

PROJECT REPORT

AI BASED DISCOURSE FOR BANKING INDUSTRY

TEAM ID: PNT2022TMID00963

TEAM MEMBERS

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GOWSIKA S [Team Member3]

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1.INTRODUCTION:

PROJECT OVERVIEW:

- A banking bot project is built using artificial algorithms that analyzes user's queries and understand user's message. The system is designed for banks use where users can ask any bank related questions like loan, account, policy etc..
- The system recognizes user's query and understands what he wants to convey and simultaneously answers them appropriately. The questions asked by the users can be in any format. There is no specific format for users to ask questions. The built in artificial intelligence system realizes users requirements and provides suitable answers to the user.
- Bots are revolutionizing the banking sector like never before & the push toward new-age technologies is encouraging financial institutions to embrace a digital-first mindset. And as the need for multi-layered customer support becomes even more prevalent, traditional banks & startups are making the most of it.
- For financial institutions, chatbot development helps focus on improving the business processes and providing a better user experience to customers. This article will provide a walk-through on the essentials of developing a custom banking bot along with the key features & interesting use cases and how we can assist you.
- Further, banking can become more personalized when you create a chatbot. And, as users rely even more on their mobile devices, they also look for simplified ways of banking. The bots of today help to do just that. Through their choice of device, they help customers transfer money, check account balance, request check/card & more.

PURPOSE:

- Chatbots boost operational efficiency and bring cost savings to businesses while offering convenience and added services to internal employees and external customers.
- Allow companies to easily resolve many types of customer queries and issues while reducing the need for human interaction.
- The banks are implementing AI for detecting frauds, enhancing customer experience, tracking customer behavior for recommending more personalized services, analyzing customer credit histories to predict risks associated with allotting loans, and many more.

- The Bot will guide a customer to create a bank account, answer loan queries ,general banking queries and queries regarding net banking.

2.LITERATURE SURVEY:

EXISTING PROBLEM:

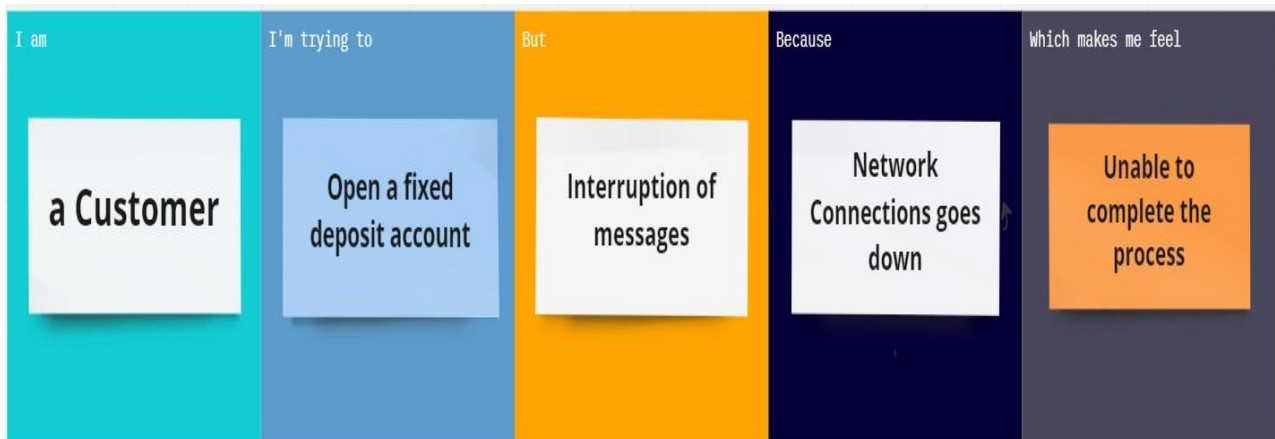
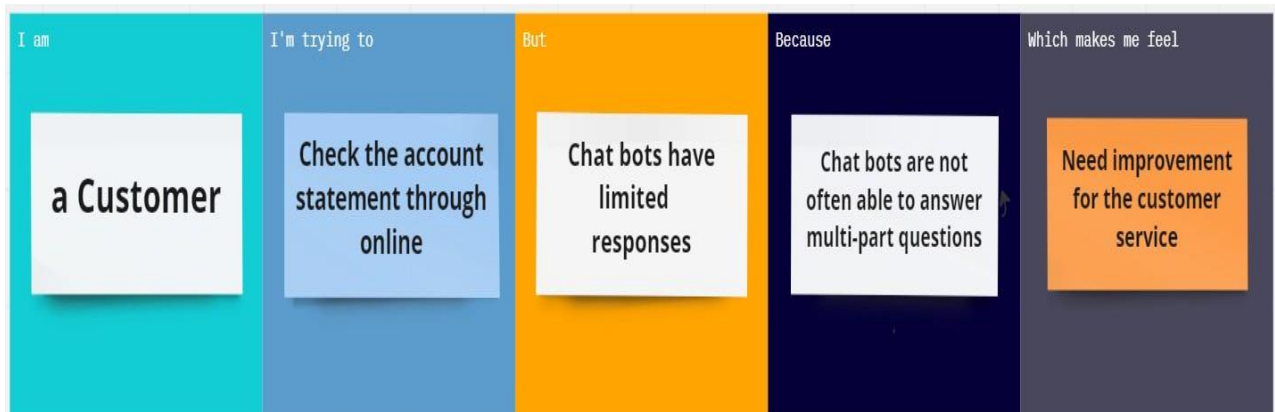
- In today's fast-paced world, people have no time to stand in a queue and wait for their turn to get things done. Especially in banking institutions, just confirming a few details like your bank balance or status of daily transactions becomes a full day's project. This one-stop digital solution allows users to save time, money, and effort with its customized automated service offerings. Now, you can connect with your customers anytime and from anywhere in the world.
- Message Interpreting is one of the biggest challenges with using chatbots in customer support comes with interpreting the messages and understanding the user intention. Programming flexible algorithms for interpreting the intention of the message is a top priority upon making a chatbot.
- Machine to human transition are must be a switching algorithm for a seamless transition from chatbot to a human in certain instances. The solution is based on analyzing the nature of responses with predetermined patterned in order to decide whether or not human advice is needed.
- Chatbots serve as a double-edged sword. On one side – they help users to sort out the causes. On the other – they provide you with vital information on the said user. While this information is only a fracture of what you are gathering with Ad Tech toolset – it provides vital insights into audience behavior and preferences. And that is the thing you would like to take into consideration.

REFERENCES:

- “Intelligent chatbot for banking system” Mr. Anikat dole, Mr.Hrushikesh sansare, Mrs.Sprooha Athalye, 2015.
- “Artificial intelligence based chatbot”, Tushar Gaikwad, 2018.
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- “Conversation to automation in banking through chatbot”.Shasha Fathima suhel, Vinod kumar sukhla, Sonalivyas,2020.

- “Banking with a chatbot”, Monica anetta, Ibolya vizali, 2021.
- “Intelligent chatbot”, Munira Ansari, Saalim Shaikh, Mohammed Saad Parbulkar, Talha Khan, Anupam Singh, 2021.
- “Modern development trends of chatbots using Artificial intelligence”, Julija skrebeca, Paula kalniete, 2021.
- “Chatbot using python”, Sweetly Sahani, Sushmita Mary, 2022.

PROBLEM STATEMENT:

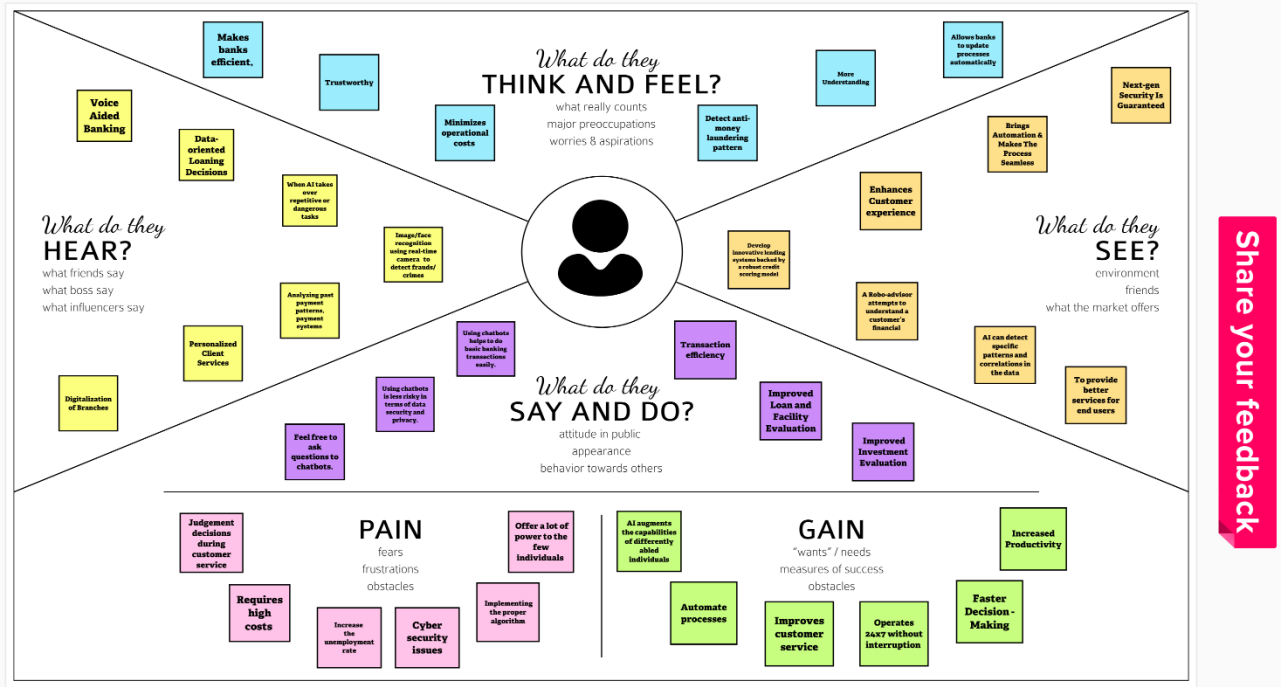


3.IDEATION & PROPOSED SOLUTION:

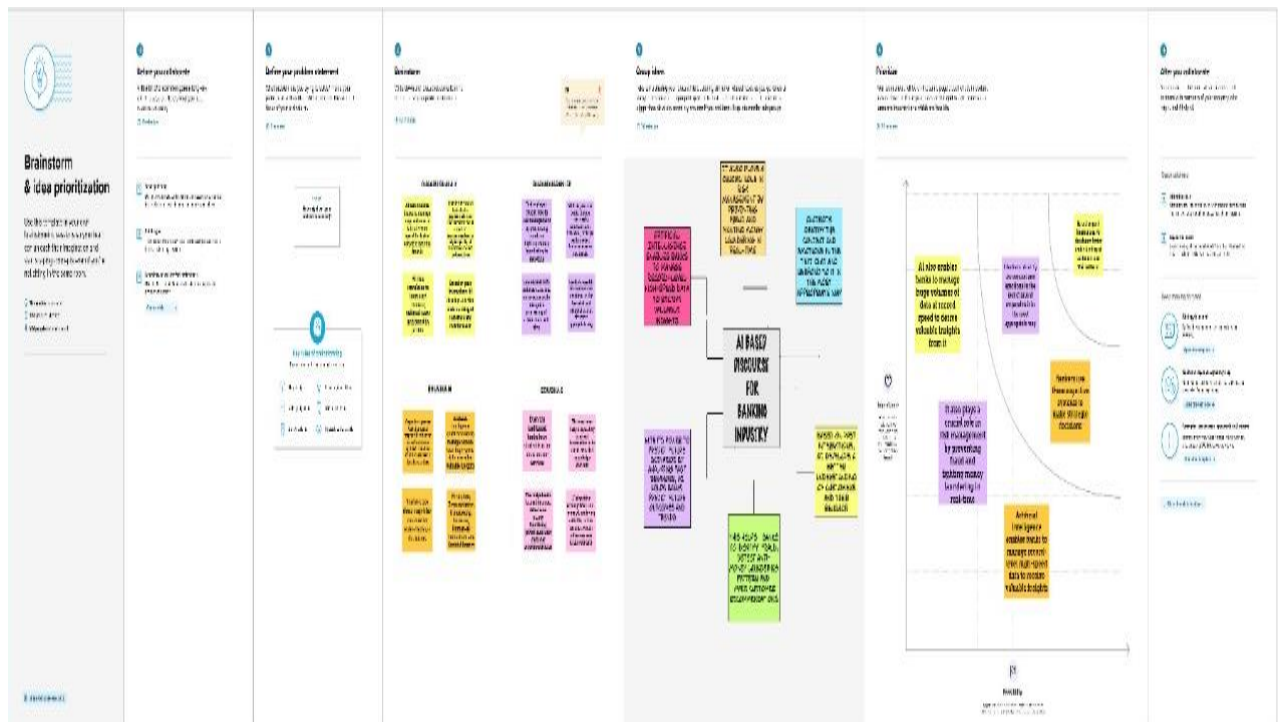
EMPATHY MAP CANVAS:

1

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



IDEATION& BRAINSTORM:



PROPOSED SOLUTION:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	One of the biggest customer service challenges for banks is when their service executives are not able to resolve a problem, at least, not instantly. Customer service executives are often loaded with too many requests and they fail to provide the required attention to each customer.
2.	Idea / Solution description	To solve this issue, you can use an automated solution like a chatbot that can handle all simple queries. With a chatbot handling all of the simple customer requests, you could take the load off your employees. This, in turn, will provide your employees the time to tackle more complex queries.
3.	Novelty / Uniqueness	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.
4.	Social Impact / Customer Satisfaction	The entire process of lead generation has become uncomplicated due to the presence of chatbots in the banking industry. The chatbots are fixed on the bank's official website/app and interact with the users to determine whether or not they are interested in purchasing their bank's products. Reduce resolution time by helping customers help themselves with AI-powered self service and conversation routing features. By automating repetitive customer questions and scale your business without increasing headcount or budgets.
5.	Business Model (Revenue Model)	Use custom reports and visualizations to analyze the chatbot's performance and optimize its flows for higher efficiency. Deploy the chatbots in no time with the help of ready to use templates available for different use-cases.
6.	Scalability of the Solution	Chatbots can collect user data and function as per customer needs and behavioral patterns with the help of AI, making the entire customer journey more personalized and customized. Customers who need to perform super-simple queries, such as checking their balance or seeing if a bill has been paid, typically still open their mobile app. No need to complete two-factor authentication. Now a customer can get an answer in just a few seconds.

