LOVELY PROFESSIONAL UNIVERSITY
Transforming Education Transforming India

AI IN FINANCE
(Pesonalized banking)

Team Memebers

Prabin Teli

Submitted to:

Dr.Rahul

Table of Content :

Benefits of AI in Personalized Banking

- AI can provide significant benefits to both banks and customers in personalized banking.
- AI can help them make smarter financial decisions based on their individual needs and goals.
- AI-powered chatbots can also provide quick and easy support for common banking tasks, such as transferring funds or checking account balances.

Challenges of Implementing AI in Finance

- There are challenges that must be addressed. One of the biggest challenges is data privacy and security.
- With access to sensitive financial information, AI systems must be designed to protect customer data from cyber threats and ensure security.
- Another challenge is ensuring that AI systems are transparent and explainable. Customers need to understand how AI algorithms are making decisions about their finances, and banks need to be able to justify those decisions.

Research in AI and Banks

- As AI technology advances, research is being conducted to explore the potential applications of AI in the banking sector.
- This research is uncovering new opportunities to make banking more efficient and personalized.
- While also considering the potential implications of AI on jobs and the economy.

Examples of AI in Personalized Banking

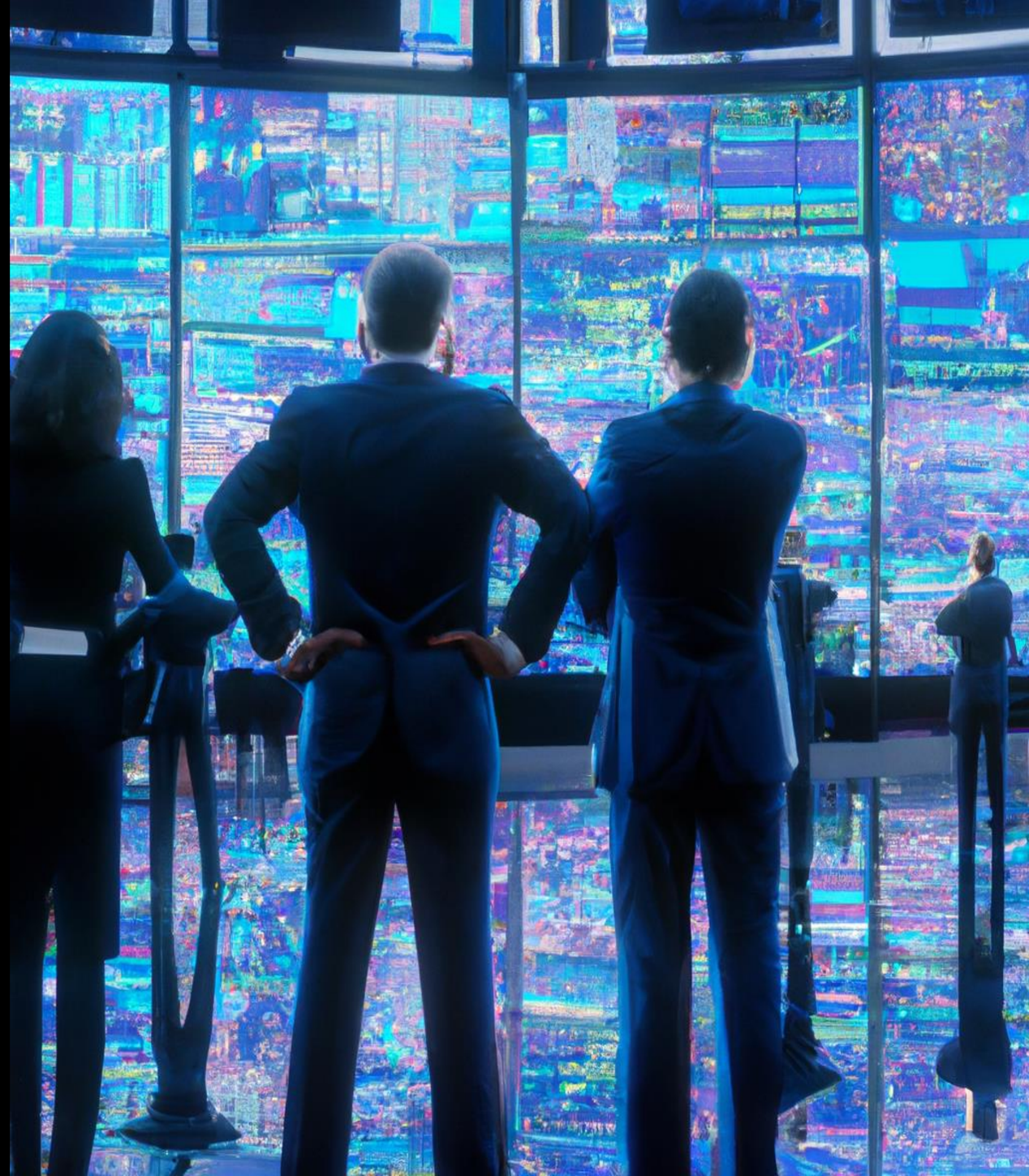
- There are already many examples of AI being used in personalized banking. One example is robo-advisors, which use AI algorithms to provide investment advice and portfolio management services.

