ABC Banking Application Use Case

# Use Case Description

The ABC banking application allows users to register, login, perform withdrawals, deposits, and transfer funds between accounts within the same bank. The system's interaction is facilitated through a ReactJS frontend and a Maven Spring Boot backend, with data stored in a relational database.

# UI Screens (ReactJS)

## User Registration

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| ABC Bank Portal |

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| | User Registration | |

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| First Name: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_] |

| |

| Last Name: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_] |

| |

| Age: [\_\_\_\_\_] |

| |

| Gender: ( ) Male ( ) Female ( ) Other |

| |

| Mobile Number: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_] |

| |

| Email: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_] |

| |

| Bank Branch: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_] |

| (Dropdown/Select Option) |

| |

| Account Type: ( ) Savings ( ) Current ( ) Other |

| |

| [ Register ] |

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**Explanation of the Elements:**

* **Header:** "ABC Bank Portal" is prominently displayed at the top, indicating the application.
* **Main Section Title:** "User Registration" clearly labels the purpose of the screen.
* **Input Fields:**
  + **First Name:** A text input field for the user's first name.
  + **Last Name:** A text input field for the user's last name.
  + **Age:** A smaller text input field for the user's age (likely expecting a numerical input).
  + **Gender:** Radio buttons allowing the user to select their gender (Male, Female, Other).
  + **Mobile Number:** A text input field for the user's mobile phone number.
  + **Email:** A text input field for the user's email address.
  + **Bank Branch:** A text input field, with a note suggesting it could be implemented as a dropdown or select option for better user experience and data consistency.
  + **Account Type:** Radio buttons allowing the user to select the desired account type (Savings, Current, Other).
* **Button:** A "Register" button for the user to submit their registration details.
* **Footer:** The copyright information "© 2025 ABC Bank. All rights reserved." is displayed at the bottom.

**Visual Considerations for a Mock Screen Image:**

When creating an actual mock screen image, consider the following:

* **Layout:** Ensure a clean and organized layout with appropriate spacing between elements.
* **Typography:** Use clear and readable fonts for labels and input fields.
* **Input Field Styling:** Use visual cues (borders, placeholders) to indicate interactive elements.
* **Button Styling:** Make the "Register" button visually prominent.
* **Branding:** Incorporate the ABC Bank's color scheme or logo (if available) for a more branded look.
* **Responsiveness (Optional):** If you're aiming for a more advanced mock-up, you could show how the layout might adapt to different screen sizes.

## User Login

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| ABC Bank Portal |

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| | User Login | |

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| Username / Email: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_] |

| |

| Password: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_] |

| |

| ( ) Remember Me |

| |

| [ Login ] |

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| [ Forgot Password? ] |

| |

| Don't have an account? [ Register Here ] |

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**Explanation of the Elements:**

* **Header:** Consistent with the registration screen, "ABC Bank Portal" is at the top.
* **Main Section Title:** "User Login" clearly indicates the screen's purpose.
* **Input Fields:**
  + **Username / Email:** A single input field that can accept either the user's registered username or their email address. This provides flexibility.
  + **Password:** A password input field (typically masking the entered characters with dots or asterisks).
* **Checkbox:** "Remember Me" allows users to stay logged in for future sessions (implementation-dependent).
* **Button:** A prominent "Login" button to submit the login credentials.
* **Links:**
  + **Forgot Password?:** A link to a password recovery or reset process.
  + **Don't have an account? Register Here:** A clear call to action linking to the user registration screen you requested earlier.
* **Footer:** The same copyright information as the registration screen ensures consistency.

**Visual Considerations for a Mock Screen Image:**

When creating a visual mock-up of this login screen, consider:

* **Layout:** Keep it clean and simple. Login screens usually have fewer elements.
* **Typography:** Use readable fonts for labels and input fields.
* **Input Field Styling:** Clearly indicate the input areas. The password field should visually suggest it's for sensitive information.
* **Button Styling:** Make the "Login" button the primary focus.
* **Link Styling:** Differentiate the "Forgot Password?" and "Register Here" links visually (e.g., using different colors or underlining).
* **Placement:** Consider the placement of the "Register Here" link. It should be easily noticeable for new users.
* **Branding:** Maintain the ABC Bank's visual identity.

## Withdrawal

add logout on the right top corner

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| ABC Bank Portal |

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| | Welcome, [User Name]! | |

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| |

| <------------------- Left Navigation -------------------> | [Logout] |

| | | |

| | [WITHDRAWAL] (Inactive/Highlighted) | |

| | [Deposit] | |

| | [Fund Transfer] | |

| | | |

| ------------------------------------------------------------------ | |

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| ------------------------------------------------------------------ | |

| | Withdrawal | | |

| ------------------------------------------------------------------ | |

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| Account To Withdraw From: | |

| [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_] (Dropdown/Select Account) | |

| | |

| Withdrawal Amount: | |

| ₹ [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_] | |

| | |

| [ Withdraw ] | |

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**Changes Made:**

* **[Logout] Link:** A "[Logout]" link has been added to the top right corner of the main content area, aligned with the "Welcome, [User Name]!" message.

**Visual Considerations for the Mock Screen Image (Addition):**

* **Logout Styling:** Style the "Logout" link in a way that makes it clearly interactive (e.g., using a different color, underlining, or an icon). Its placement in the top right corner is a common convention for logout functionality.
* **Alignment:** Ensure the "Welcome" message and the "Logout" link are visually balanced on the top section.

## Deposit

## Fund Transfer

# H2 Database Schema

## Tables

* Users:
* user\_id INT PRIMARY KEY AUTO\_INCREMENT
* username VARCHAR(50) UNIQUE
* password VARCHAR(255)
* age
* gender
* mobile number
* email

Bank Branch:

* Id
* Branch name
* Branch city
* Ifsc code

Accounts:

account\_id INT PRIMARY KEY AUTO\_INCREMENT

user\_id INT

balance DECIMAL(15, 2)

account type

FOREIGN KEY (user\_id) REFERENCES Users(user\_id)

Transactions:

transaction\_id INT PRIMARY KEY AUTO\_INCREMENT

account\_id INT

type ENUM('withdrawal', 'deposit', 'transfer')

amount DECIMAL(15, 2)

timestamp DATETIME

FOREIGN KEY (account\_id) REFERENCES Accounts(account\_id)

## Sample Insert Statements

```sql

INSERT INTO Users (username, password) VALUES ('john\_doe', 'password123');

INSERT INTO Accounts (user\_id, balance) VALUES (1, 5000.00);

INSERT INTO Transactions (account\_id, type, amount, timestamp) VALUES (1, 'deposit', 5000.00, NOW());

```

# Maven Spring Boot Webservice

Backend web services (Controller, Service and Repository):

User Service – For User registration and User login functionality

Account Service – For account creation, withdraw, deposit and fund transfer. Exception handling, return proper error message back to ReactJS UI for user to correct and resubmit any forms/pages.