PROBLEM SOLUTION FIT:

Define C.S. fit into CC	1. CUSTOMER SEGMENT(S) They can assist bank customers to get the status of account balances, transfer funds, apply for personal loans and credit cards, pay bills, check their credit scores.	6. CUSTOMER CONSTRAINTS <ul style="list-style-type: none"> Good network Any device to connect (mobile / laptop) 	5. AVAILABLE SOLUTIONS Machine Learning, predictive analytics, and voice recognition tools are all increasing the value of digital banking services. AI Chatbots, facial recognition banking apps, and fraud detection systems and applications.	Explore A3, differentiate
	2. JOBS-TO-BE-DONE / PROBLEM Lead generation and qualification Chatbots can engage with the visitors on the bank's digital platforms to generate leads and assess those leads with relevant questions. Customer service 24/7 availability, and the tireless and consistent nature of chatbots for customer support is an important advantage for chatbots in <u>banking</u> .	9. PROBLEM ROOT CAUSE Chatbots are as smart as they are programmed to be handling multiple languages and dialect can be a <u>trouble</u> <u>some task</u> for chatbots. Gathering data, cleaning it and training the chatbot with it is a lengthy process. AI is a developing branch and a chatbot with human-level <u>cognizance</u> .	7. BEHAVIOUR Banking chatbots help customers complete banking transactions with ease using voice or text. Chatbots are useful to banks because they can reduce operational costs, as well as improve customer satisfaction by streamlining interactions.	
Identify STRONG TR & EM	3. TRIGGERS TR <ul style="list-style-type: none"> Chatbots are faster They tirelessly work round the clock and are available 24*7*365 Chatbots result in huge cost savings They provide a personalized experience 	10. YOUR SOLUTION SL Chatbots can help users find information faster, but they are not a replacement for answers to frequently asked questions on your organization website. Chatbots require good content that can be easily parsed, and that content must be created and maintained by humans. Sometimes the chatbot may not know the answer. When that happens, a chatbot can transfer users to an agent or direct them to a self-service knowledge center. Being resourceful and continuing to improve the quality of your content can help create a successful chatbot solution and improve overall customer experience.	8. CHANNELS of BEHAVIOUR CH 8.1 ONLINE AI can help banks improve the security of online finance, track the loopholes in their systems, and minimize risks. 8.2 OFFLINE Complex <u>machine learning</u> to fend off money launderers or sift through mountains of data for fraud-related anomalies, you've probably at least interacted with its customer service chatbot, which runs on AI	Identify STRONG TR & EM
	4. EMOTIONS: BEFORE / AFTER EM <u>Emotions before:</u> Helpless, slow process, improper guidance, time consuming <u>Emotions after:</u> <u>Faster, proper guidance, customer friendly, solve complex queries</u>			

4.REQUIREMENT ANALYSIS:

FUNCTIONAL REQUIREMENTS:

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Get Account Balance	Customers can ask chatbots to check their account balance within a few seconds. AI assistants can also estimate balances and warn users if their accounts are about to fall below a certain threshold. This allows customers to better manage their accounts without logging into their e-banking account or calling their bank directly.
FR-2	Send Timely Alerts & Notifications	Chatbots can be configured to send valuable reminders and regular alerts, such as bill payment deadlines or the delivery of specific documents for financial transactions (e.g., loan applications). They can also send important notifications, such as banking updates and credit score changes.
FR-3	Personal Banking Assistance	Chatbots may give users various valuable information, such as their spending habits, a year-end review of recurring costs, and charges for specific months or places. They do so by gathering and analyzing data and hence serve as financial counselors as well. This is one of the possible applications for chatbots in banking, and it's especially beneficial for those who don't have access to financial guidance due to budget or location constraints.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-4	Easy & Uncomplicated Lead Generation	The existence of chatbots in the banking sector has simplified the entire process of lead acquisition. The chatbots are deployed on the bank's official website/app and engage with consumers to see whether they are interested in buying their bank's products. Following the first engagement, the 'leads' may be forwarded to the appropriate bank team for an additional follow-up to close the deal.
FR-5	Make Secure Payments	Chatbots allow users to make quick, hassle-free payments in a few seconds with top-notch security and data protection. Conversational banking chatbots simplify the payment procedure and make it swift, safe and secure.
FR-6	Transfer Money	Users may use chatbots to pay their bills, track money transfers, and set up or cancel payments. Users can also use chatbots to charge their prepaid cards or pay off their credit card bills.

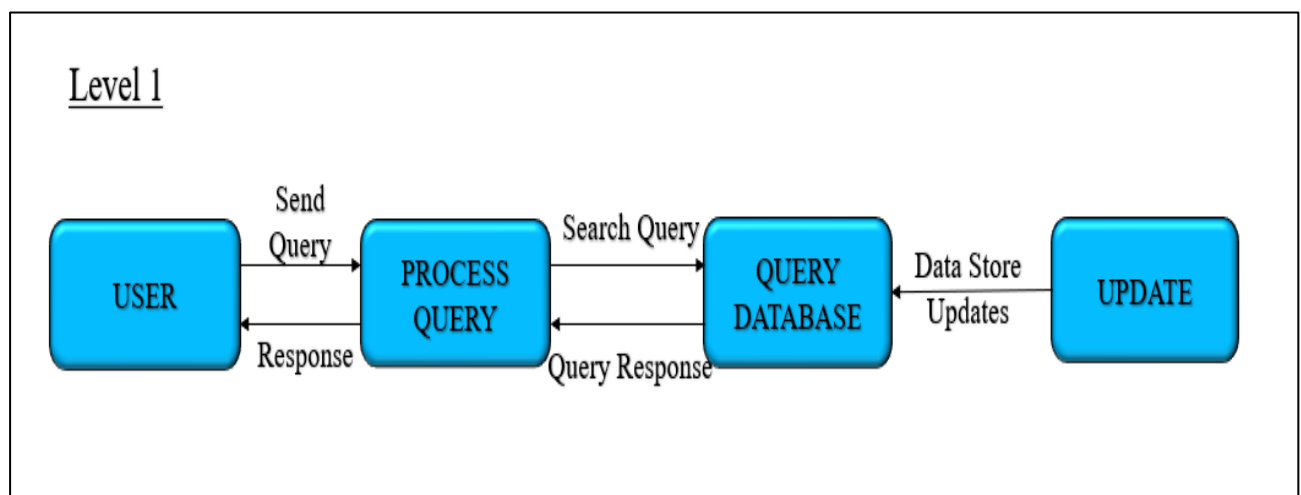
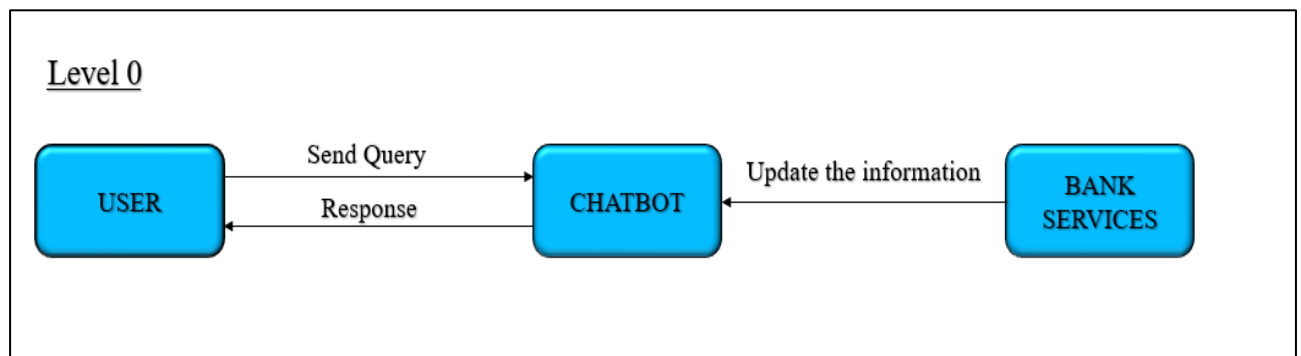
NON FUNCTIONAL REQUIREMENTS:

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	Chatbots can automate tasks performed frequently and at specific times . This gives employees time to focus on more important tasks and prevents customers from waiting to receive responses. Proactive customer interaction.
NFR-2	Security	Employee impersonation, ransomware and malware, phishing, whaling, and bot repurposing are all threats to chatbots. If not addressed, threats can lead to data theft and modifications, causing substantial harm to your organization and customers.
NFR-3	Reliability	Banks have a lot of data about their customers. But the data is disintegrated in a form that during a query resolution, customer service agents need to go through several files and folders just to understand what is the query about. With the use of chatbots in banking, data can be collected, stored, and managed in a form that eases query resolution. Not just that, chatbots can help customers by providing advice. Data collected by chatbots can be used for Personal Financial Management (PFM) .
NFR-4	Performance	When you're building a chatbot or virtual assistant, the quality of the conversation should be the most important consideration.

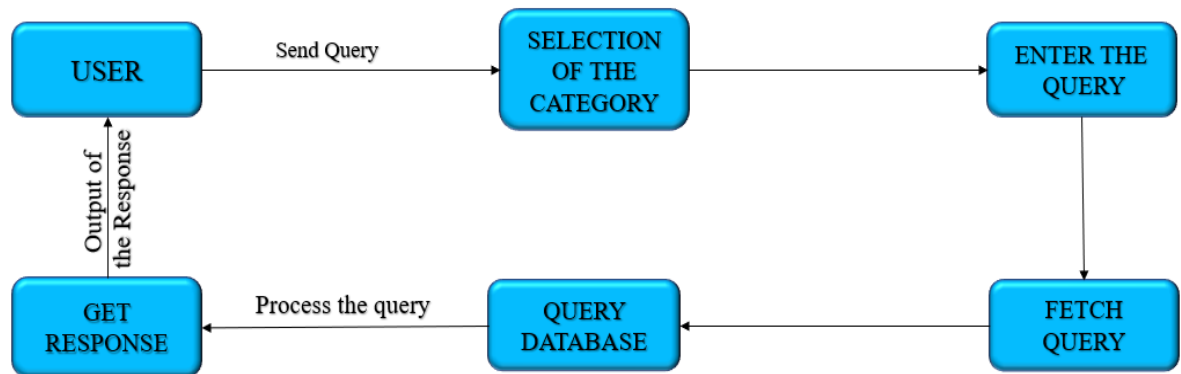
FR No.	Non-Functional Requirement	Description
NFR-5	Availability	Customers needn't wait for the next available operator when chatbots are part of the communication strategy on a round-the-clock basis. Instant Response – Chatbots can handle the queries of thousands of customers instantly as well as simultaneously and improve the average response time.
NFR-6	Scalability	Using banking chatbots for scaling customer support can reduce the need for human resources for handling thousands of queries manually. Custom support agents can help customers with complex queries that chatbots cannot resolve. With automation, the cost of customer support can be reduced considerably.

5.PROJECT DESIGN:

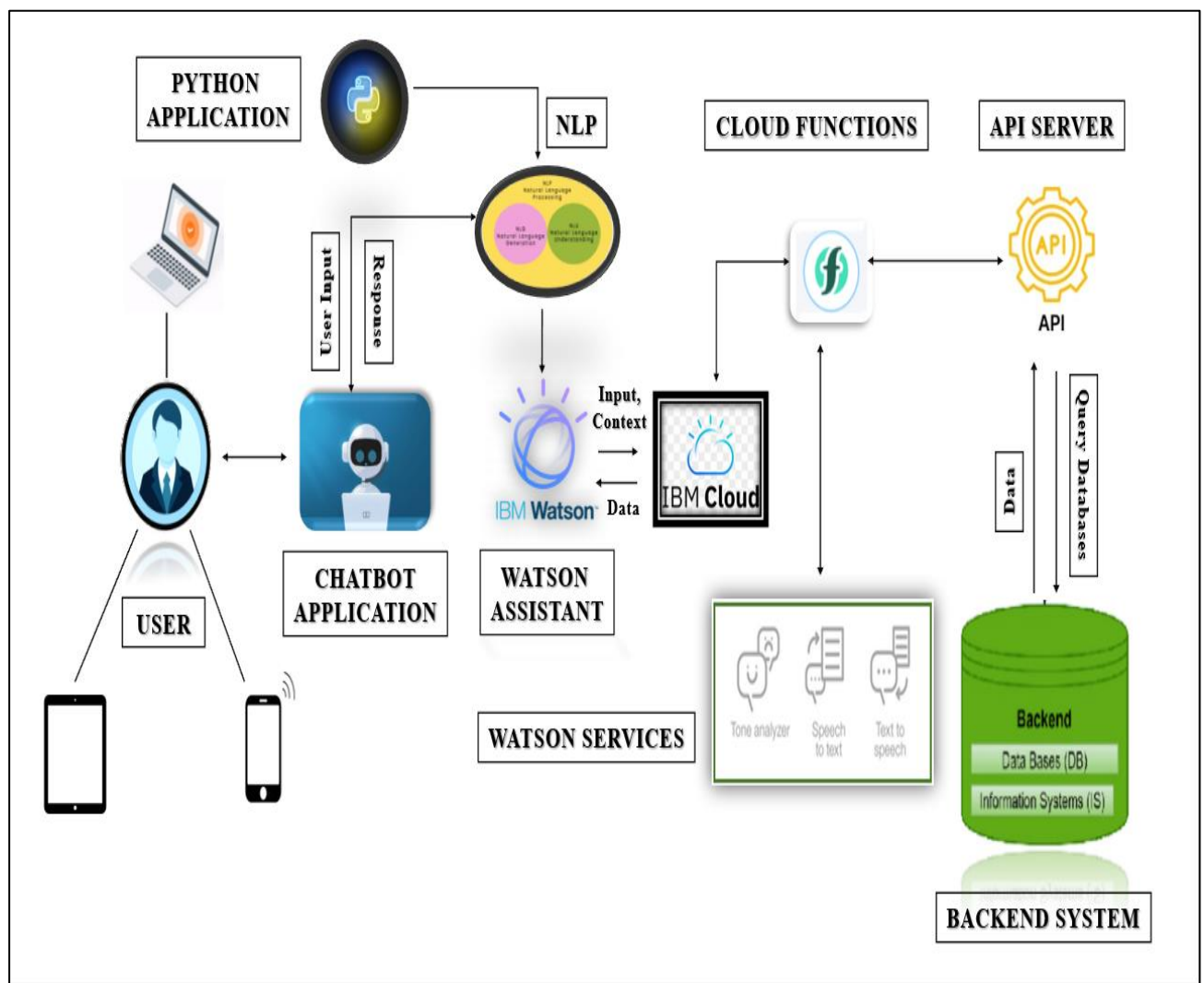
DATA FLOW DIAGRAM:



Level 2



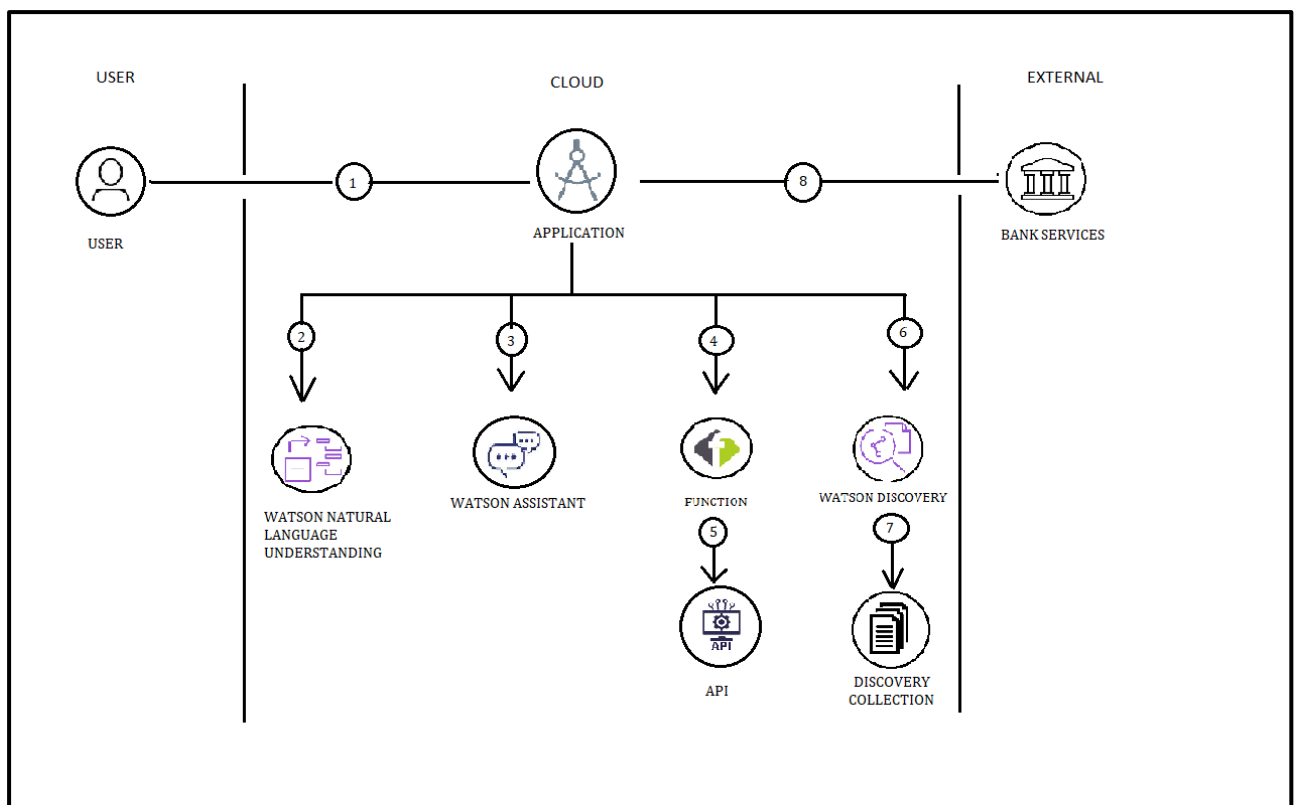
SOLUTION ARCHITECTURE:



SERVICES USED:



TECHNICAL ARCHITECTURE:



USER STORIES:

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Webuser)	Saving account related actions	USN-01	As a user, in the savings accounts options. I can select types of savings account to get details regarding document required for creating that saving accounts.	I can clear my queries regarding type of savings accounts.	High	Sprint-1
Customer Care Executive		USN-02	As a user, I can check the Interest rates of savings account.	I can clear my queries regarding the Interest rates of savings account .	High	Sprint-1
		USN-03	As a user, I can check the minimum balance of savings account.	I can clear my queries regarding the minimum balance of savings account.	Medium	Sprint-2
	Current Account related actions	USN-04	As a user , I can choose the Type of company to know the information on the documents to be submitted for creating current accounts.	I can clear my queries regarding the type of companies.	High	Sprint-1
		USN-05	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-06	As a user, I can choose the type of loans to know the information .	I can clear my queries regarding types of loans .	High	Sprint-1
		USN-07	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 accounts.	High	Sprint-2
		USN-08	As a user , I can check the status of loan fpr my loan accounts.	I can clear my queries regarding loan status of loan accounts.	Low	Sprint 2
	General queries Related actions	USN-09	As a user , I want to check the procedure details for Currency Conversion facility of my bank account.	I can clear my queries regarding Currency Conversion facility of bank.	Low	Sprint 1

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 approved by the bank.	I can clear my queries regarding CIBIL score of my loan application.	Medium	Sprint 3
		USN-11	As a user, I want to get procedure details for maintaining Storage Locker Facility of my bank account.	I can clear my queries regarding Storage Locker facilities of my bank account.	High	Sprint 3
	Net banking Related action	USN-12	As a user, I want to get the procedure details for changing Net Banking password of my bank account.	I can clear my queries regarding changing of Net Banking password.	Medium	Sprint 2
		USN-13	As a user, I can select the types of fund transfers to get details regarding different services available in net banking.	I can clear my queries regarding the 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 a 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 a admin , I can added more options to queries and add new options as new features get added.	I can add more options to queries in chatbot.	Medium	Sprint 1

6.PROJECT PLANNING & SCHEDULING:

SPRINT PLANNING & ESTIMATION:

Milestone	Task	Starting Date	Ending Date	Project completion Status	Team Members
Creating IBM service	Creation of banking chatbot or assistant using IBM Watson Assistant	24 Oct 2022	25 Oct 2022	9%	BHAVADHARANI SP, BHUMIKA M, CHAARU BHALA K, GOWSIKA
	Understanding customer's banking Related queries and skills	25 Oct 2022	29 Oct 2022	15%	BHAVADHARANI SP, BHUMIKA M, CHAARU BHALA K, GOWSIKA
Create skills and Assistant for chatbot	Training the chatbot with banking Related Dataset	31 Oct 2022	01 Nov 2022	24%	BHAVADHARANI SP, BHUMIKA M, CHAARU BHALA K, GOWSIKA
	Building action and Adding responses to account creations	01 Nov 2022	02 Nov 2022	29%	BHAVADHARANI SP
	Building action and Adding responses to Banking related queries	02 Nov 2022	03 Nov 2022	34%	CHAARU BHALA K
	Building action and Adding responses to Net banking	03 Nov 2022	04 Nov 2022	39%	GOWSIKA
	Building action and Adding responses to Loan related queries	04 Nov 2022	05 Nov 2022	44%	BHUMIKA M
Testing Assistant & integrate with Flask webpage	Testing the chatbot performance with the trained banking functionalities or conversations	07 Nov 2022	09 Nov 2022	60%	BHAVADHARANI SP, CHAARU BHALA K
	Integration of flask webpage with chatbot assistant to provide a framework	09 Nov 2022	12 Nov 2022	83%	BHUMIKA M, GOWSIKA S


Milestone	Task	Starting Date	Ending Date	Project completion Status	Team Members
Deployment of chatbot	Final deployment of AI based chatbot For Banking Industry	14 Nov 2022	19 Nov 2022	100%	BHAVADHARANI SP, BHUMIKA M, CHAARU BHALA K, GOWSIKA S


SPRINT DELIVERY SCHEDULE:


Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Creating the IBM Service	USN-1	As a user, I can see Watson Assistant.	1	High	BHAVADHARANI SP
Sprint-1	Chatbot Skills Creation	USN-2	As a user, I will see the Chatbot having banking related skills.	1	High	CHAARU BHALA K
Sprint-2	Creating Saving Account Action	USN-3	As a user, I can check the Interest rates and minimum balance of savings account.	2	Medium	BHUMIKA M
Sprint-2	Creating Current Accounts related Actions	USN-4	As a user , I can choose the Type of company to know the information on the documents to be submitted for creating current accounts. To get details on procedure to close my current account.	2	Medium	GOWSIKA S
Sprint-3	Creating Loan Accounts Related Actions	USN-5	As a user, I can choose the type of loans to know the information choosing an essential loan scheme. To check the status of Loan for my Loan Accounts.	2	High	CHAARU BHALA K
Sprint-3	Creating General Query Action	USN-6	As a user , I want to get the procedure details Currency Conversion and maintaining storage locker facility of my bank account.	2	Medium	BHAVADHARANI SP

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-3	Creating Net Banking related Actions	USN-7	As a user , I want to get the procedure details for changing the Net Banking Password of my bank account.	2	High	GOWSIKA S
Sprint-4	Creating Assistant & integrate with Flask Web Page (Build Python Code)	USN-8	As a user , I can see a flask web page for bank.	1	Low	BHAVADHARANI SP BHUMIKA M
Sprint-4	Build HTML Code	USN-9	As a user , I want to access the chatbot in a web browser that can be accessed from almost all devices.	1	Medium	CHAARU BHALA K GOWSIKA S
Sprint-4	Run The Application	USN-10	As a user , I want to view pages of the banking websites and communicate with the chatbot 24*7.	1	Low	BHAVADHARANI SP BHUMIKA M CHAARU BHALA K GOWSIKA S

REPORTS FROM JIRA:





Who can see your profile photo?



 Anyone


About you

Full name
Who can see this?


Chaarur Bhala
 Anyone

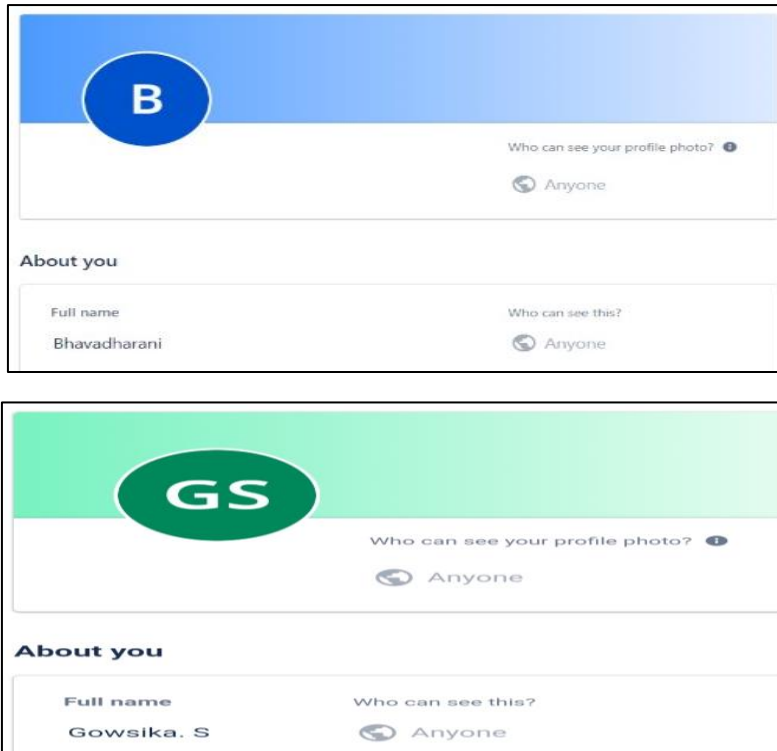


Who can see your profile photo?


