#### **README**

# **Video of the Demo Project**

## **Presentation**

A simple ATM bank simulation in dart that only holds one account.

#### Flowchart:

- 1. Enter Pincode
  - 1. Code:

# Main Menu (code):

```
void main() {
  ************
  if (pincode == "" && loggedIn == false) {
   print("Pincode is empty. Create your first pincode:");
   setPincode();
   if (!pincode.isEmpty) {
     main(); // go back to main menu and go to the 3 attempts
phase.
   }
 } else {
   int attempts = 0; // 3 strikes.
   print("Pincode already exists. $loggedIn");
   while (attempts < 3 && !loggedIn) {
     stdout.write("Please enter your pincode (or 'Q' to
exit): ");
     String? userInput = stdin.readLineSync(); // Read user
input
     userInput = userInput?.toUpperCase(); // Convert input
to uppercase
     if (userInput == pincode) {
       loggedIn = true;
       Bank_UI();
     } else if (userInput == "Q") {
       print("Exiting...");
       exit(0);
     } else if (userInput != pincode) {
       print("Incorrect pincode. Please try again.");
       attempts++;
     } else {
       print("ERROR: Invalid input. Please try again.");
   print("Too many attempts. Please try again later.");
   exit(0);
```

```
}
}
```

2. Photo Output:

Main Menu (photo):

- 2. Exit the program if 3 times failed upon entering the PIN is entered incorrectly three times.
  - 1. Code:
- 3 Attempts only (code):

```
if (pincode == "" && loggedIn == false) {
    print("Pincode is empty. Create your first pincode:");
    setPincode();
    if (!pincode.isEmpty) {
     main(); // go back to main menu and go to the 3 attempts
phase.
   }
 } else {
    int attempts = 0; // This counter is used to count logins.
3 times only.
    print("Pincode already exists. $loggedIn");
    while (attempts < 3 && !loggedIn) {
      stdout.write("Please enter your pincode (or 'Q' to
exit): ");
      String? userInput = stdin.readLineSync(); // Read user
input
      userInput = userInput?.toUpperCase(); // Convert input
to uppercase
     if (userInput == pincode) {
        loggedIn = true;
        Bank_UI();
      } else if (userInput == "Q") {
        print("Exiting...");
        exit(0);
      } else if (userInput != pincode) {
        print("Incorrect pincode. Please try again.");
        attempts++;
      } else {
        print("ERROR: Invalid input. Please try again.");
    }
    print("Too many attempts. Please try again later.");
    exit(0);
```

```
}
}
```

2. Photo Output:

### 3 Attempts only (photo):

- 3. Features:
  - 1. Z Balance Inquiry [completion:: 2025-05-20]
    - 1. Asking how much balance you have
    - 2. Code:
- Balance Inquiry (code):

```
switch (userInput) {
        print("Your current balance is: $money");
        break:
      case "T":
        stdout.write("Transfer amount: ");
        String? transferInput = stdin.readLineSync();
        int? transferAmount = int.tryParse(transferInput
?? '');
        if (transferAmount != null) {
          if (transferAmount < money) {</pre>
            money -= transferAmount;
            print("Transfer successful. New balance:
$money");
          } else {
            print("Insufficient funds.");
          }
        } else {
          print("Invalid input. Please enter a valid
number.");
        }
        break;
```

- 3. Photo:
  - **Balance Inquiry (photo):**

```
S dart main.dart

Pincode is empty. Create your first pincode:
pincode has been set to: 1

Pincode already exists. false
Pincode already exists. false
Please enter your pincode (or 'Q' to exit): 1

Please select an option

B - Balance Inquiry
W - Withdraw
T - Transfer
D - Deposit
C - Change Pincode
P - Pay Bills
L - Logout

(BANK GUI) Please select an option: B

Your current balance is: 0

(BANK GUI) Please select an option:
```

