# AI Based Discourse for Banking Industry

## Based on Artificial Intelligence

PROJECT REPORT

***Submitted by***


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***in partial fulfillment for the award of the degree of***

**BACHELOR OF ENGINEERING**

**IN**

**COMPUTER SCIENCE AND ENGINEERING**

# INDEX

# ABSTRACT

Banking Application- Developing an application using HTML, CSS, JS, and SQL - supervisory features and building a chatbot using Watson's assistant for customer query or support.

This chat should have the following capabilities.

- 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.

Online Banking, also known as net banking, e-banking or online banking, is the facility provided by banks and financial institutions which allows customers to use banking services via internet.

There are scores of services like online money transfer, account opening, bill payment, tracking account activity, etc., which are made available to customers with the help of online banking.

Online banking also allows banks to advertise their products and services in a manner that it reaches out millions of customers.

However, in order to use online banking, an individual will require access to the internet, which is scarcely available in rural areas

# Chapter 1

# INTRODUCTION

Banks have traditionally been in the forefront of harnessing technology to improve their products, services and efficiency. They have, over a long time, been using electronic and telecommunication networks for delivering a wide range of value-added products and services. The delivery channels include direct dial – up connections, private networks, public networks etc and the devices include telephone, Personal Computers including the Automated Teller Machines, etc. With the popularity of PCs, easy access to Internet and World Wide Web (WWW), Internet is increasingly used by banks as a channel for receiving instructions and delivering their products and services to their customers. This form of banking is generally referred to as Internet Banking, although the range of products and services offered by different banks vary widely both in their content and sophistication.

In India, too i-banking has taken roots. A number of banks have set up banking portals allowing their customers to access facilities like obtaining information, querying on their accounts, etc. Soon, still higher level of online services will be made available. Other banks will sooner than later, take to Internet banking. The Indian scenario is discussed in detail in Chapter-4 of this report.

The motivation to create this project has many sources

- To increase knowledge deeply in Python and in web development
- To gain good experience in designing

# CHAPTER 2

# LITERATURE SURVEY

Title:

- Drivers Of Artificial Intelligence In Banking Service Sectors,

Author and year of publication:

- Mohamed Hussain Thowfeek.,Et Al.,[2020]

Proposed work:

- Artificial Intelligence Is Of Interest To Researchers . Due To Recent Technology Developments And Faster Data Accessibility, It Is Now Closer To Commercial Adoption. Using Panel Data From 28 Semi-Structured Interviews With Banking Ai Professionals, This Study Investigates The Drivers And Constraints To Effective Ai Deployment In The Banking Sector.

Title:

- Banks Banking On AI

Author and year of publication:

- Kamal Singh.,[2020]

Proposed work:

- Allowing Electronic Equipment To Do Tasks That Would Normally Need Human Intellect, Such As Visual Perception, Speech Recognition, Decision-Making, And Language Translation "The Art And Science Of Constructing Intelligent Machines" Ai Technology Has Only Lately Witnessed Rapid Growth, Attracting The Attention Of A Wide Variety Of Stakeholders, Including The Banking Sector.

# CHAPTER 3

# SYSTEM REQUIREMENTS SPECIFICATION

## Hardware requirements

Minimum hardware specification

- Microprocessor: **2.0 GHz** and above CPU based on either AMD or INTEL i3
- Main memory: **8 GB RAM**
- Hard Disk : **60 GB**
- Keyboard: **QWERTY** Keyboard
- Mouse :**2 or 3** Button mouse
- Monitor: **1024 x 768** display resolution

## Software requirements

Minimum software specification

- Operating system: WINDOWS 10, 11
- X86
- X64(WoW)
- Mouse Driver
- 2**GB** Graphics Driver

# CHAPTER 4

# PROJECT TOOLS

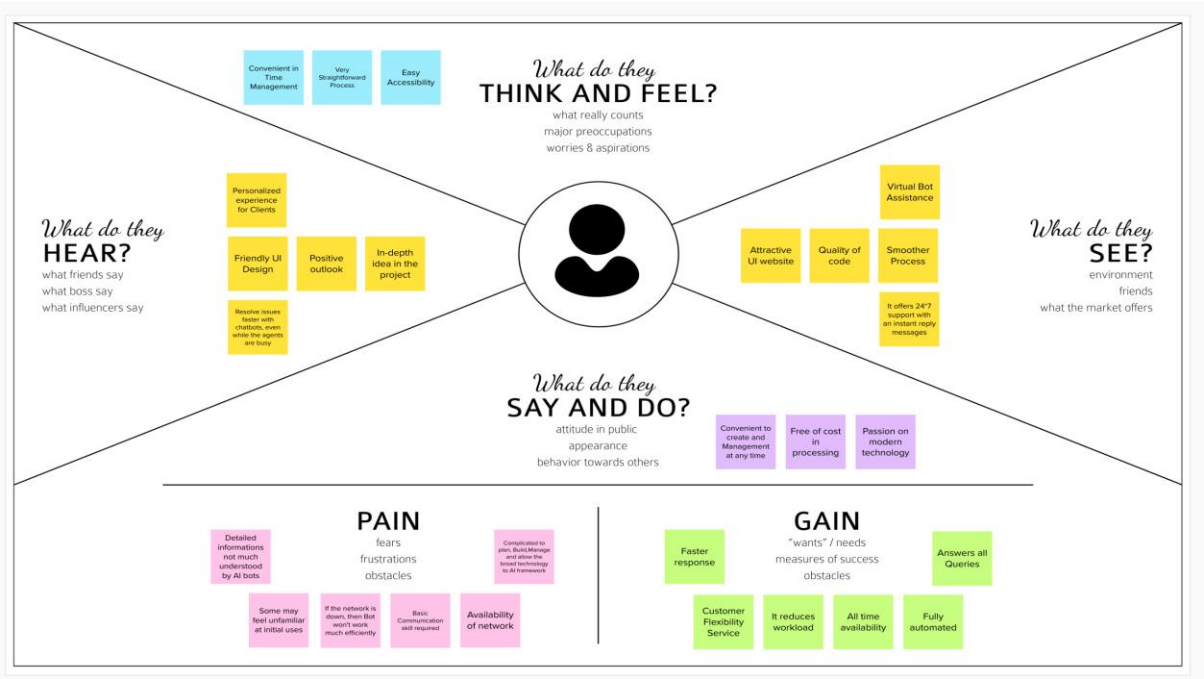
Visual Studio Code, deploying frontend codes