 Anyone

Public name

Bhumika M
 Anyone



7.CODING AND SOLUTIONING :

WEBCHAT CODE:

<script>

```
window.watsonAssistantChatOptions = {
```

```
  integrationID: "42ea6fd5-4b99-4ad0-9fe8-4a5e41fd8690", // The ID of this integration.
```

```
  region: "us-south", // The region your integration is hosted in.
```

```
  serviceInstanceID: "2f9d8756-ae69-44cd-a61c-d1baee9e04de", // 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>

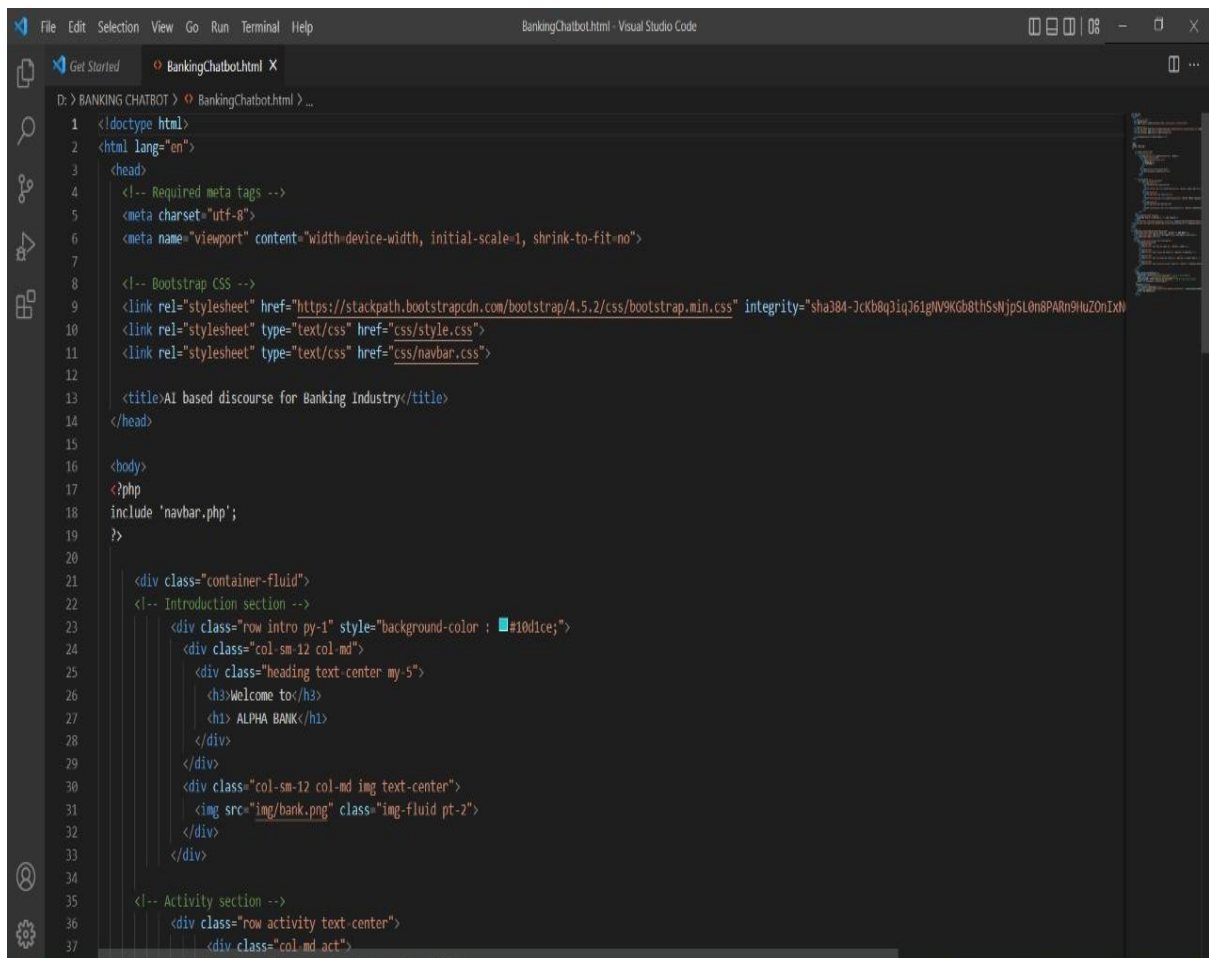
FEATURE 1:

BUILD PYTHON CODE:

```
from flask import Flask, render_template
app = Flask(__name__)
@app.route('/')
def bank():
    return
render_template('BankingChatbot.html')
if __name__ == '__main__':
    app.run()
```

FEATURE 2:

BUILD HTML CODE:

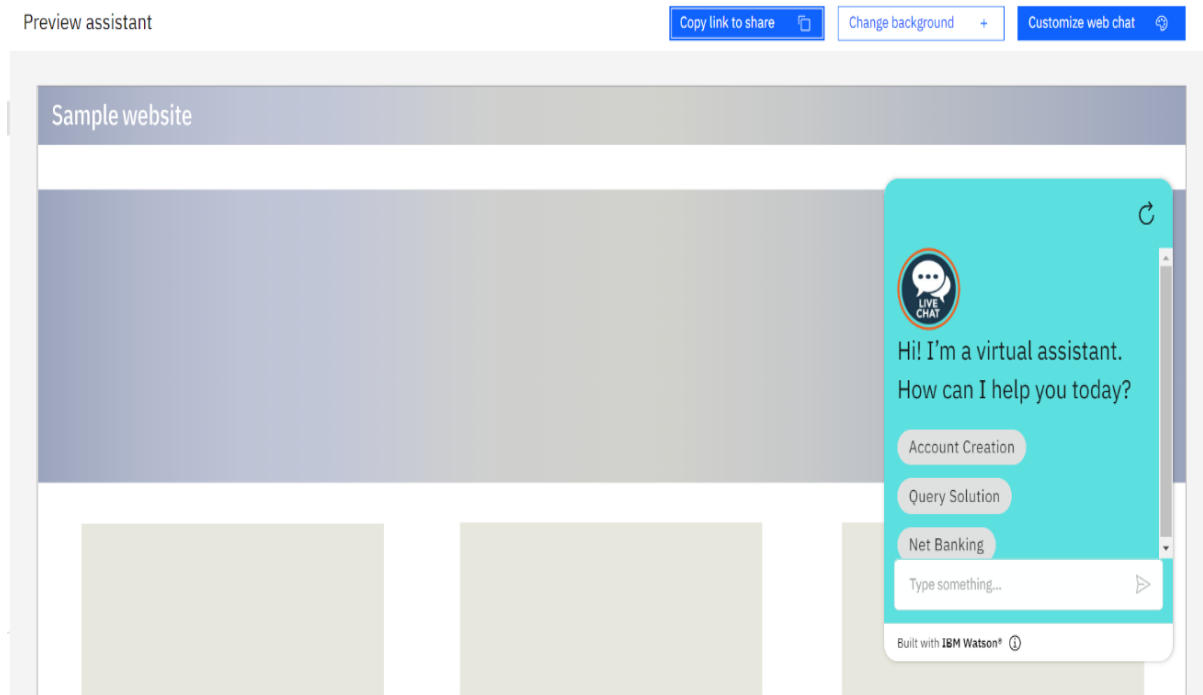


