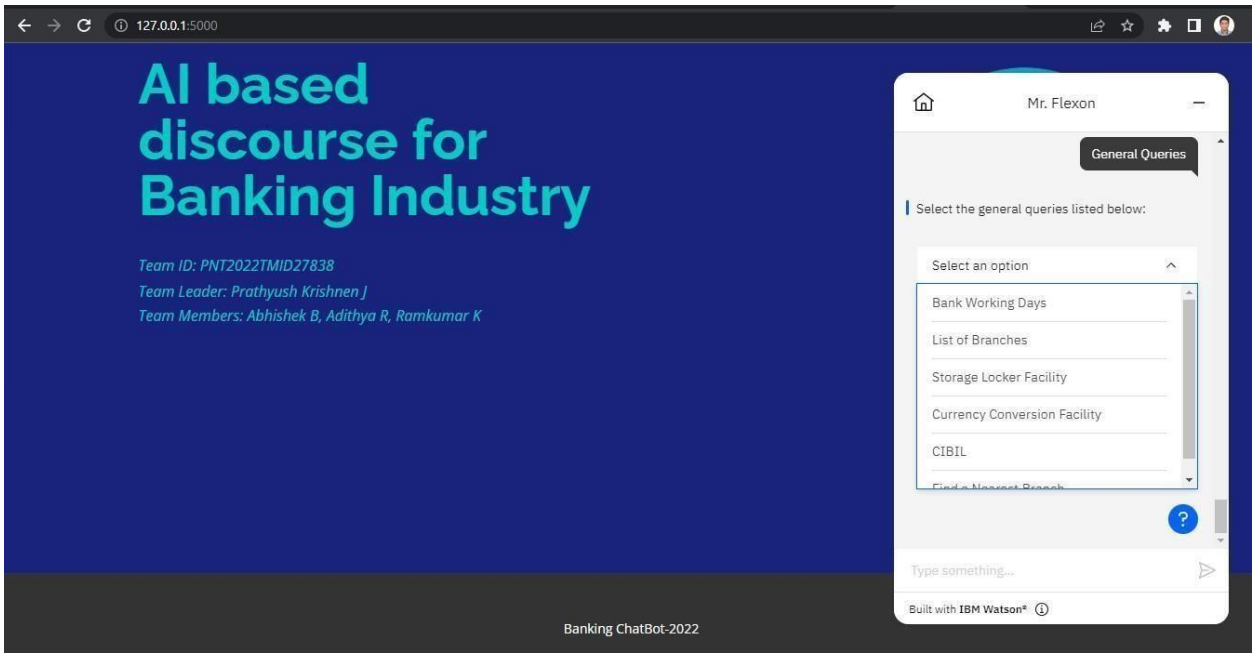
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Mr. Flexon
General Queries
Select the general queries listed below:
Select an option
Bank Working Days
List of Branches
Storage Locker Facility
Currency Conversion Facility
CIBIL
Type something...
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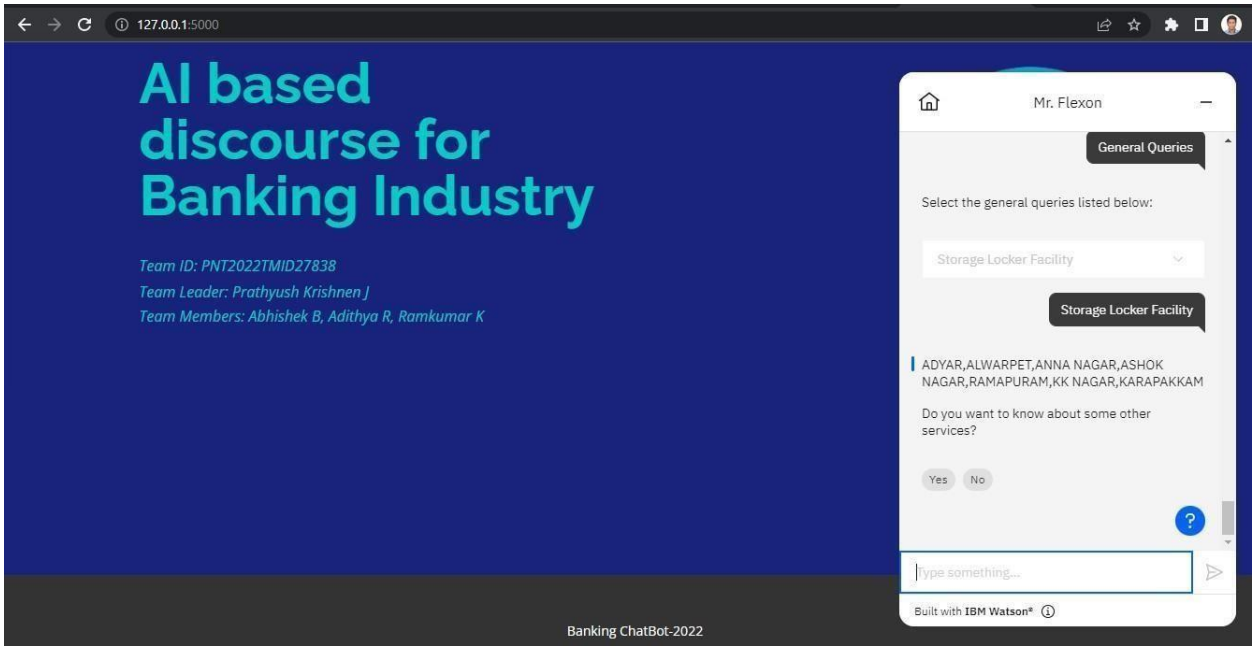
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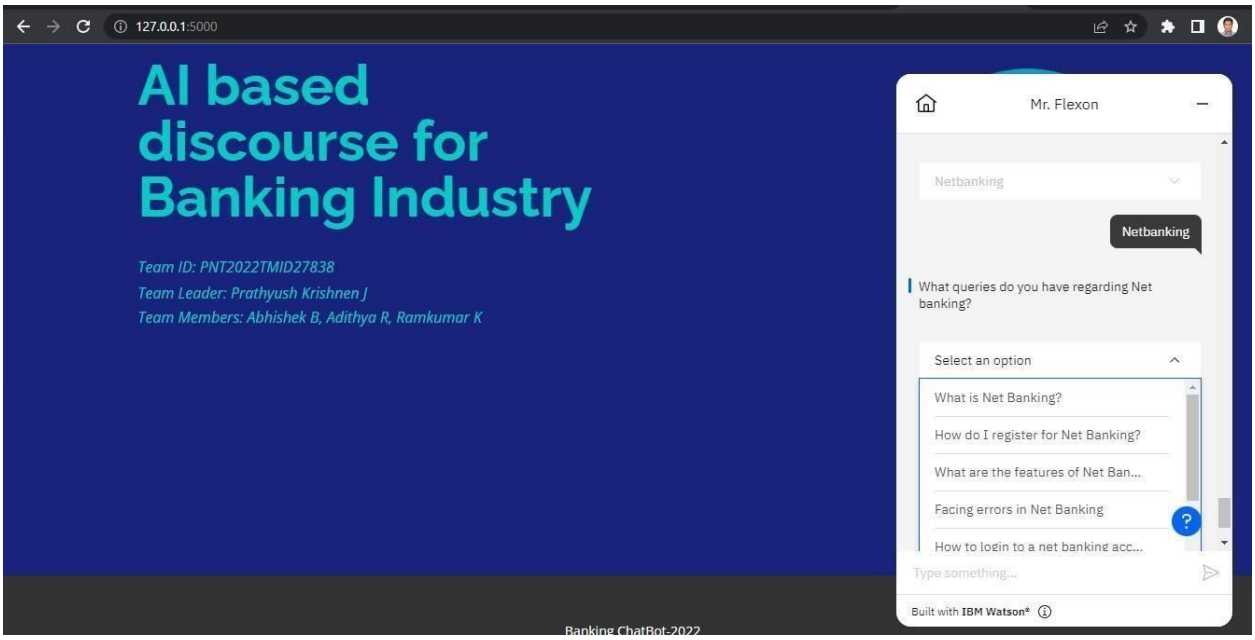