- 2. Withdraw Cash [completion:: 2025-05-20]
  - 1. Cash--
  - 2. Code:
    - Withdraw (code):

```
case "W":
        stdout.write("Withdrawal amount: ");
        String? withdrawInput = stdin.readLineSync();
        int? withdrawalAmount =
int.tryParse(withdrawInput ?? '');
        if (withdrawalAmount != null) {
         if (withdrawalAmount < money) {</pre>
            if (withdrawalAmount > 0) {
              money -= withdrawalAmount;
              print("Withdrawal successful. New balance:
$money");
            } else {
              print("ERROR: Withdrawal amount cannot be
negative. or zero.");
            }
          } else {
            print("Insufficient funds.");
        } else {
          print("Invalid input. Please enter a valid
number.");
        }
        break;
```

- 3. Photo:
  - 1. Withdraw (photo):

```
***** GUI ******* Bank GUI *******
    Please select an option
    B - Balance Inquiry
    W - Withdraw
      - Transfer
      - Deposit
    C - Change Pincode
    P - Pay Bills
    L - Logout
(BANK GUI) Please select an option: B
Your current balance is: 0
(BANK GUI) Please select an option: W
Withdrawal amount: 1000
Insufficient funds.
(BANK GUI) Please select an option: W
Withdrawal amount: 100
Insufficient funds.
(BANK GUI) Please select an option: D
Deposit amount: 10000
Deposit successful. New balance: 10000
(BANK GUI) Please select an option: W
Withdrawal amount: 1000
Withdrawal successful. New balance: 9000
(BANK GUI) Please select an option:
```

- 3. Transfer Money [completion:: 2025-05-20]
  - 1. Transferring the money to another user.
    - 1. In this instance, transferring money to a fake user = Cash--
- 4. Change Pin
- 5. Pay Bills
  - 1. Options:
    - 1. ✓ Pay Electricity Bill = Cash--
    - 2. Pay Wifi Bill = Cash--
    - 3. Pay Water Bill = Cash--
  - 2. Code:

1.

## Pay Bills (code/s):

```
void payingBills() {
 print("Which Bills to pay?");
  print("E - Electricity (" + BillsToPay[0][1].toString()
+ " Left)");
 print("W - Water (" + BillsToPay[1][1].toString() + "
Left)");
 print("I - Internet (" + BillsToPay[2][1].toString() +
" Left)");
  stdout.write("(Bills) option (Q to leave): ");
 String? billOption = stdin.readLineSync();
 billOption = billOption?.toUpperCase(); // Convert
input to uppercase
 void payBill(String billType) {
    stdout.write("Pay $billType Amount: ");
    String? billInput = stdin.readLineSync();
    int? paymentInput = int.tryParse(billInput ?? '');
    if (paymentInput != null) {
      int paymentAmount = paymentInput;
     if (paymentAmount <= money) {</pre>
        int billNum = 0;
        switch (billType) {
```

```
case "Electricity":
            billNum = 0;
            break;
          case "Water":
            billNum = 1;
            break;
          case "Internet":
            billNum = 2;
            break;
        }
        if (paymentAmount > BillsToPay[billNum][1]) {
          paymentAmount = BillsToPay[billNum][1];
        }
        money -= paymentAmount;
        BillsToPay[billNum][1] -= paymentAmount;
        print(
          "(Bill) $billType Payment successful. Bill
$billType left (" +
              BillsToPay[billNum][1].toString() +
              "). Money Left $money",
        );
      } else {
        print("ERROR: Insufficient funds.");
      }
    } else {
     print("ERROR: Invalid Input");
    }
  }
  switch (billOption) {
    case "E": // Paying Electiricty Bill
      payBill("Electricity");
      payingBills();
      break;
    case "W": // Paying Water Bill
      payBill("Water");
      payingBills();
      break;
    case "I": // Paying Internet Bill
      payBill("Internet");
      payingBills();
     break;
    case "Q": // Quit Baying Bills GUI Page.
      print("Exiting paying bills...");
      break:
    default:
      print("Invalid option. Please try again.");
      payingBills();
      break;
  }
}
```

#### 3. Photo:

1.