```
File Edit Selection View Go Run Terminal Help BankingChatbot.html - Visual Studio Code
D:\> BANKING CHATBOT > BankingChatbot.html > ...
37 <div class="col-md act">
38 
39 <br>
40 <a href="createuser.php"><button style="background-color : #277bc4;">Create a User</button></a>
41 </div>
42 <div class="col-md act">
43 
44 <br>
45 <a href="transfermoney.php"><button style="background-color : #2785c4;">Make a Transaction</button></a>
46 </div>
47 <div class="col-md act">
48 
49 <br>
50 <a href="transactionhistory.php"><button style="background-color : #2785c4;">Transaction History</button></a>
51 </div>
52 </div>
53 </div>
54 <footer class="text-center mt-5 py-2">
55 <p>&copy; 2022. Made by <b>ALPHA GROUP</b> <br> Alpha Foundation</p>
56 </footer>
57 <script src="https://code.jquery.com/jquery-3.5.1.slim.min.js" integrity="sha384-DfxdZhtPH01SS55nCTpuj/zy4C10GpamoFVy38MBNe+1bbVYUew0nCkXalkfj" crossorigin="anon
58 <script src="https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/js/bootstrap.bundle.min.js" integrity="sha384-horij/jymK8fNQe+A12Hb8AhR926Lz/3jpcU6G0n+Y7RswehrtN/EE3MoK7Z6Z
59 </body>
60 </html>
61 <!-- navbar -->
62 <nav class="navbar navbar-expand-md navbar-light bg-light">
63 <a class="navbar-brand" href="index.php" style="color : #c05656;"><b> ALPHA BANK</b></a>
64 <button class="navbar-toggler" type="button" data-toggle="collapse" data-target="#collapsibleNavbar">
65 <span class="navbar-toggler-icon"></span>
66 </button>
67 <div class="collapse navbar-collapse" id="collapsibleNavbar">
68 <ul class="navbar-nav ml-auto">
69 <li class="nav-item">
70 <a class="nav-link" href="index.php" style="color : #c0392b;"><b>Home</b></a>
71 </li>
72 <li class="nav-item">
73 <a class="nav-link" href="createuser.php" style="color : #c0392b;"><b>Create User</b></a>
```

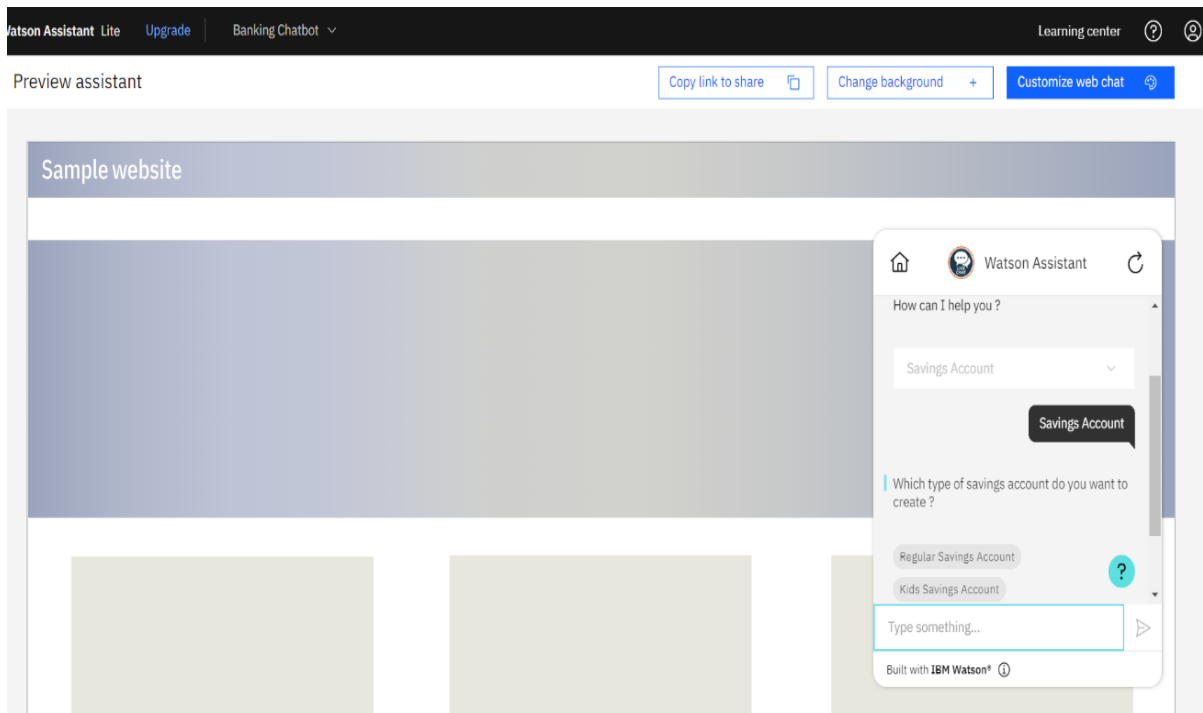
```
File Edit Selection View Go Run Terminal Help BankingChatbot.html - Visual Studio Code
D:\> BANKING CHATBOT > BankingChatbot.html > ...
73 <a class="nav-link" href="createuser.php" style="color : #c0392b;"><b>Create User</b></a>
74 </li>
75 <li class="nav-item">
76 <a class="nav-link" href="transfermoney.php" style="color : #c0392b;"><b>Transfer Money</b></a>
77 </li>
78 <li class="nav-item">
79 <a class="nav-link" href="transactionhistory.php" style="color : #c0392b;"><b>Transaction History</b></a>
80 </li>
81 </div>
82 </nav>
83 <script>
84 window.watsonAssistantChatOptions = {
85 integrationID: "42ea6fd5-4b99-4ad0-9fe8-4a5e41fd0860", // The ID of this integration.
86 region: "us-south", // The region your integration is hosted in.
87 serviceInstanceID: "2f9d8756-ae69-44cd-a51c-d1baee9e04de", // The ID of your service instance.
88 onLoad: function(instance) { instance.render(); }
89 };
90 setTimeout(function(){
91 const t=document.createElement('script');
92 t.src="https://web-chat.global.assistant.watson.appdomain.cloud/versions/" + (window.watsonAssistantChatOptions.clientVersion || 'latest') + "/WatsonAssistantCh
93 document.head.appendChild(t);
94 });
95 </script>
```

8.TESTING:

TEST CASES:

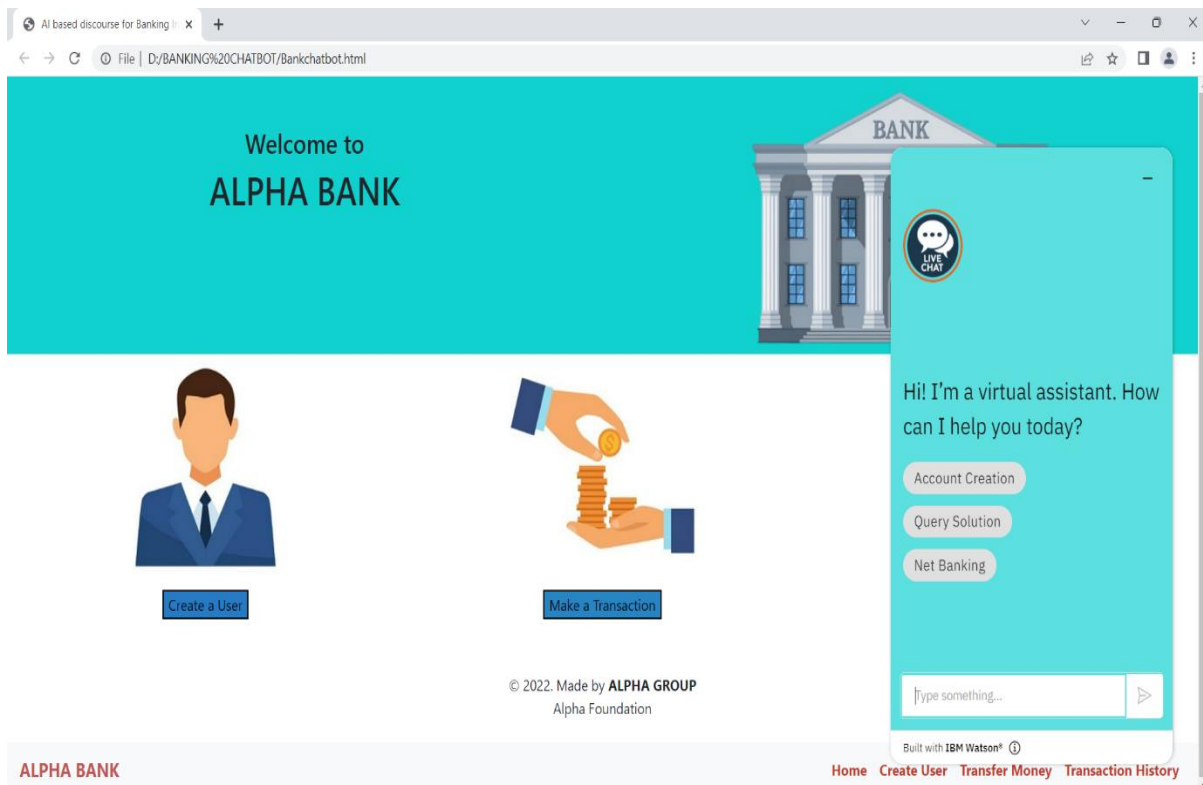
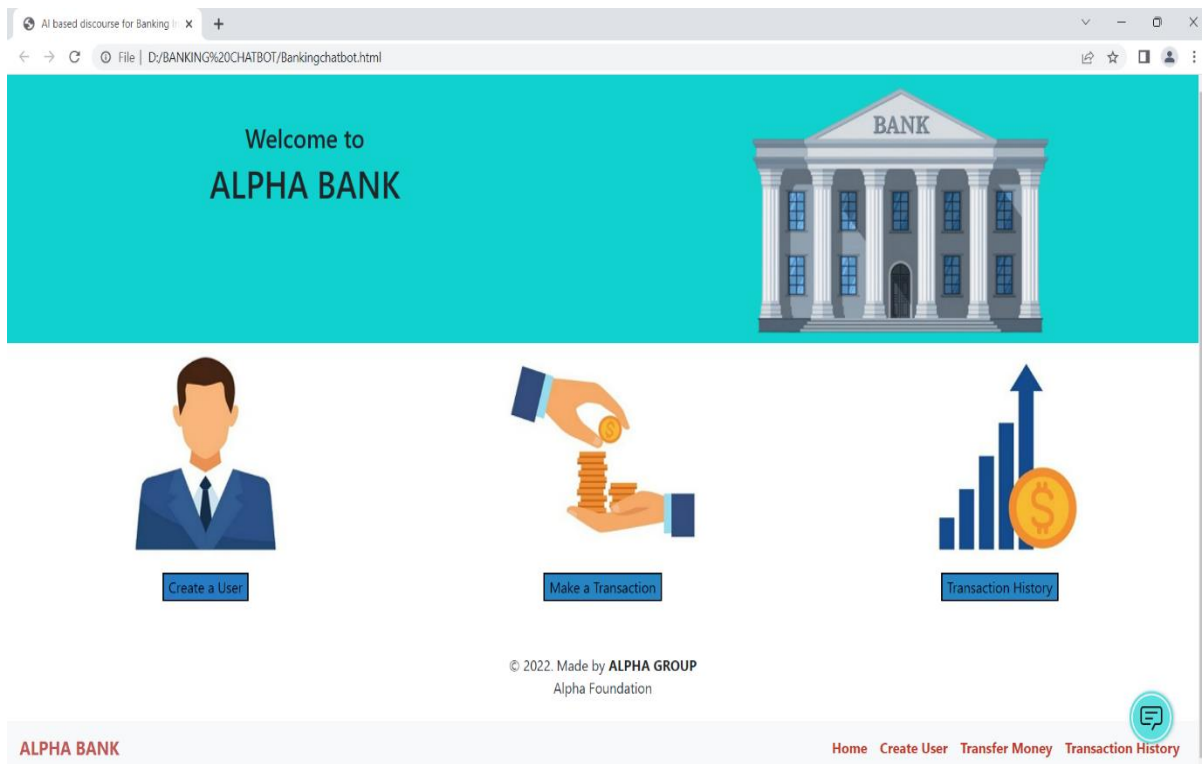


USER ACCEPTANCE TESTING:



9. RESULTS


PERFORMANCE:




AI based discourse for Banking | x +

File | D:/BANKING%20CHATBOT/Bankchatbot.html

Welcome to ALPHA BANK



Create a User



Make a Transaction

© 2022. Made by ALPHA GROUP
Alpha Foundation

ALPHA BANK

Home Create User Transfer Money Transaction History

Watson Assistant

Net Banking

Net Banking

What queries do you have regarding NetBanking ?

What is net banking ?

How do I register for Net banking ?

What are the features of Net banking ?

Facing errors in Net banking

What are the features of Net banking ?

1.Check the account statement online.

2.Open a fixed deposit account.


Type something...

Built with IBM Watson®


AI based discourse for Banking | x +

File | D:/BANKING%20CHATBOT/Bankchatbot.html

Welcome to ALPHA BANK



Create a User



Make a Transaction

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Alpha Foundation

ALPHA BANK

Home Create User Transfer Money Transaction History

Watson Assistant

Facing errors in Net banking

What are the features of Net banking ?

1.Check the account statement online.

2.Open a fixed deposit account.

3.Pay utility bills such as water bills and electricity bills.

4.Make merchant payments.

Do you want to know about some other services?

Yes No

No

Thank you. Have a nice day.

Type something...

Built with IBM Watson®

10.ADVANTAGES:

- AI provides banks a channel to identify suspicious activity quickly.
- AI allows financial institutions to make better investments and accommodate a broader customer base.
- AI creates a user-friendly experience for clients with its increased accessibility and flexibility.
- Chatbot can help the bank understand the expenditure pattern of the customer
- Obtaining information regarding problem
- Providing the requested information to clients

DISADVANTAGES:

- There can also be some technical issues when it comes to using chatbots for banking.
- Chatbots require your customers to use the internet.
- Chat bots are not able to give the right answer unless questions are asked exactly how they are setup to interpret a user input.
- Chatbots are not known to be able to interpret multiple questions asked at one.
- Chatbots are too impersonal.

11.CONCLUSION:

- The current experience of communicating through a chatbot could be enhanced by the utilisation of advanced robo advisory services.
- In an ideal scenario, the system could recognise the phone number of the client greet by his or her name. The low degree of visiting branches indicates a risk for banking institutes.
- Branches do not only allow customers to make use of banking services but also serve as a direct contact interface between customers and their banks. Positive interactions in branches may add in relationship building and increase loyalty. Not visiting customer branches may affect the customer relationship building process.