JetBrains IntelliJ, deploying backend connectivity

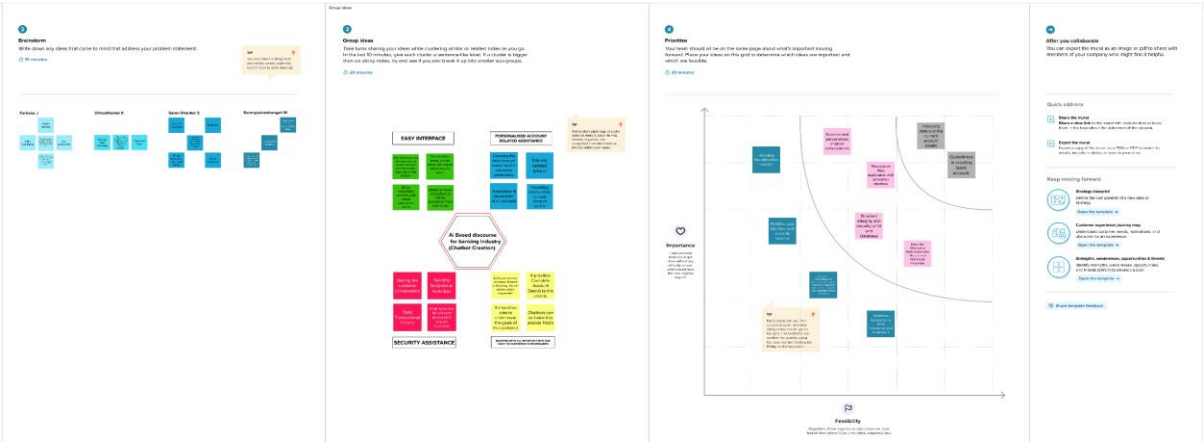
# CHAPTER 5

# PROJECT METHODOLOGY AND IDEOLOGY

Empathy map, exploring Overall idea of the project




Brainstorm, exploring individual team member ideas



# CHAPTER 6

# FRONT-END DEVELOPMENT

HTML

- HTML- “Hypertext Markup Language”-is the language used to tell your web browser what each part of a website is. So, using HTML, you can define headers, paragraphs, links, images, and more, so your browser knows how to structure the web page you're looking at.

CSS

- It is the coding language that gives a website its look and layout. Along with HTML, CSS is fundamental to web design. Without it, websites would still be plain text on white backgrounds.

JS

- Js makes responsive design easier. JavaScript has become integral to the Internet experience as developers build increased interaction and complexity into their applications. Search engines, ecommerce, content management systems, responsive design, social media and phone apps would not be possible without it

**CODES**

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Form UX</title>

    <link rel="stylesheet" href="style0.css">

</head>
<body>

    <div class="form-parent">
        <div class="sign-up-img"></div>
        <div class="sign-in-img"></div>

        <div class="form-container">
            <div class="form" id="sign-in-form">
                <form action="validation.php" method="post">
                <h1 class="title">sign in</h1>
                <div class="fields">
                    <input type="email" name="user" placeholder="usernameID">
                    <input type="password" name="password" placeholder="password">
                </div>
                <div class="submit-container">
                    <button type="submit" class="btn">sign in</button>
                    <p class="link" onclick="switchForm('register')">new here ? sign up here</p>
                </div>
                </form>
```

```
        </div>
        <form action="registration.php" method="post">
        <div class="form" id="sign-up-form">
          <h1 class="title">sign up</h1>
          <div class="fields">
            <input type="text" placeholder="name">
            <input type="text" placeholder="username">
            <input type="email" name="user" placeholder="email">
            <input type="password" name="password" placeholder="password">
          </div>
          <div class="submit-container">
           <button type="submit" class="btn">sign up</button>
            <p class="link" onclick="switchForm('login')">already have an account ? sign in here</p>
          </div>
        </div>
        </form>
      </div>

  </div>

  <script src="app.js"></script>

</body>
</html>
/* ===== Google Font Import - Poppins ===== */
@import url('https://fonts.googleapis.com/css2?family=Poppins:wght@200;300;400;500;600&display=swap');
*{
  margin: 0;
```

```
    padding: 0;
    box-sizing: border-box;
    font-family: 'Poppins', sans-serif;
}
.main{
    width: 100%;
    background: linear-gradient(to top, rgba(0,0,0,0.5)50%,rgba(0,0,0,0.5)50%), url(1.jpg);
    background-position: center;
    background-size: cover;
    height: 109vh;
}
body{
    min-height: 100vh;
    display: flex;
    align-items: center;
    justify-content: center;
    background: linear-gradient(to top, rgba(0,0,0,0.5)50%,rgba(0,0,0,0.5)50%),url(1.jpg);
    background-position: center;
    background-size: cover;