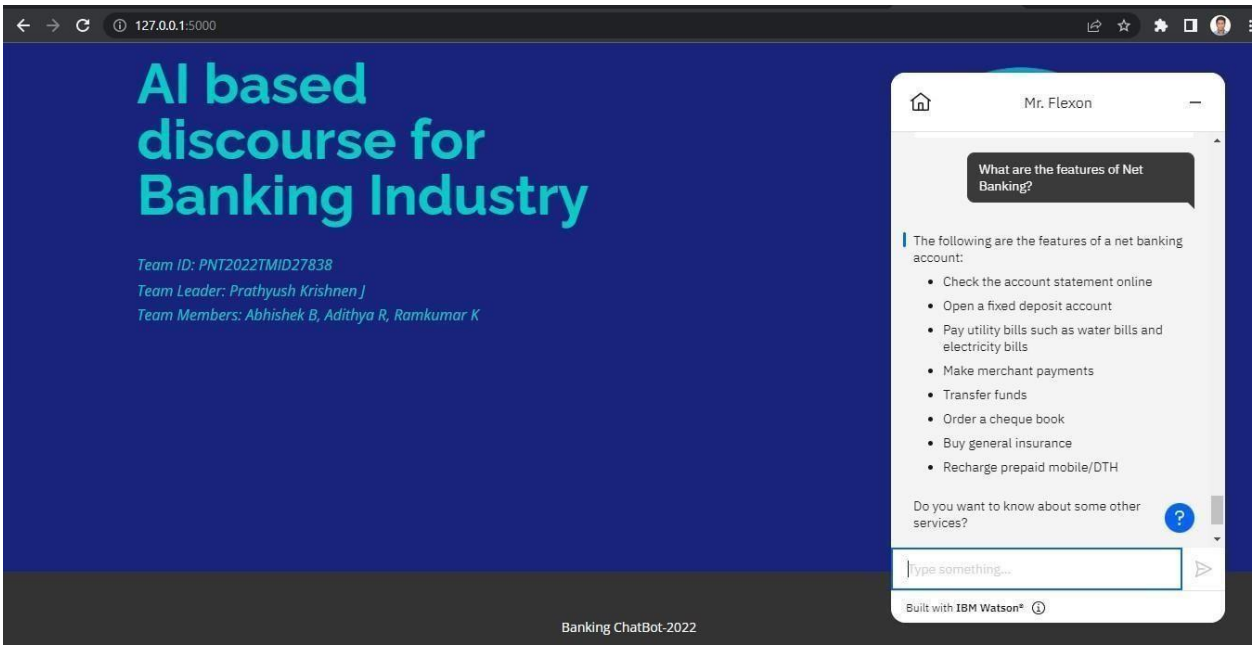
Mr. Flexon
General Queries
Select the general queries listed below:
Storage Locker Facility
Storage Locker Facility
ADYAR,ALWARPET,ANNA NAGAR,ASHOK NAGAR,RAMAPURAM,KK NAGAR,KARAPAKKAM
Do you want to know about some other services?
Yes
No
Type something...
Built with IBM Watson®
Banking ChatBot-2022





PROJECT DEMO LINK:

https://drive.google.com/file/d/1DMnCfG4ZCwM6Q08WyIE0BSAy698rcvq/view?usp=share_link