- Banking institutes need to adjust to the customer contact points with the aim to increase customer relationship without direct contact. Hereby the new ways for interacting with customers is especially important for direct banks, which do not provide branches at all. Multiple privacy and security concerns exist among customers.

- AI system are required to process large amounts of data in order to function properly. With data sets available online the risk for data theft or data exploitation increases. Additionally, the lawmaking process is lacking behind the technological progress with the consequence that existing 57 regulations are not addressing all legal aspects of innovative digital technologies, such as AI assistants. Within the decision making process AI systems have both strong opportunities and challenges.
- On one hand computer systems are not vulnerable to emotional influences or selfish motivations, thus their decisions are solely based on logical reasoning.
- On the other hand computer systems operate as they are programmed. This means, that there is a risk that private interests of third parties can be deceived into the software making the computer system biased.

12.FUTURE SCOPE:

- The impact of digital technology can be seen in almost all industries, and it is not only redefining industries but also changing the way businesses operate. Presently, every sector is evaluating options and adopting ways to compete in this tech-driven world.
- Nowadays, every country is stepping ahead in terms of digitalization, and this is the reason the number of customers is continuously rising in the banking sector. Now the question arises – how the banking sector can assist more and more customers without increasing workforce expenses?
- It is difficult for the industries to match the unique demands of the customers. The level of expectations of today's customers is exceptionally high. Nowadays, customers are technologically savvy and expect the industries to provide them with pleasant and comfortable customer experience — the same thing customers expect from the banking sector too.
- To meet the expectations of the customers, the banking sector has spread its wings in retail, IT, and telecom fields to assist with services such as mobile banking, e-banking, and real-time money transfers. No doubt, these advanced features allow the customers to avail the banking at their fingertips, but it also costs the banking sector.
- The engagement of IT, telecom, and retail has enhanced the probability of transfer of confidential information over virtual networks. Sometimes, it

causes cyber-attacks and fraudulence in the banking sector. This kind of fraudulence not only affects the bank in terms of funds but also affects the trust of the people.

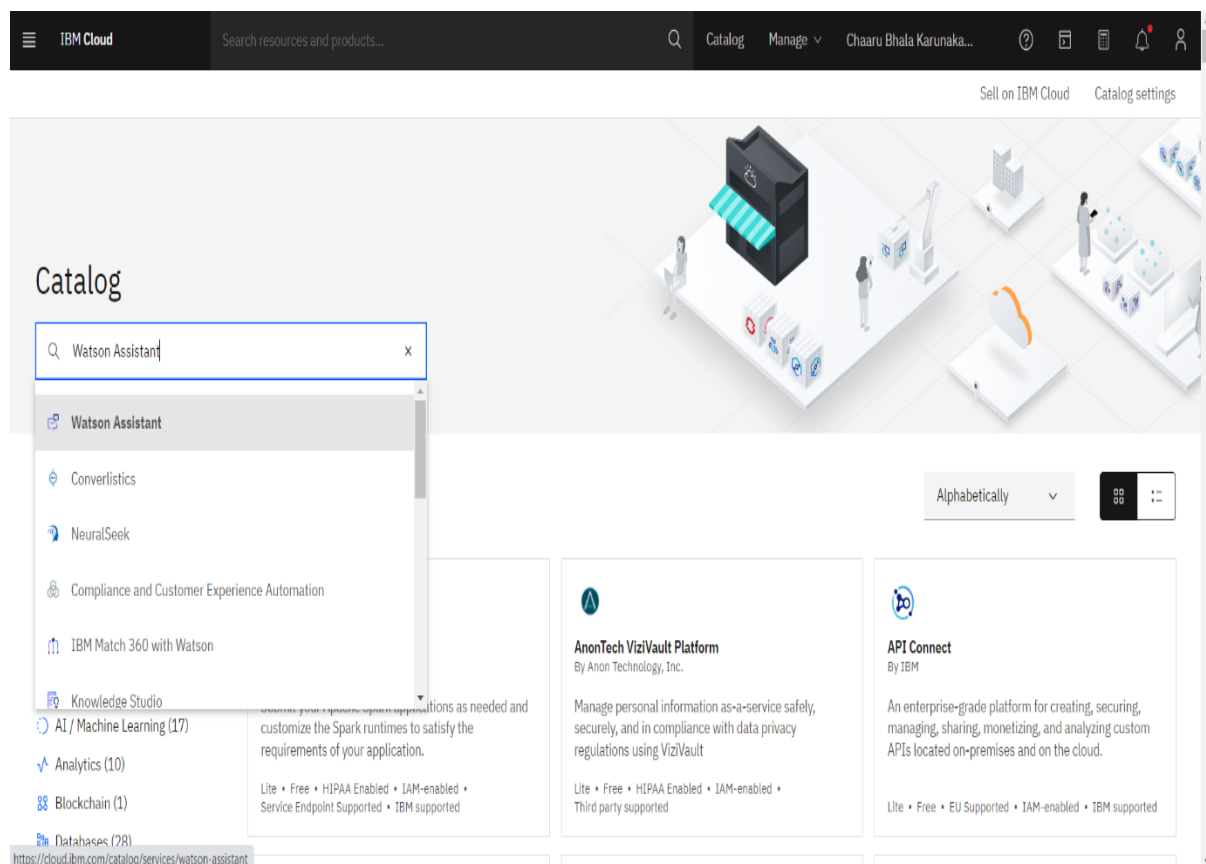
- The primary aim of Artificial Intelligence in the banking industry is to assist the customers by keeping their preferences as a priority. Additionally, Artificial Intelligence plays a vital role in ensuring make that customers are happy with the services offered by the bank. Moreover, AI or machine intelligence helps the bank to understand the expectations of the customers.

13.APPENDIX:

CREATE IBM WATSON ASSISTANT SERVICE & CHATBOT SKILLS

CREATION OF IBM WATSON ASSISTANT SERVICE:

To implement AI Based Discourse For Banking Industry , we need an IBM Service. The Service used in **IBM WATSON ASSISTANT**.



IBM Cloud

Search resources and products...

Catalog

Manage

Chaarun Bhalu Karunaka...

?

Catalog /

Watson Assistant

Watson Assistant lets you build conversational interfaces into any application, device, or channel.

Create

About

Type

Service

Provider

IBM

Last updated

11/08/2022

Category

AI / Machine Learning

Compliance

EU Supported

HIPAA Enabled

IAM-enabled

Location

Sydney

Frankfurt

London

Tokyo

Washington DC

Dallas

Select a location

Dallas (us-south)

Select a pricing plan

Displayed prices do not include tax. Monthly prices shown are for country or location: [United States](#)

Plan	Features	Pricing
Lite	Everything you need to get started, free for as long as you need it Up to 1,000 unique monthly active users (MAUs) chatting with your assistant Up to 10,000 messages per month --- Features --- <ul style="list-style-type: none">• World-class conversational AI with Watson• Make your website assistant your own with Webchat - deploy Webchat in minutes, or use our fully extensible architecture• Bootstrap your assistant by using some of our prebuilt content• Connect to your application or database with a prebuilt integration	Free

Summary

Watson Assistant

Free

Location: Dallas

Plan: Lite

Service name: Watson Assistant-65

Resource group: Default

Existing Lite plan instance

You can have only 1 Lite plan instance of this service per resource group. [Delete](#) your current Lite plan instance in Default resource group to create a new one, or [view the existing instance.](#)

☐ I have read and agree to the following license agreements:
[Terms](#)

Create

Add to estimate

IBM Cloud

Search resources and products...

Catalog

Manage

Chaarun Bhalu Karunaka...

?

Resource list /

Watson Assistant-21

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:

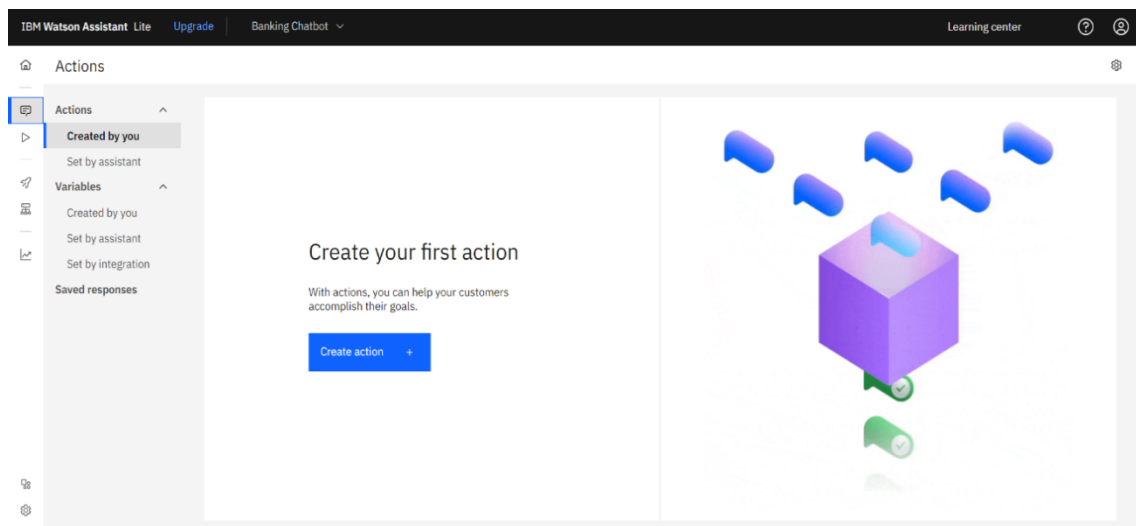
.....

URL:

<https://api.us-south.assistant.watson.cloud.ibm.com/instances/ce1f98>

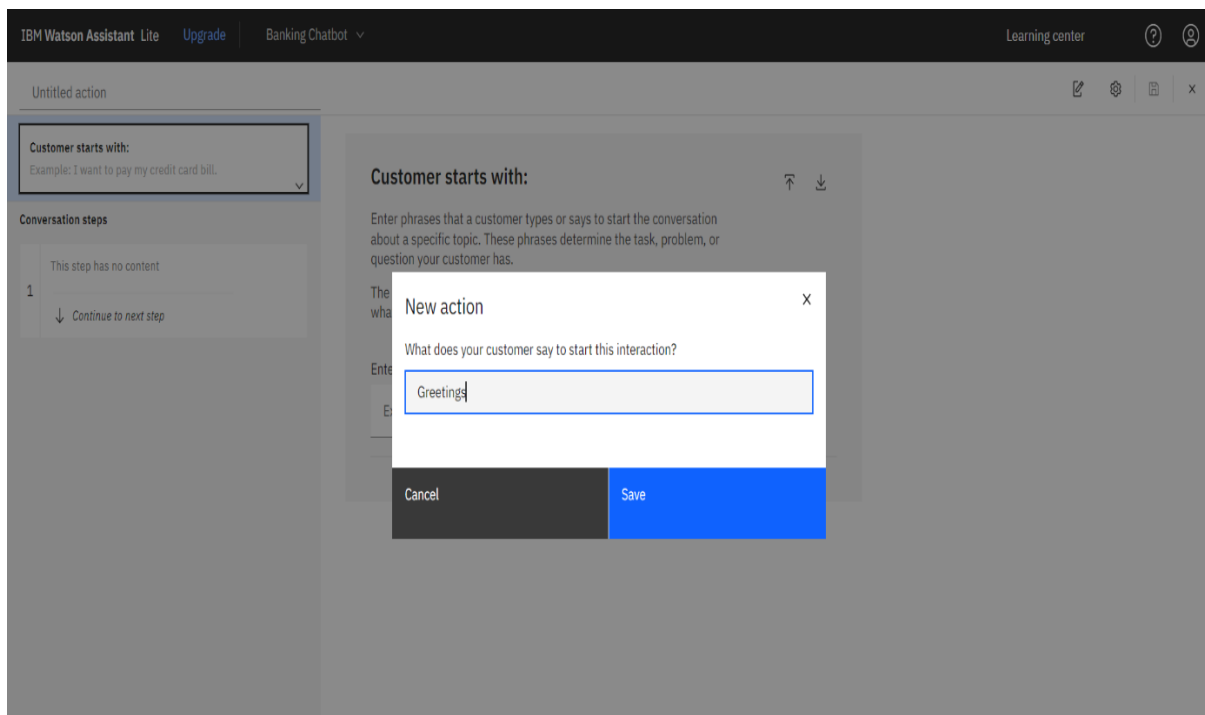
CREATION OF CHATBOT SKILLS:

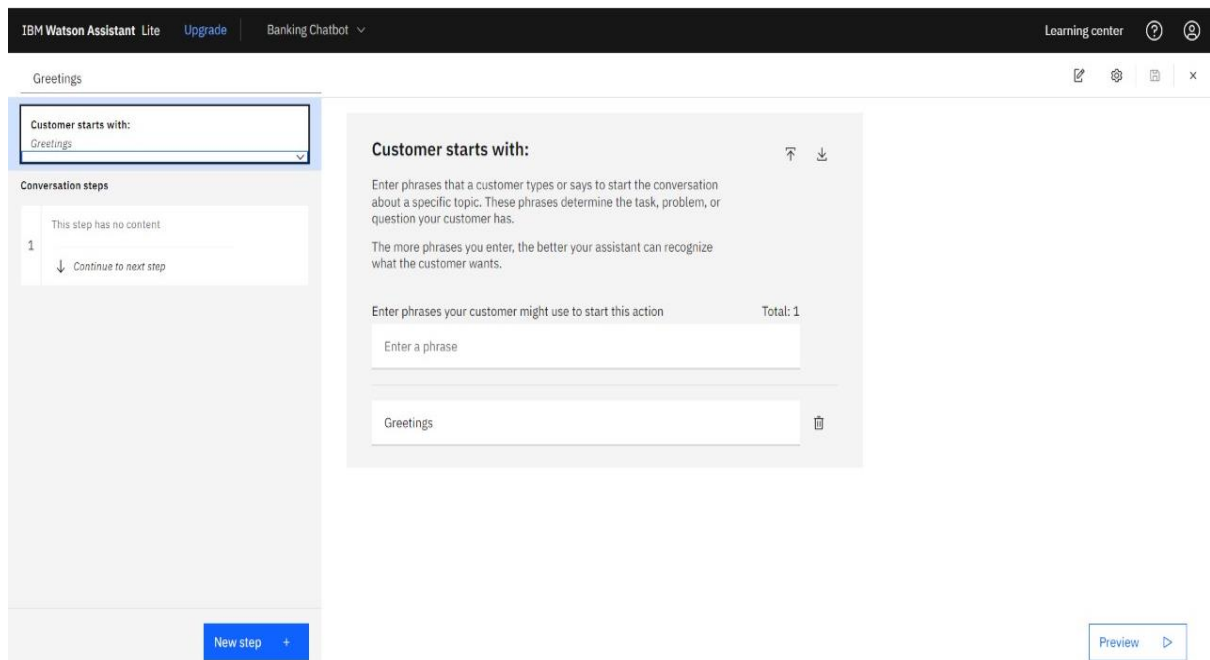
- Skills are nothing but actions and steps. Steps are the subset of actions where conversations are built.
- Assistant is used to integrating skills.
- The Chatbot built for the project AI Based Discourse for Banking Industry is based on Action Skills.



CREATION OF GREETINGS ACTION :

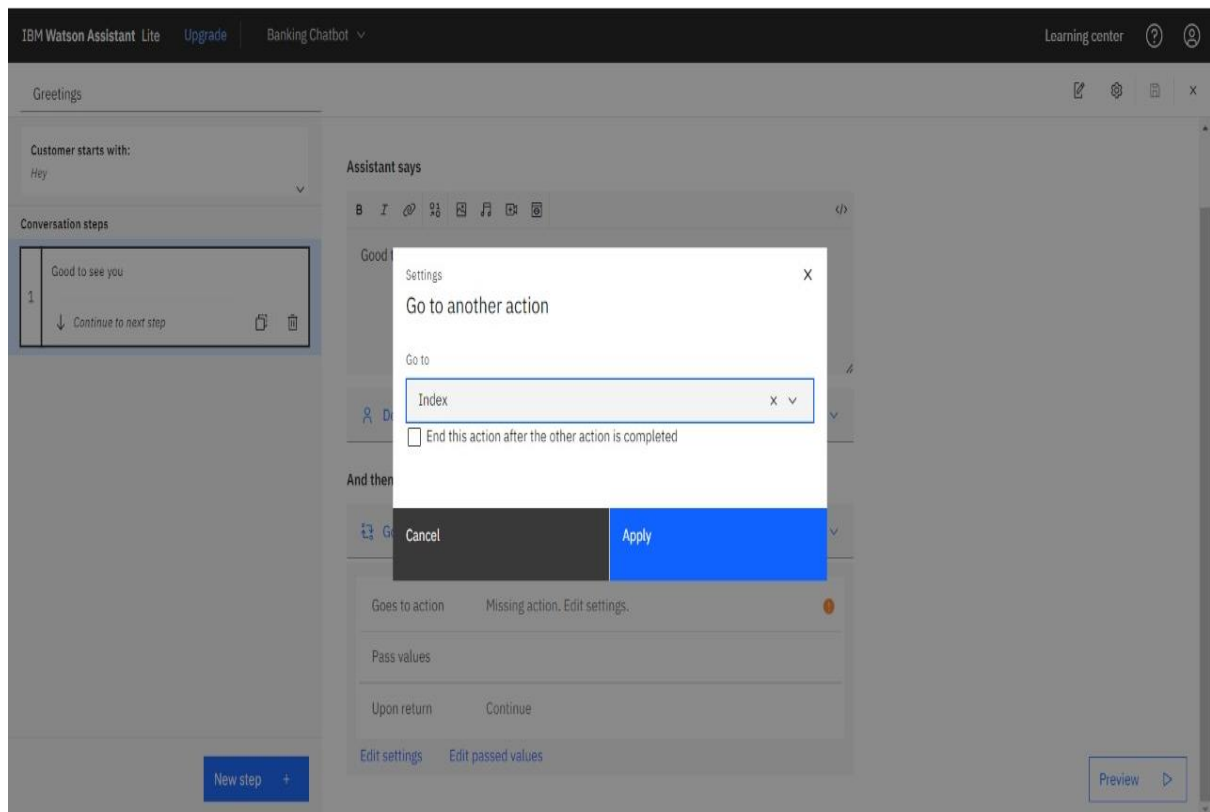