# Withdraw (photo):

```
***** Bank GUI
    Please select an option
    B - Balance Inquiry
    W - Withdraw
      - Transfer
      - Deposit
    C - Change Pincode
    P - Pay Bills
    L - Logout
(BANK GUI) Please select an option: B
Your current balance is: 0
(BANK GUI) Please select an option: W
Withdrawal amount: 1000
Insufficient funds.
(BANK GUI) Please select an option: W
Withdrawal amount: 100
Insufficient funds.
(BANK GUI) Please select an option: D
Deposit amount: 10000
Deposit successful. New balance: 10000
(BANK GUI) Please select an option: W
Withdrawal amount: 1000
Withdrawal successful. New balance: 9000
(BANK GUI) Please select an option:
```

#### 6. Deposit Money

- 1. Cash++
- 2. Code:

#### 1. Deposit (code):

```
case "D":
        stdout.write("Deposit amount: ");
        String? depositInput = stdin.readLineSync();
        int? depositAmount = int.tryParse(depositInput ??
' ' );
        if (depositAmount != null) {
          if (depositAmount > 0) {
            money += depositAmount;
            print("Deposit successful. New balance:
$money");
          } else {
            print("ERROR: Withdrawal amount cannot be
negative. or zero.");
        } else {
          print("Invalid input. Please enter a valid
number.");
        break;
```

#### 3. Photo:

### Deposit (photo):

```
Hello, Welcome to Our Bank **************
Please select an option
    B - Balance Inquiry
      - Withdraw
      - Transfer
    D - Deposit
    C - Change Pincode
P - Pay Bills
    L - Logout
 BANK GUI) Please select an option: D
Deposit amount: 10000000
Deposit amount: 10000000
Deposit successful. New balance: 10000000
(BANK GUI) Please select an option: D
Deposit amount: -1000
ERROR: Withdrawal amount cannot be negative. or zero.
(BANK GUI) Please select an option: D
Deposit amount: 0
ERROR: Withdrawal amount cannot be negative. or zero.
(BANK GUI) Please select an option:
```

- 4. V Log Out Feature.
  - 1. Logs the user out and asks for pin code again.
  - 2. Code:

1.

Log Out (code):

```
while (userInput != "L") {
    stdout.write("(BANK GUI) Please select an option: ");
    userInput = stdin.readLineSync(); // Read user input
    userInput = userInput?.toUpperCase(); // Convert input to
uppercase

switch (userInput) {
    case "L":
        print("Logging out...");
        loggedIn = false;
        break;
}
```

- 3. Photo:
  - Log Out (photo):

```
Bank GUI
    Please select an option
    B - Balance Inquiry
    W - Withdraw
        Transfer
    D - Deposit
      - Change Pincode
- Pay Bills
    L - Logout
(BANK GUI) Please select an option: D
Deposit amount: 10000000
Deposit successful. New balance: 10000000
(BANK GUI) Please select an option: D
Deposit amount: -1000
ERROR: Withdrawal amount cannot be negative. or zero.
(BANK GUI) Please select an option: D
Deposit amount: 0
ERROR: Withdrawal amount cannot be negative. or zero.
(BANK GUI) Please select an option: L
Logging out...
********************* Hello, Welcome to Our Bank ******
Pincode already exists. false
Please enter your pincode (or 'Q' to exit):
```

#### 5. **Quit App**

- 1. User can quit the app by pressing "Q"
- 2. Code:

1.

Quit App (code):

```
while (attempts < 3 && !loggedIn) {
      stdout.write("Please enter your pincode (or 'Q' to
exit): ");
      String? userInput = stdin.readLineSync(); // Read user
input
     userInput = userInput?.toUpperCase(); // Convert input
to uppercase
      if (userInput == pincode) {
        loggedIn = true;
        Bank_UI();
      } else if (userInput == "Q") {
        // >>>> This quits the app.
        print("Exiting...");
        exit(0);
      } else if (userInput != pincode) {
        print("Incorrect pincode. Please try again.");
        attempts++;
      } else {
        print("ERROR: Invalid input. Please try again.");
    print("Too many attempts. Please try again later.");
    exit(0);
  }
```

- 3. Photo:
  - 1. Quit App (photo):

- Requirements for Submission:
  - Dart Codes

  - Presentation screenshot of codes and result.