}
.container{
    position: relative;
    max-width: 900px;
    width: 100%;
    border-radius: 6px;
    padding: 30px;
    margin: 0 15px;
    background-color: #fff;
```

```
    box-shadow: 0 5px 10px rgba(0,0,0,0.1);
}
.container header{
    position: relative;
    font-size: 20px;
    font-weight: 600;
    color: #333;
}
.container header::before{
    content: "";
    position: absolute;
    left: 0;
    bottom: -2px;
    height: 3px;
    width: 27px;
    border-radius: 8px;
    background-color: #4070f4;
}
.container form{
    position: relative;
    margin-top: 16px;
    min-height: 490px;
    background-color: #fff;

    overflow: hidden;
}
.container form .form{
    position: absolute;
    background-color: #fff;
```

```
    transition: 0.3s ease;
}
.container form .form.second{
    opacity: 0;
    pointer-events: none;
    transform: translateX(100%);

}
form.secActive .form.second{
    opacity: 1;
    pointer-events: auto;
    transform: translateX(0);
}
form.secActive .form.first{
    opacity: 0;
    pointer-events: none;
    transform: translateX(-100%);
}
.container form .title{
    display: block;
    margin-bottom: 8px;
    font-size: 16px;
    font-weight: 500;
    margin: 6px 0;
    color: #333;
}
.container form .fields{
    display: flex;
    align-items: center;
    justify-content: space-between;
```

```
    flex-wrap: wrap;
}
form .fields .input-field{
    display: flex;
    width: calc(100% / 3 - 15px);
    flex-direction: column;
    margin: 4px 0;
}
.input-field label{
    font-size: 12px;
    font-weight: 500;
    color: #2e2e2e;
}
.input-field input, select{
    outline: none;
    font-size: 14px;
    font-weight: 400;
    color: #333;
    border-radius: 5px;
    border: 1px solid #aaa;
    padding: 0 15px;
    height: 42px;
    margin: 8px 0;
}
.input-field input :focus,
.input-field select:focus{
    box-shadow: 0 3px 6px rgba(0,0,0,0.13);
}
.input-field select,
.input-field input[type="date"]{
```

```
    color: #707070;
}
.input-field input[type="date"]:valid{
    color: #333;
}
.container form button, .backBtn{
    display: flex;
    align-items: center;
    justify-content: center;
    height: 45px;
    max-width: 200px;
    width: 100%;
    border: none;
    outline: none;
    color: #fff;
    border-radius: 5px;
    margin: 25px 0;
    background-color: #4070f4;
    transition: all 0.3s linear;
    cursor: pointer;
}
.container form .btnText{
    font-size: 14px;
    font-weight: 400;
}
form button:hover{
    background-color: #265df2;
}
form button i,
form .backBtn i{
```

```
    margin: 0 6px;
}
form .backBtn i{
    transform: rotate(180deg);
}
form .buttons{
    display: flex;
    align-items: center;
}
form .buttons button , .backBtn{
    margin-right: 14px;
}

@media (max-width: 750px) {
    .container form{
        overflow-y: scroll;
    }
    .container form::-webkit-scrollbar{
       display: none;
    }
    form .fields .input-field{
        width: calc(100% / 2 - 15px);
    }
}