Greetings provides an opportunity to create a strong first impression that will hopefully yield more recurring users.

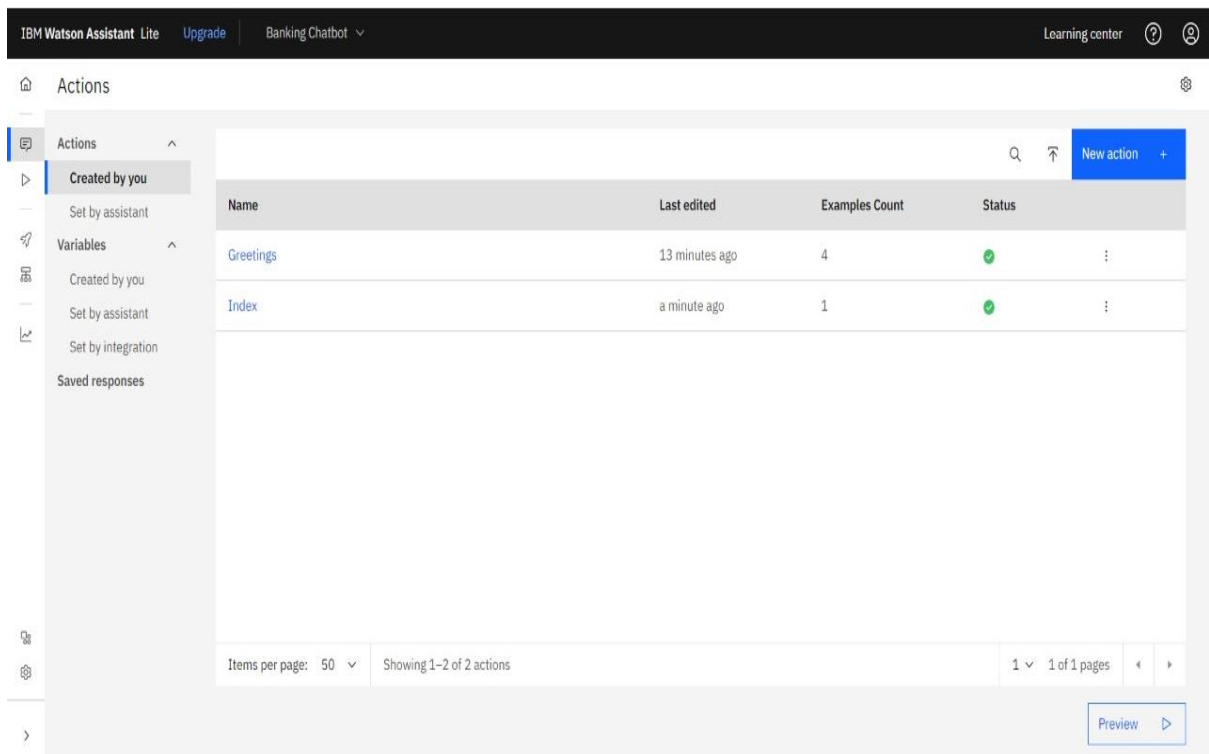




CREATION OF INDEX ACTION :

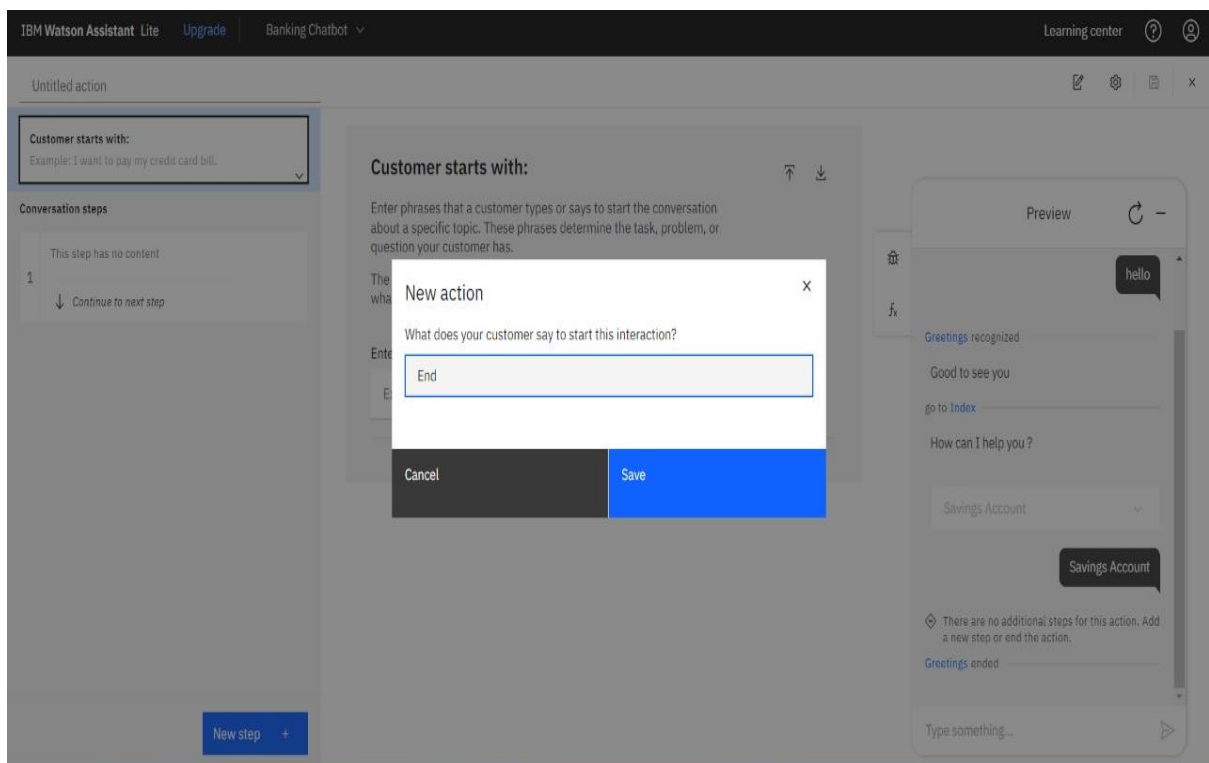
The purpose of index is to *build a service strategy and further engage clients with the new information sets.*





CREATION OF END ACTION :

By creating the end action is used to end the conversation so that the user can reinitiate the session again.



CREATING IBM SERVICE:

The screenshot shows the IBM Watson Assistant interface. A modal dialog titled "Create a new assistant" is open. The "Assistant name" field contains "Banking Chatbot". Below it, a note states: "Your assistant name will be kept internally and not visible to your customers". The "Description (optional)" field is empty, with a character count of 0/128. The "Assistant language" dropdown is set to "English (US)". At the bottom of the dialog are "Cancel" and "Create assistant" buttons. The background shows the "Home" page with a "Get started" section and a "Create a conversation" button.

IBM Watson Assistant Lite Upgrade Banking Chatbot Learning center

Home

Welcome, you're in the new Watson Assistant

Banking Chatbot | English (US)

No description

Get started

1 step left 0 min

- Learn about Watson Assistant 5 min
- Explore your learning center Explore at your own pace, and mark as complete
- Explore Watson Assistant features on interactive playground 2 min

Create a conversation

1 step left 5 min

Create a new assistant

Assistant name

Banking Chatbot

Your assistant name will be kept internally and not visible to your customers

Description (optional) 0/128

Add a description for this assistant

Assistant language

English (US)

This is the language your assistant will speak.

Cancel Create assistant

CREATING SAVING ACCOUNTS:

The screenshot shows the IBM Watson Assistant interface. A modal dialog titled "New action" is open. The "Customer starts with:" field contains "Savings". The dialog prompts the user to "What does your customer say to start this interaction?". At the bottom of the dialog are "Cancel" and "Save" buttons. The background shows the "Untitled action" page with a "Conversation steps" section and a "New step" button.

IBM Watson Assistant Lite Upgrade Banking Chatbot Learning center

Untitled action

Customer starts with:

Example: I want to pay my credit card bill.

Conversation steps

This step has no content

1

Continue to next step

New action

What does your customer say to start this interaction?

Savings

Cancel Save

New step +

Preview

IBM Watson Assistant

Lite

Upgrade

Banking Chatbot

Learning center

Savings

Customer starts with:

Savings

Conversation steps

Which type of savings account do you want to create ?

1

Zero Balance... Regular Savi... +1

Continue to next step

1 is Regular Savings Account

Great! Please take the following documents and head towards the nearest branch .

2

Free text

Go to action: End

New step +

Assistant says

Great! Please take the following documents and head towards the nearest branch .

1.Aadhar Card

2.Pan Card

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

Edit settings Edit passed values

Preview

Regular Savings Account

Great! Please take the following documents and head towards the nearest branch .

1.Aadhar Card

2.Pan Card

3.Passport size photos

thanks

go to End

Do you want to know about some other services?

Yes No

Type something...

CREATING CURRENT ACCOUNT ACTION:

IBM Watson Assistant

Lite

Upgrade

Banking Chatbot

Learning center

Untitled action

Customer starts with:

Example: I want to pay my credit card bill.

Conversation steps

This step has no content

1

Continue to next step

New step +

Customer starts with:

Enter phrases that a customer types or says to start the conversation about a specific topic. These phrases determine the task, problem, or question your customer has.

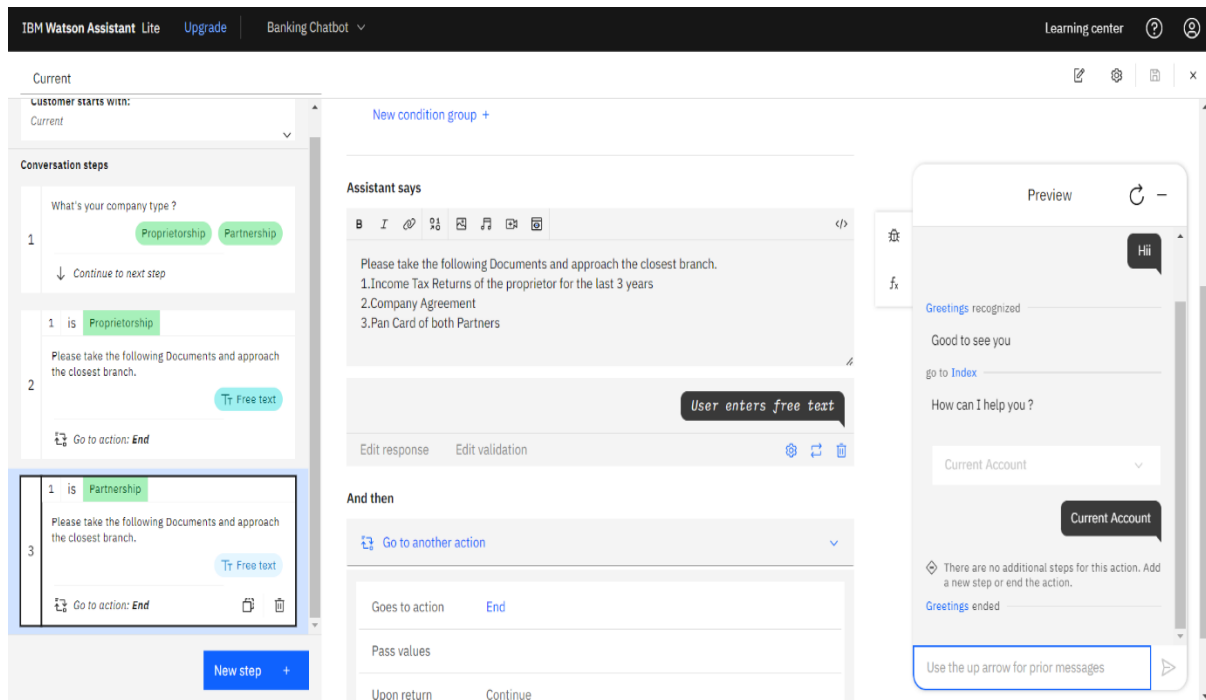
New action

What does your customer say to start this interaction?

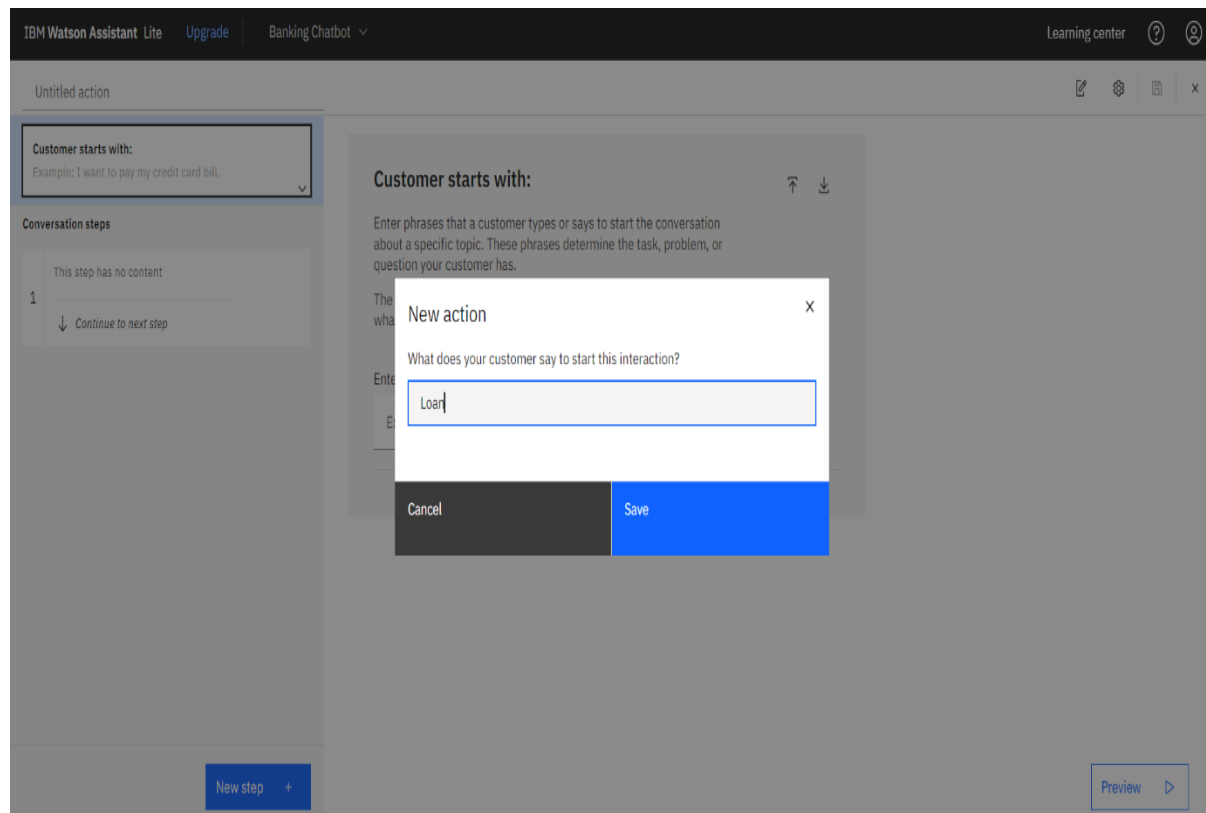
Current

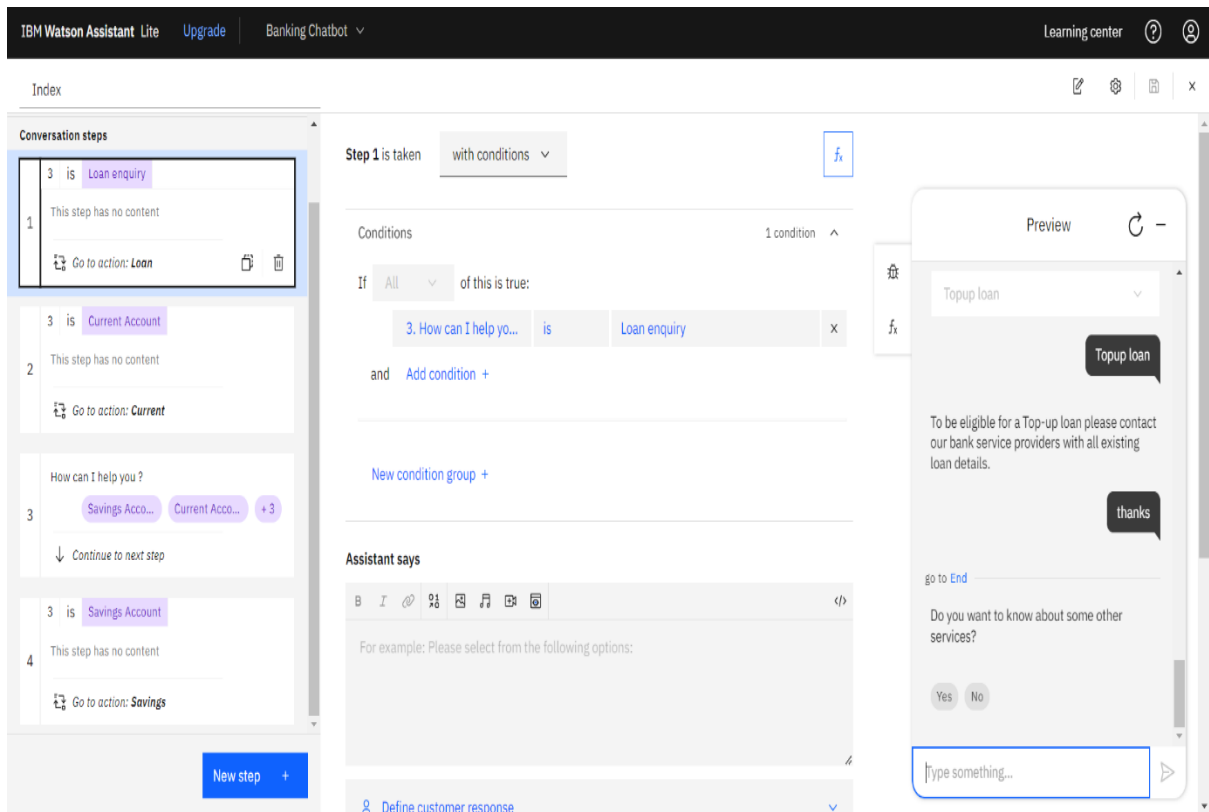
Cancel Save

Preview

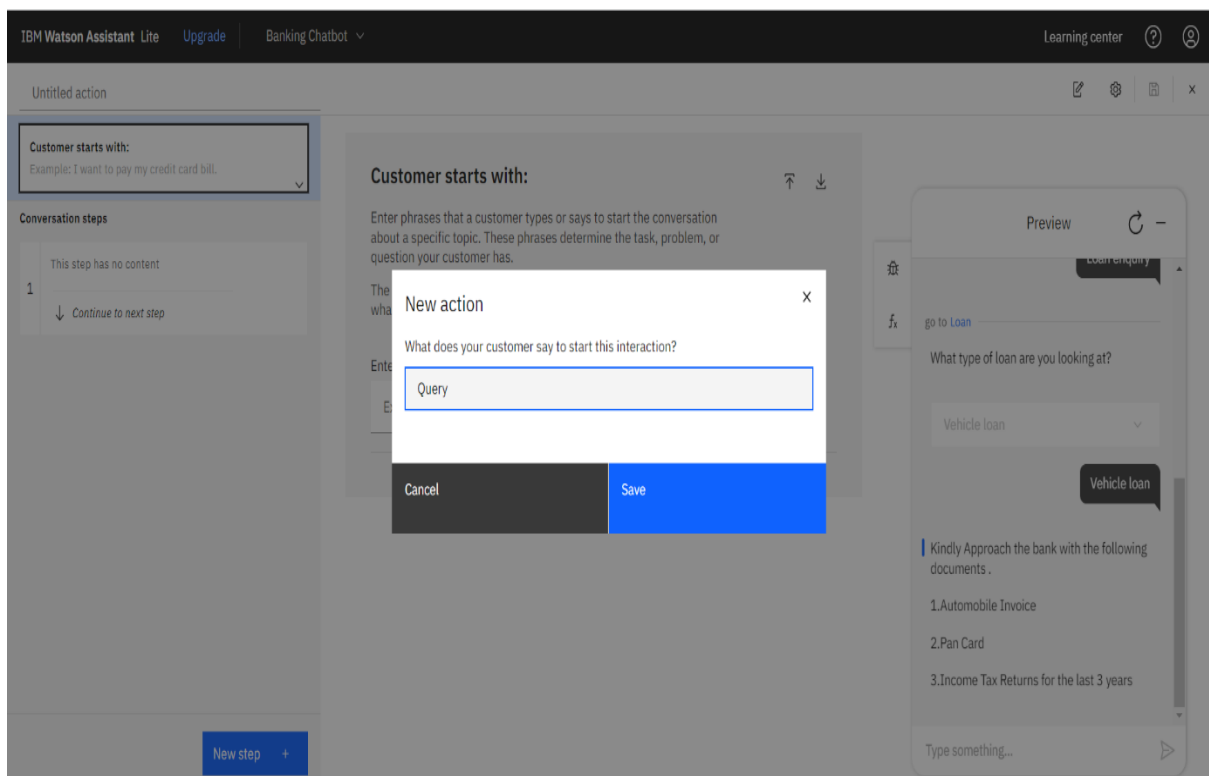


CREATING LOAN ACCOUNT ACTION:





CREATING GENERAL QUERY ACTION:



TBM Watson Assistant Lite

Upgrade

Banking Chatbot

Learning center

Index

Customer starts with:

Index

Conversation steps

4 is General query

1 This step has no content

Go to action: Query

4 is Loan enquiry

2 This step has no content

Go to action: Loan

4 is Current Account

3 This step has no content

Go to action: Current

How can I help you?

New step

Step 1 is taken with conditions

Conditions

1 condition

If All of this is true:

4. How can I help yo... is General query

and Add condition

New condition group

Assistant says

For example: Please select from the following options:

Define customer response

Preview

go to Query

Select the general queries listed below

List of branches

List of branches

CHENNAI, WEST MAMBALAM, CHINMAYA NAGAR, VIRUGAMPAKKAM, CHITLAPAKKAM, CIT NAGAR, DLF RAMAPURAM, EAST ABIRAMAPURAM, EGMORE BRANCH, IT AVENUE, KARAPAKKAM, KK NAGAR, KORATTUR, KOTTIVAKAM, KOTTURPURAM, KOYAMBEDU CHENNAI, MADAMBARKKAM

go to End

Do you want to know about some other

Type something...

CREATING NET BANKING ACTION:

TBM Watson Assistant Lite

Upgrade

Banking Chatbot

Learning center

Untitled action

Customer starts with:

Example: I want to pay my credit card bill.

Conversation steps

This step has no content

1

Continue to next step

New step

Customer starts with:

Enter phrases that a customer types or says to start the conversation about a specific topic. These phrases determine the task, problem, or question your customer has.

New action

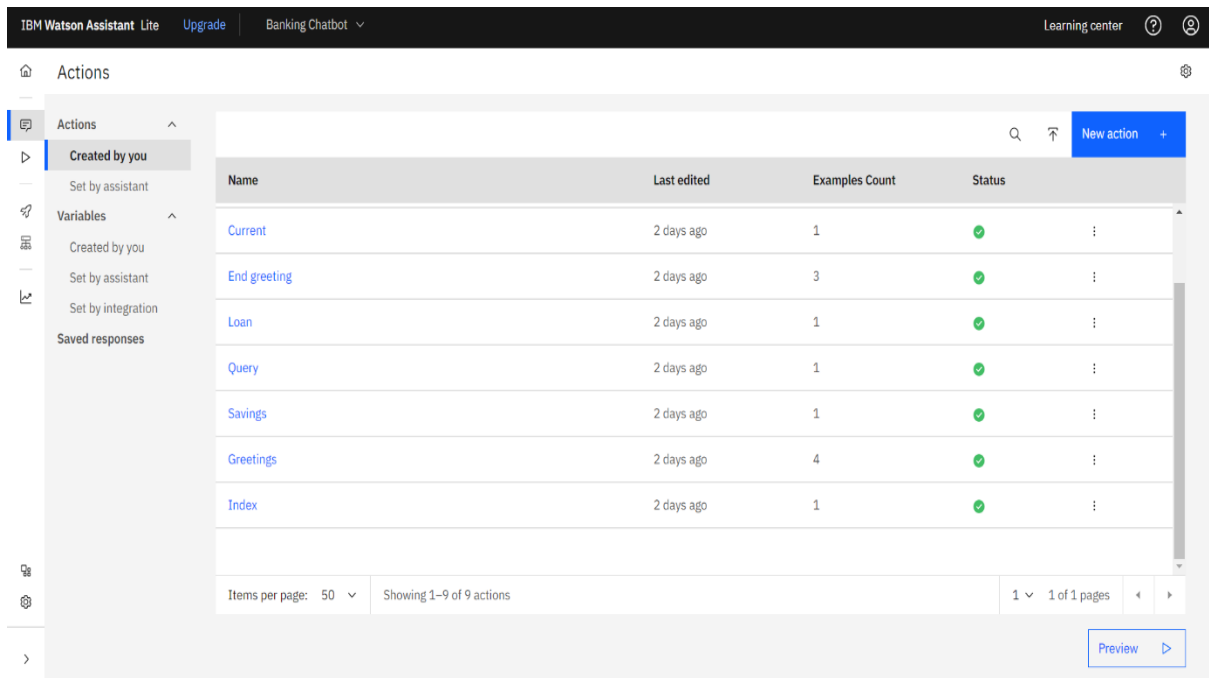
What does your customer say to start this interaction?

Net Banking

Cancel

Save

Preview



SOURCE CODE:

```
<!doctype html>
```

```
<html lang="en">
```

```
<head>
```

```
<!-- Required meta tags -->
```

```
<meta charset="utf-8">
```

```
<meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
```

```
<!-- Bootstrap CSS -->
```

```
<link rel="stylesheet"
```

```
href="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css"
```

```
integrity="sha384-
```

```
JcKb8q3iqJ61gNV9KGb8thSsNjpSL0n8PARn9HuZOnIxN0hoP+VmmDGMN5t9UJ0Z"
```

```
crossorigin="anonymous">
```

```
<link rel="stylesheet" type="text/css" href="css/style.css">
```

```
<link rel="stylesheet" type="text/css" href="css/navbar.css">
```

```
<title>AI based discourse for Banking Industry</title>
```

```
</head>
```



```
<body>
```

```
<?php
```

```
include 'navbar.php';
```

```
?>
```

```
<div class="container-fluid">
```

```
<!-- Introduction section -->
```

```
<div class="row intro py-1" style="background-color : #10d1ce;">
```

```
<div class="col-sm-12 col-md">
```

```
<div class="heading text-center my-5">
```

```
<h3>Welcome to</h3>
```

```
<h1> ALPHA BANK</h1>
```

```
</div>
```

```
</div>
```

```
<div class="col-sm-12 col-md img text-center">
```

```

```

```
</div>
```

```
</div>
```

```
<!-- Activity section -->
```

```
<div class="row activity text-center">
```

```
<div class="col-md act">
```

```

```

```
<br>
```

```
<a href="createuser.php"><button style="background-color : #277bc4;">Create  
a User</button></a>
```

```
</div>
```

```
<div class="col-md act">
```

```

```

```
<br>
```

```
        <a href="transfermoney.php"><button style="background-color :
#2785C4;">Make a Transaction</button></a>
```

```
    </div>
```

```
    <div class="col-md act">
```

```
        
```

```
        <br>
```

```
        <a href="transactionhistory.php"><button style="background-color :
#2785C4;">Transaction History</button></a>
```

```
    </div>
```

```
</div>
```

```
</div>
```

```
<footer class="text-center mt-5 py-2">
```

```
    <p>&copy; 2022. Made by <b>ALPHA GROUP</b> <br> Alpha Foundation</p>
```

```
</footer>
```

```
    <script src="https://code.jquery.com/jquery-3.5.1.slim.min.js" integrity="sha384-
DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUew+OrCXaRkfj"
crossorigin="anonymous"></script>
```

```
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/js/bootstrap.bundle.min.js"
integrity="sha384-
ho+j7jyWK8fNQe+A12Hb8AhRq26LrZ/JpcUGGOn+Y7RsweNrtN/tE3MoK7ZeZDyx"
crossorigin="anonymous"></script>
```

```
</body>
```

```
</html>
```

```
<!-- navbar -->
```

```
<nav class="navbar navbar-expand-md navbar-light bg-light">
```

```
    <a class="navbar-brand" href="index.php" style="color : #c05656;"><b> ALPHA
BANK</b></a>
```

```
    <button class="navbar-toggler" type="button" data-toggle="collapse" data-
target="#collapsibleNavbar">
```

```
        <span class="navbar-toggler-icon"></span>
```

```
    </button>
```

```
<div class="collapse navbar-collapse" id="collapsibleNavbar">
```

```
    <ul class="navbar-nav ml-auto">
```

```
        <li class="nav-item">
```

```

        <a class="nav-link" href="index.php" style="color : #C0392B;"><b>Home</b></a>
    </li>

    <li class="nav-item">

        <a class="nav-link" href="createuser.php" style="color : #C0392B;"><b>Create
User</b></a>

    </li>

    <li class="nav-item">

        <a class="nav-link" href="transfermoney.php" style="color :
#C0392B;"><b>Transfer Money</b></a>

    </li>

    <li class="nav-item">

        <a class="nav-link" href="transactionhistory.php" style="color :
#C0392B;"><b>Transaction History</b></a>

    </li>
</div>
</nav>
<script>
    window.watsonAssistantChatOptions = {
        integrationID: "42ea6fd5-4b99-4ad0-9fe8-4a5e41fd8690", // The ID of this integration.
        region: "us-south", // The region your integration is hosted in.
        serviceInstanceID: "2f9d8756-ae69-44cd-a61c-d1baee9e04de", // 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>

```

PROJECT DEMO LINK:

<https://web-chat.global.assistant.watson.appdomain.cloud/preview.html?backgroundImageUrl=https%3A%2F%2Fus-south.assistant.watson.cloud.ibm.com%2Fpublic%2Fimages%2Fupx-2f9d8756-ae69-44cd-a61c-d1baee9e04de%3A%3A5d8e57c7-35c6-4192-b950-5796a8ae7692&integrationID=42ea6fd5-4b99-4ad0-9fe8-4a5e41fd8690®ion=us-south&serviceInstanceID=2f9d8756-ae69-44cd-a61c-d1baee9e04de>