- Another example is predictive analytics, which uses machine learning to identify patterns in customer data and make personalized recommendations.

- AI-powered chatbots are also becoming increasingly popular in customer service. These chatbots can answer common questions, provide account information, and even help customers complete transactions.

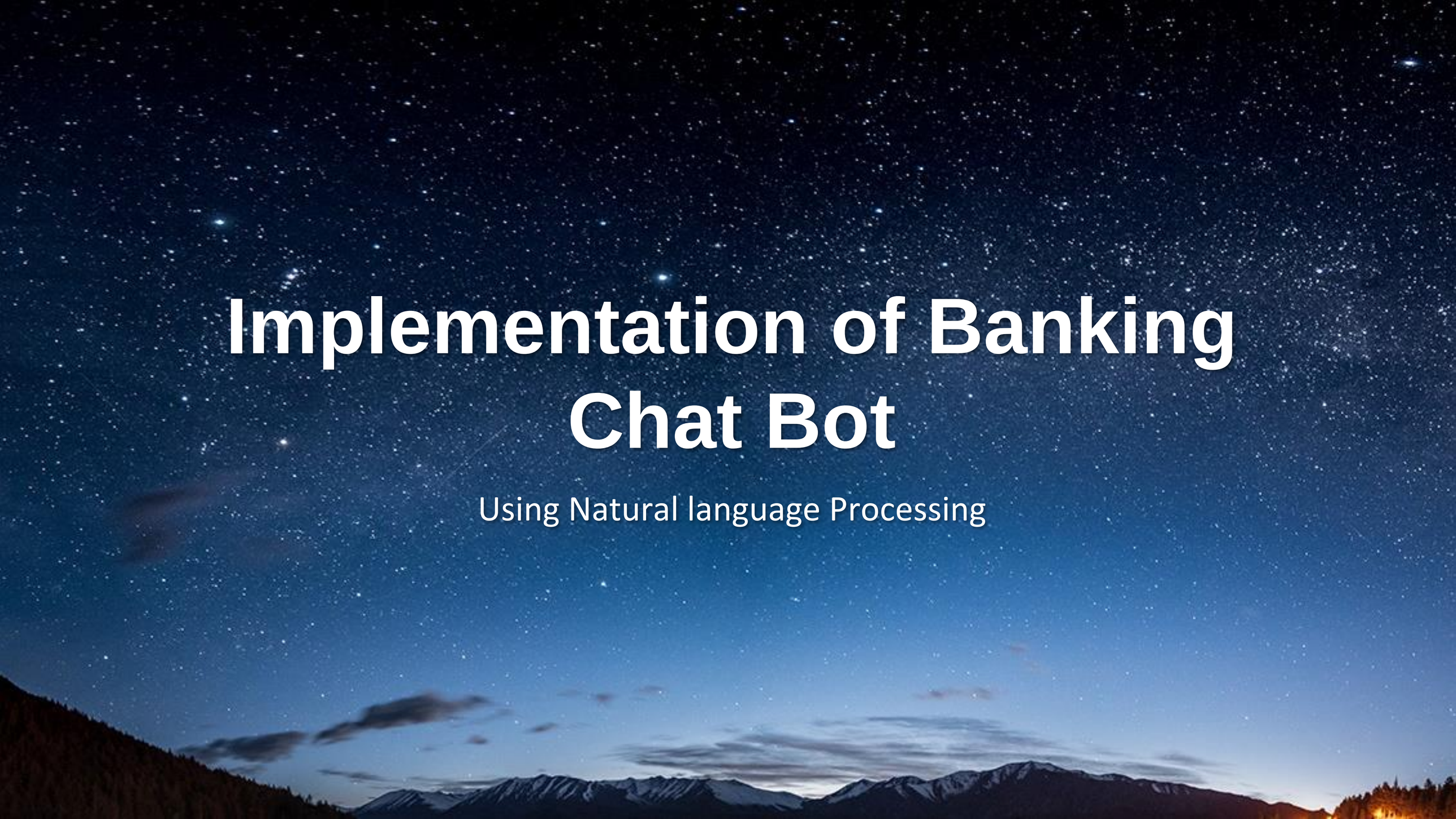
Future of AI in Finance

- The future of AI in finance looks promising, with continued growth and innovation expected in personalized banking.
- As AI technology continues to evolve, we can expect to see even more sophisticated algorithms and applications in the finance industry.
- However, there are also concerns about the impact of AI on jobs and the economy.
- As AI systems become more advanced, they may replace human workers in certain roles.



Conclusion

- In conclusion, AI is transforming the finance industry, particularly in personalized banking.
- While there are challenges to implementing AI systems, the benefits to both banks and customers are significant.
- However, it is important to consider the potential impact of AI on jobs and the economy, and to work towards a future where the benefits of AI are shared fairly across society.



Implementation of Banking Chat Bot

Using Natural language Processing

Step by step analysis of implementation

--TAKING USER INPUT

Firstly, Run the Chatbot and then it gives a greeting to the user and then user has to give an input and that input will be stored in the variable user_input.

```
def bank_assistant():
    print("Hello !,My name is Prabin, I'm your bank assistant. How can I help you today?")