@media (max-width: 550px) {
    form .fields .input-field{
        width: 100%;
    }
}
```

# BACKEND DEVELOPMENT

phpMyAdmin

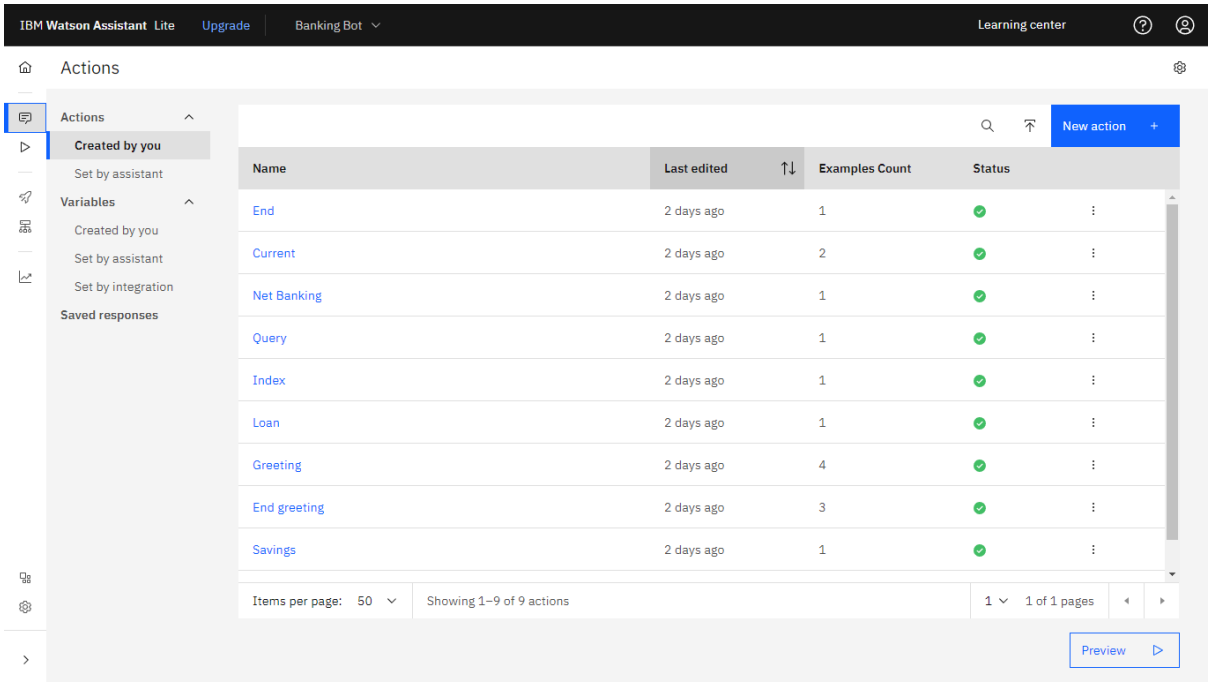
is a free and open-source administration tool for MySQL and MariaDB. As a portable web application written primarily in PHP, it has become one of the most popular MySQL administration tools, especially for web hosting services. phpMyAdmin is most often used by companies with 10-50 employees and 1M-10M dollars in revenue.

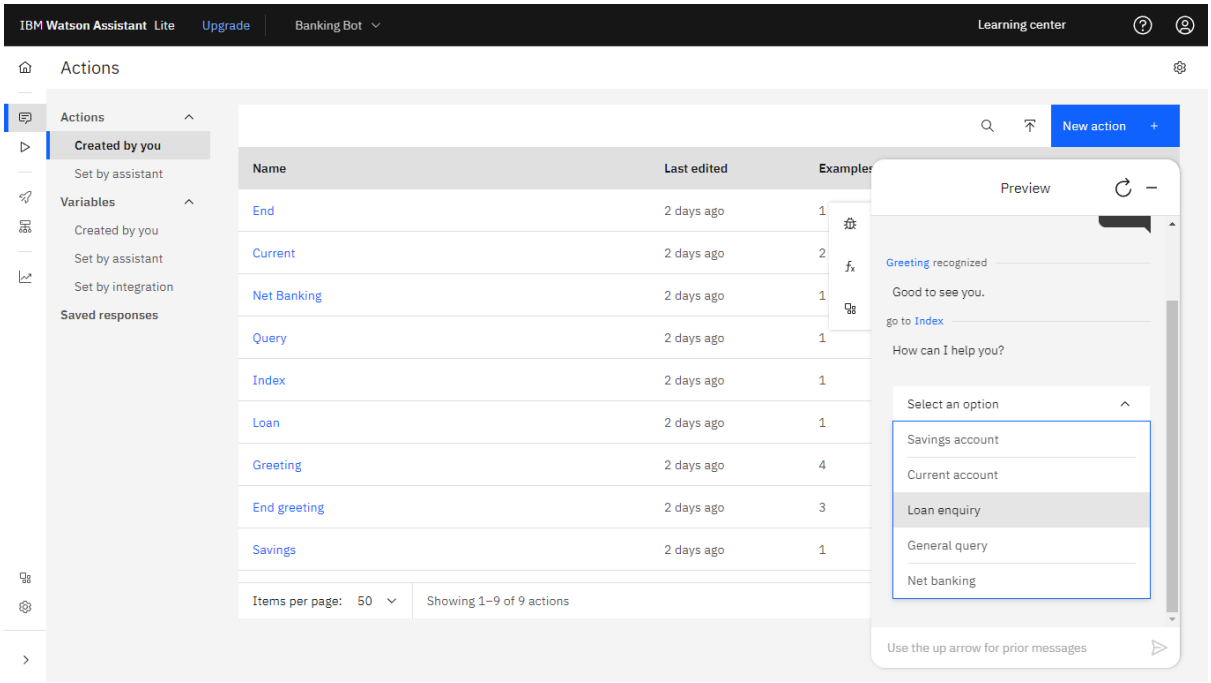
The main purpose of the tool is used to store user registration credentials and passwords for verification purpose.