#### Assignee:

- 1. Chesca Solomon
  - 1. Pincode Feature
  - 2. Exit the program if 3 times failed upon entering the PIN is entered incorrectly three times.
- 2. Jacob Delos Santos
  - 1. Balanc Inquiry
  - 2. Withdraw Cash
  - 3. Deposit Money
  - 4. Quit App
- 3. Paolo San Gabriel
  - 1. Change Pin Function
- 4. Preys Dasun
  - 1. Transfer Money
  - 2. Log Out Feature
- 5. Ri Castellano
  - 1. Pay Bills

#### **List of Codes + Photos:**

# Main Menu (code):

```
print("Pincode already exists. $loggedIn");
    while (attempts < 3 && !loggedIn) {
      stdout.write("Please enter your pincode (or 'Q' to exit): ");
      String? userInput = stdin.readLineSync(); // Read user input
      userInput = userInput?.toUpperCase(); // Convert input to uppercase
      if (userInput == pincode) {
        loggedIn = true;
        Bank_UI();
      } else if (userInput == "Q") {
        print("Exiting...");
       exit(0);
      } else if (userInput != pincode) {
        print("Incorrect pincode. Please try again.");
       attempts++;
      } else {
        print("ERROR: Invalid input. Please try again.");
      }
    }
    print("Too many attempts. Please try again later.");
 }
}
```

### Main Menu (photo):

# 3 Attempts only (code):

```
if (pincode == "" && loggedIn == false) {
    print("Pincode is empty. Create your first pincode:");

    setPincode();

    if (!pincode.isEmpty) {
        main(); // go back to main menu and go to the 3 attempts phase.
    }
} else {
    int attempts = 0; // This counter is used to count logins. 3 times only.

    print("Pincode already exists. $loggedIn");

    while (attempts < 3 && !loggedIn) {
        stdout.write("Please enter your pincode (or 'Q' to exit): ");
        String? userInput = stdin.readLineSync(); // Read user input
        userInput = userInput?.toUpperCase(); // Convert input to uppercase
        if (userInput == pincode) {
            loggedIn = true;
        }
}</pre>
```

```
Bank_UI();
} else if (userInput == "Q") {
    print("Exiting...");
    exit(0);
} else if (userInput != pincode) {
    print("Incorrect pincode. Please try again.");
    attempts++;
} else {
    print("ERROR: Invalid input. Please try again.");
}
print("Too many attempts. Please try again later.");
exit(0);
}
```

#### 3 Attempts only (photo):

### **Balance Inquiry (code):**

```
switch (userInput) {
      case "B":
        print("Your current balance is: $money");
        break;
      case "T":
        stdout.write("Transfer amount: ");
        String? transferInput = stdin.readLineSync();
        int? transferAmount = int.tryParse(transferInput ?? '');
        if (transferAmount != null) {
          if (transferAmount < money) {</pre>
            money -= transferAmount;
            print("Transfer successful. New balance: $money");
          } else {
            print("Insufficient funds.");
        } else {
          print("Invalid input. Please enter a valid number.");
        }
        break;
```

### **Balance Inquiry (photo):**

```
$ dart main.dart

Hello, Welcome to Our Bank

Pincode is empty. Create your first pincode:
pincode has been set to: 1

Pincode already exists. false
Please enter your pincode (or 'Q' to exit): 1

Please select an option

B - Balance Inquiry
W - Withdraw
T - Transfer
D - Deposit
C - Change Pincode
P - Pay Bills
L - Logout

(BANK GUI) Please select an option: B

Your current balance is: 0

(BANK GUI) Please select an option:
```