    # loop until the user says goodbye
    while True:
        user_input = input().lower()

        # check for greetings
        if any(greeting in user_input for greeting in greetings):
            print(get_response(greetings))

        # check for thanks
        elif any(thank in user_input for thank in thanks):
            print(get_response(thanks))

        # check for balance enquiries
        elif any(balance_enquiry in user_input for balance_enquiry in balance_enquiries):
            print("Your current balance is $1000.")

        # check for account questions
        elif any(account_question in user_input for account_question in account_questions):
            print("We offer savings, checking, and money market accounts. You can open an account online or at any of our branches. Please bring
two forms of ID and proof of address and Bring 2 Passport size Photos.")

        # check for loan enquiries
        elif any(loan_enquiry in user_input for loan_enquiry in loan_enquiries):
            print(
                "We offer personal loans, home loans, and business loans. You can apply online or at any of our branches. Please bring proof of income
and a credit report.")

        # check for goodbyes
        elif any(goodbye in user_input for goodbye in goodbyes):
            print(get_response(goodbyes))
            break

        # if the user's input doesn't match any of the above, ask them to repeat
        else:
            print("I'm sorry, I didn't understand. Can you please repeat? OR ")
            print("I'm unable to response.Please contact to our nearest branch ");


# call the main function to start the chatbot
bank_assistant()
```