# CHAPTER 7

# IBM WATSON CHATBOT

BM Watson Assistant uses artificial intelligence that understands customers in context to provide fast, consistent, and accurate answers across any application, device, or channel. Remove the frustration of long wait times, tedious searches, and unhelpful chatbots with the leader in trustworthy AI.



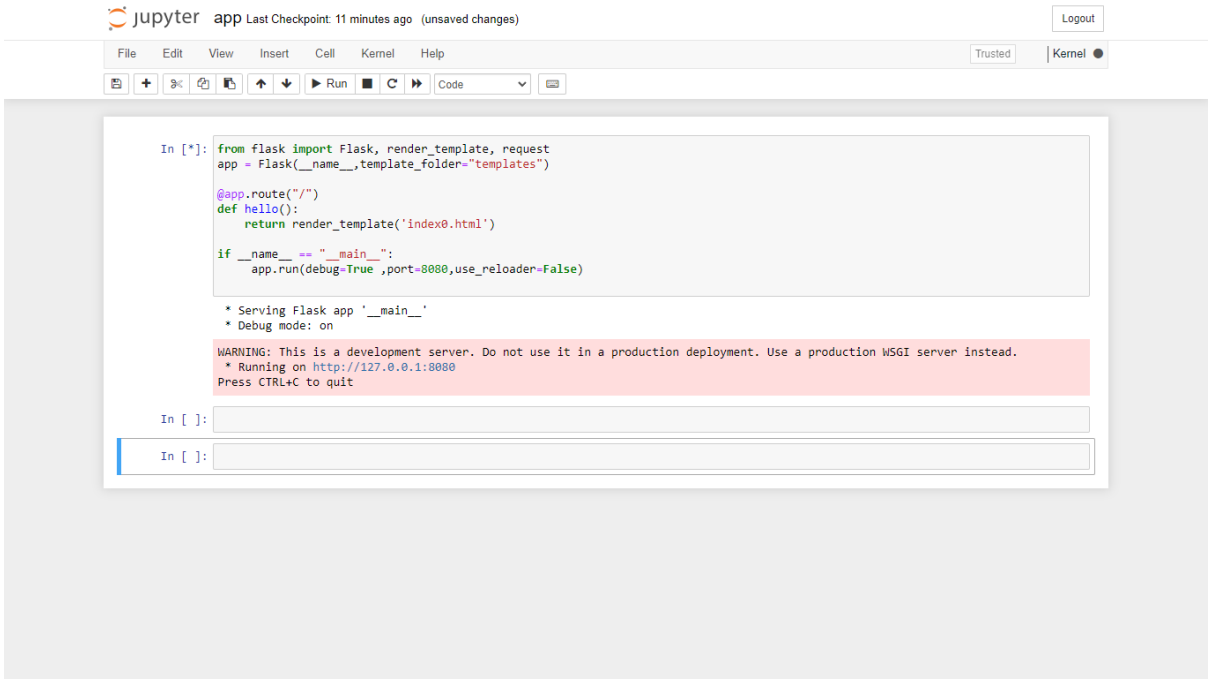



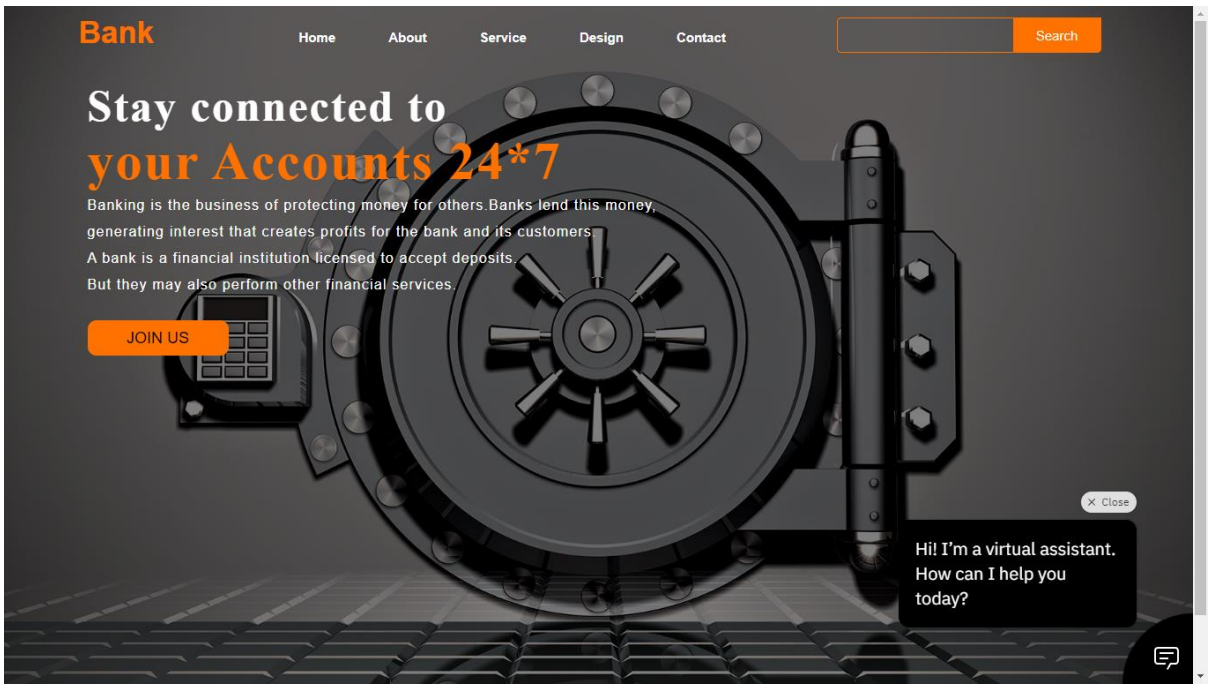
The objectives of the chatbot includes

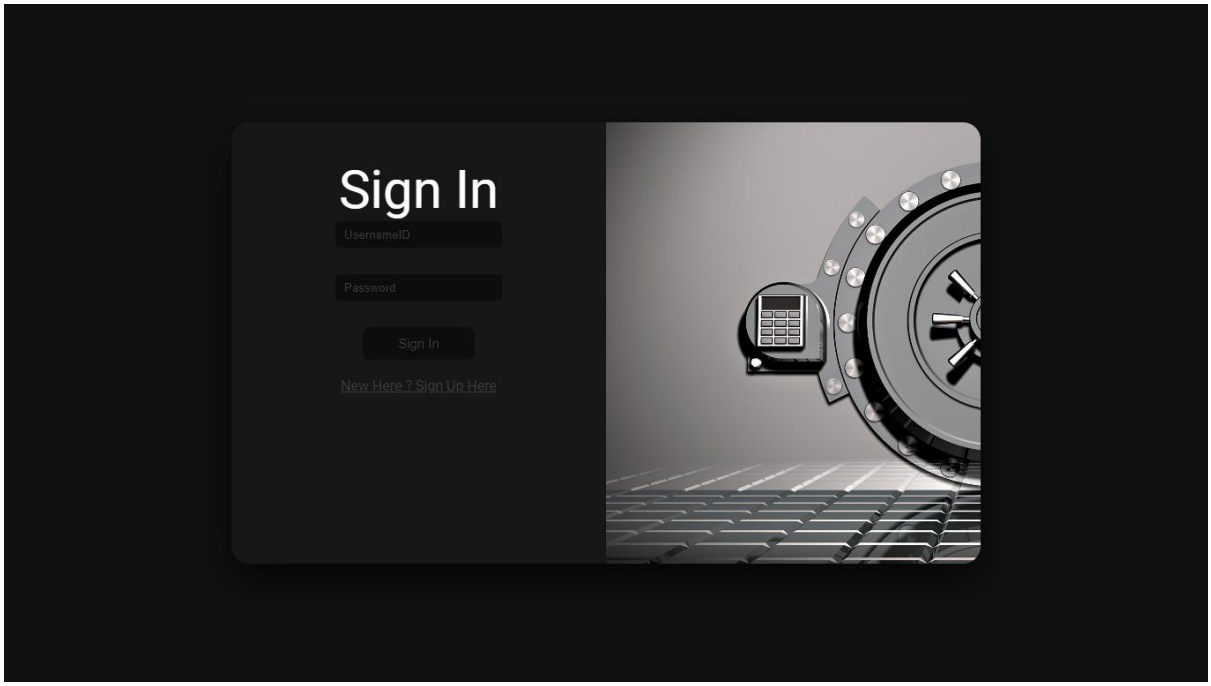
- The Bot should be able to guide a customer to create a bank account.
- The Bot should be able to answer loan queries.
- The Bot should be able to answer general banking queries.
- The Bot should be able to answer queries regarding net banking.

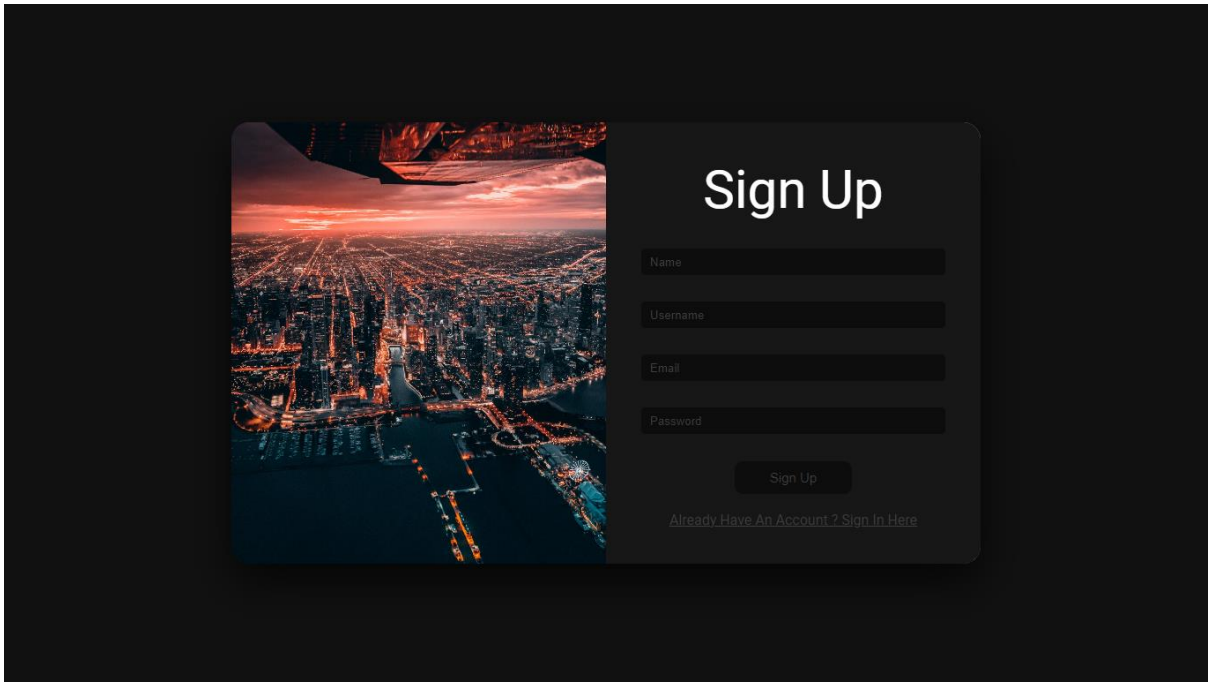
# CHAPTER 8

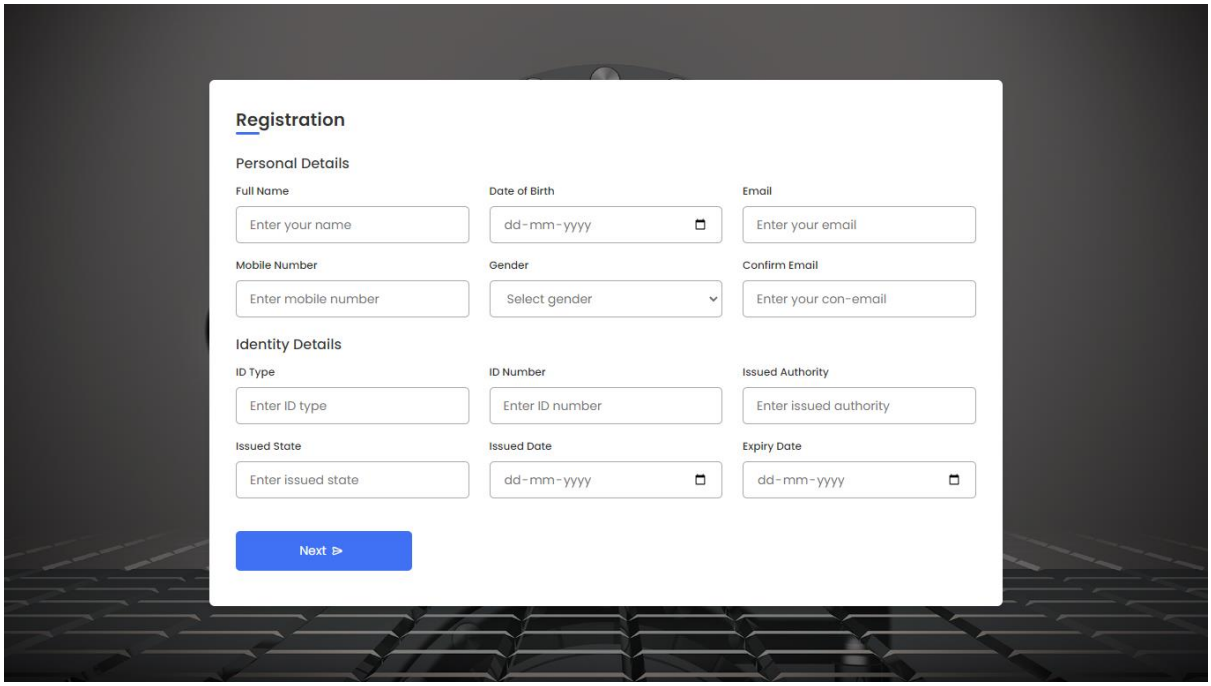
# Results and Snapshots

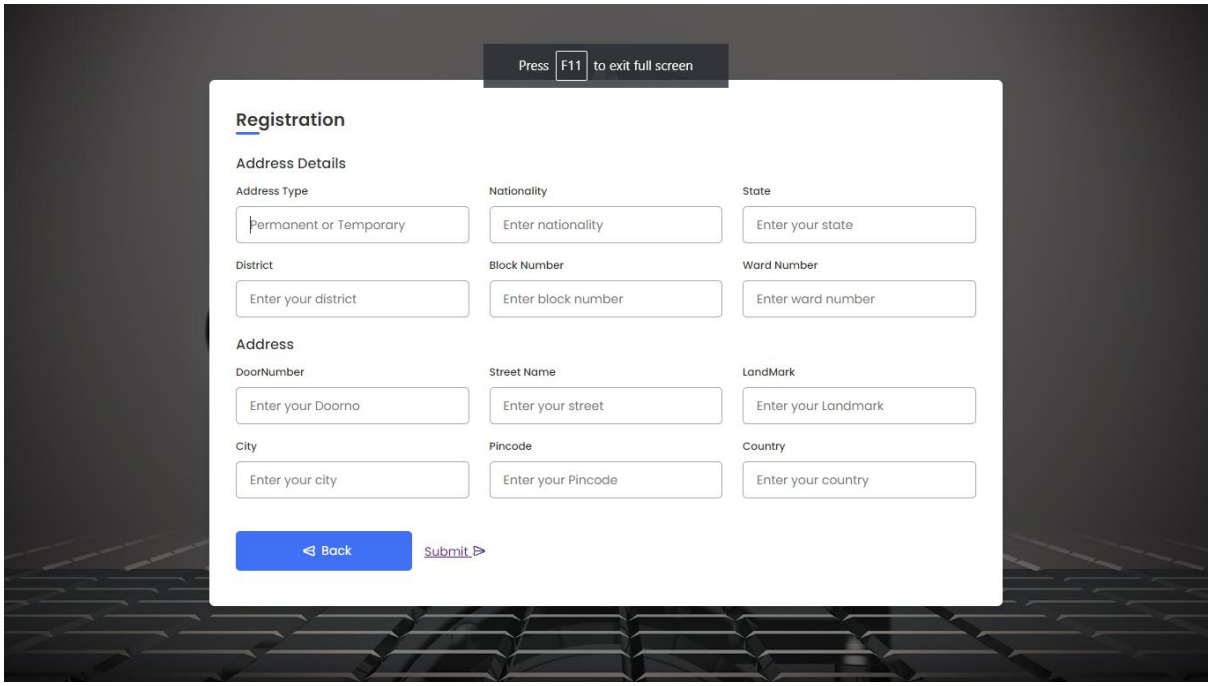


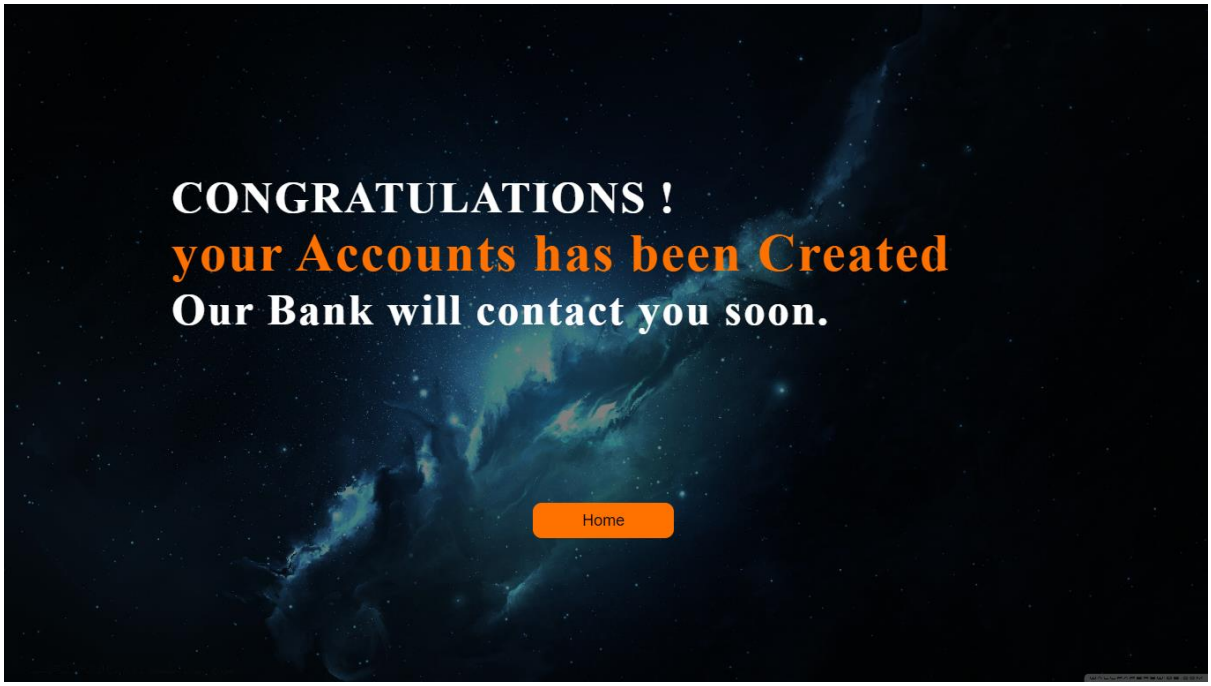




Sign In
UsernameID
Password
Sign In
New Here ? Sign Up Here

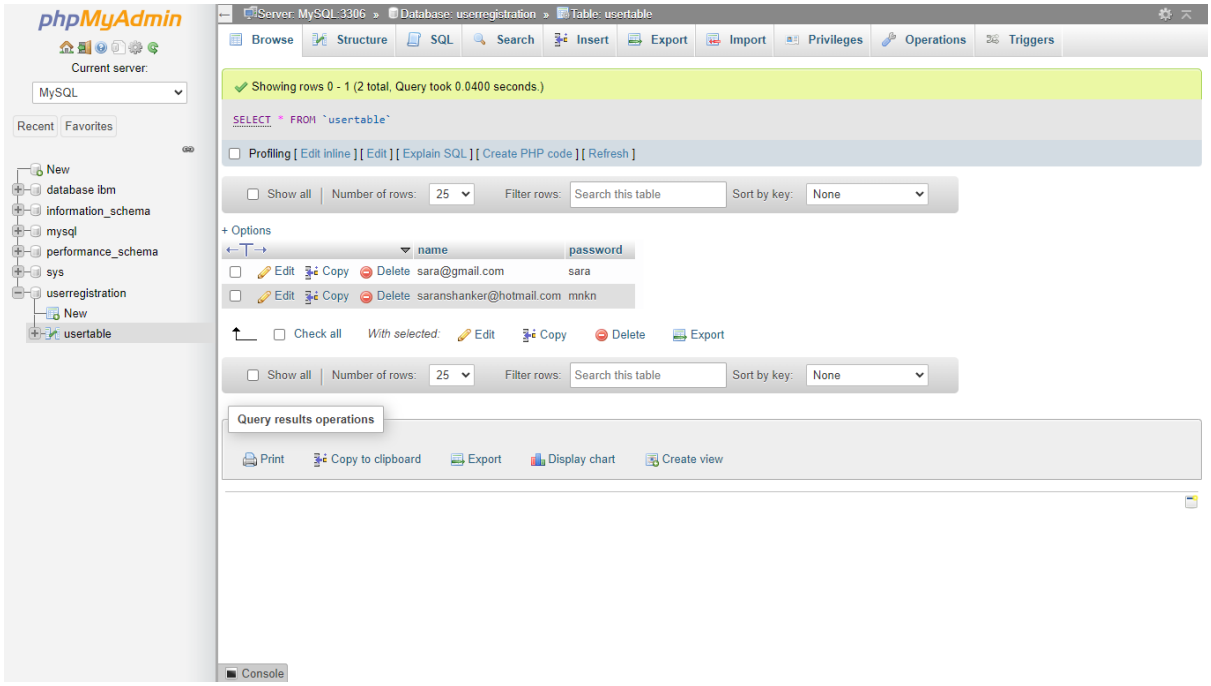

Sign Up
Name
Username
Email
Password
Sign Up
Already Have An Account ? Sign In Here


Registration
Personal Details
Full Name
Enter your name
Date of Birth
dd-mm-yyyy
Email
Enter your email
Mobile Number
Enter mobile number
Gender
Select gender
Confirm Email
Enter your con-email
Identity Details
ID Type
Enter ID type
ID Number
Enter ID number
Issued Authority
Enter issued authority
Issued State
Enter issued state
Issued Date
dd-mm-yyyy
Expiry Date
dd-mm-yyyy
Next


Press F11 to exit full screen
Registration
Address Details
Address Type
Permanent or Temporary
Nationality
Enter nationality
State
Enter your state
District
Enter your district
Block Number
Enter block number
Ward Number
Enter ward number
Address
DoorNumber
Enter your Doorno
Street Name
Enter your street
LandMark
Enter your Landmark
City
Enter your city
Pincode
Enter your Pincode
Country
Enter your country
Back
Submit




## User details database



# CHAPTER 9

# CONCLUSION AND FUTURE SCOPE

Digital banking enables customers to transact through different secured digital channels while the bank takes care of data security, related risk mitigation, and regulatory aspects.
With the help of online banking, there are several indispensable services which are made available to customers, without them having to personally visit the bank. Customers can perform financial transactions like transfer funds online, pay bills, apply for loans and open a savings account among various other debit card transactions. Under non-financial transactions, customers can carry out several activities which may require going to the bank like applying for a new cheque book, getting account statements, update contact information, start/stop payment, etc.

## REFERENCES

Drivers Of Artificial Intelligence In Banking Service Sectors by Mohamed Hussain Thowfeek.,Et Al.,[2020]

Banks Banking On AI by Kamal Singh.,[2020]