-- PROCESSING THE INPUT

Once the user's input is stored in the variable then in the next step the user's input is processed using the spacy library and the training pipeline and the output will then be stored in another variable.

```
def bank_assistant():
    print("Hello !,My name is Prabin, I'm your bank assistant. How can I help you today?")

    # loop until the user says goodbye
    while True:
        user_input = input().lower()

        # check for greetings
        if any(greeting in user_input for greeting in greetings):
            print(get_response(greetings))

        # check for thanks
        elif any(thank in user_input for thank in thanks):
            print(get_response(thanks))

        # check for balance enquiries
        elif any(balance_enquiry in user_input for balance_enquiry in balance_enquiries):
            print("Your current balance is $1000.")

        # check for account questions
        elif any(account_question in user_input for account_question in account_questions):
            print("We offer savings, checking, and money market accounts. You can open an account online or at any of our branches. Please bring
two forms of ID and proof of address and Bring 2 Passport size Photos.")

        # check for loan enquiries
        elif any(loan_enquiry in user_input for loan_enquiry in loan_enquiries):
            print(
                "We offer personal loans, home loans, and business loans. You can apply online or at any of our branches. Please bring proof of income
and a credit report.")

        # check for goodbyes
        elif any(goodbye in user_input for goodbye in goodbyes):
            print(get_response(goodbyes))
            break

        # if the user's input doesn't match any of the above, ask them to repeat
        else:
            print("I'm sorry, I didn't understand. Can you please repeat? OR ")
            print("I'm unable to response.Please contact to our nearest branch ");


# call the main function to start the chatbot
bank_assistant()
```

-- MATCHING THE PROCESSED INPUT

After processing the input provided by the user, the next step is to match the processed input with the banking services and check if there are any synonyms using spaCy library.

```
 # define some responses for the chatbot
greetings = ["hello", "hi", "hey", "what's up","good morning","good afternoon"]
thanks = ["thank you", "thanks", "great", "awesome"]
goodbyes = ["goodbye", "bye", "see you later"]
balance_enquiries = ["what is my balance?", "how much do I have?", "can you tell me my balance?","check my balance","my balance"]
account_questions = ["what types of accounts do you offer?", "how can I open an account?","what are the requirements for opening an account?"]
loan_enquiries = ["what types of loans do you offer?", "how can I apply for a loan?","what are the requirements for getting a loan?"]
```

--PRODUCING THE ACCURATE OUTPUT

After all the processing of input and matching with the banking services, the last and final task is to give the output to the user based on all the results. If the output is not found, then the default string mentioned in the responses dictionary is displayed

```
# define some responses for the chatbot
greetings = ["hello", "hi", "hey", "what's up","good morning","good afternoon"]
thanks = ["thank you", "thanks", "great", "awesome"]
goodbyes = ["goodbye", "bye", "see you later"]
balance_enquiries = ["what is my balance?", "how much do I have?", "can you tell me my balance?","check my balance","my balance"]
account_questions = ["what types of accounts do you offer?", "how can I open an account?","what are the requirements for opening an account?"]
loan_enquiries = ["what types of loans do you offer?", "how can I apply for a loan?","what are the requirements for getting a loan?"]
```

Output :

-- UNDERSTANDING THE SENTENCE.

In the test case mentioned in the screenshot, The user provided input as "check my account balance". In the implementation, there is no such string. The user_input is pre-processed using NLP and then response is given by the chatbot.

```
Hello !,My name is Prabin, I'm your bank assistant. How can I help you today?
hi
hey
what is my balance?
Your current balance is $1000.
how can I open an account?
I'm sorry, I didn't understand. Can you please repeat? OR
I'm unable to response.Please contact to our nearest branch
what types of loans do you offer?
We offer personal loans, home loans, and business loans. You can apply online or at any of our branches. Please bring proof of income and a credit report.
what types of accounts do you offer?
We offer savings, checking, and money market accounts. You can open an account online or at any of our branches. Please bring two forms of ID and proof of
```

Thank You!