#### Withdraw (code):

```
case "W":
        stdout.write("Withdrawal amount: ");
        String? withdrawInput = stdin.readLineSync();
        int? withdrawalAmount = int.tryParse(withdrawInput ?? '');
        if (withdrawalAmount != null) {
          if (withdrawalAmount < money) {</pre>
            if (withdrawalAmount > 0) {
              money -= withdrawalAmount;
              print("Withdrawal successful. New balance: $money");
            } else {
              print("ERROR: Withdrawal amount cannot be negative. or
zero.");
          } else {
            print("Insufficient funds.");
        } else {
          print("Invalid input. Please enter a valid number.");
        break;
```

# Withdraw (photo):

```
***************** Bank GUI ********
    Please select an option
    B - Balance Inquiry
    W - Withdraw
    Т
      - Transfer
    D
      - Deposit
     - Change Pincode
    C
    P - Pay Bills
    L - Logout
(BANK GUI) Please select an option: B
Your current balance is: 0
(BANK GUI) Please select an option: W
Withdrawal amount: 1000
Insufficient funds.
(BANK GUI) Please select an option: W
Withdrawal amount: 100
Insufficient funds.
(BANK GUI) Please select an option: D
Deposit amount: 10000
Deposit successful. New balance: 10000
(BANK GUI) Please select an option: W
Withdrawal amount: 1000
Withdrawal successful. New balance: 9000
(BANK GUI) Please select an option:
```

### Pay Bills (code/s):

```
void payingBills() {
 print("Which Bills to pay?");
  print("E - Electricity (" + BillsToPay[0][1].toString() + " Left)");
  print("W - Water (" + BillsToPay[1][1].toString() + " Left)");
 print("I - Internet (" + BillsToPay[2][1].toString() + " Left)");
  stdout.write("(Bills) option (Q to leave): ");
 String? billOption = stdin.readLineSync();
 billOption = billOption?.toUpperCase(); // Convert input to uppercase
 void payBill(String billType) {
    stdout.write("Pay $billType Amount: ");
    String? billInput = stdin.readLineSync();
    int? paymentInput = int.tryParse(billInput ?? '');
    if (paymentInput != null) {
      int paymentAmount = paymentInput;
      if (paymentAmount <= money) {</pre>
        int billNum = 0;
        switch (billType) {
          case "Electricity":
            billNum = 0;
            break;
          case "Water":
            billNum = 1;
            break;
          case "Internet":
            billNum = 2;
            break;
        if (paymentAmount > BillsToPay[billNum][1]) {
          paymentAmount = BillsToPay[billNum][1];
        money -= paymentAmount;
        BillsToPay[billNum][1] -= paymentAmount;
```

```
print(
          "(Bill) $billType Payment successful. Bill $billType left (" +
              BillsToPay[billNum][1].toString() +
              "). Money Left $money",
        );
      } else {
       print("ERROR: Insufficient funds.");
     }
    } else {
     print("ERROR: Invalid Input");
    }
 switch (billOption) {
   case "E": // Paying Electiricty Bill
     payBill("Electricity");
     payingBills();
     break;
    case "W": // Paying Water Bill
      payBill("Water");
     payingBills();
     break;
    case "I": // Paying Internet Bill
     payBill("Internet");
     payingBills();
     break;
    case "Q": // Quit Baying Bills GUI Page.
     print("Exiting paying bills...");
      break;
    default:
     print("Invalid option. Please try again.");
      payingBills();
     break;
 }
}
```

# Pay Bills (photo):

```
$ dart main.dart
******************** Hello, Welcome to Our Bank **
first pincode:
Pincode is empty. Create your first pincode:
Please select an option
     B - Balance Inquiry
     W - Withdraw
          Transfer
       - Deposit
     D
     C - Change Pincode
P - Pay Bills
       - Logout
(BANK GUI) Please select an option: D
Deposit amount: 100000
Deposit amount: 100000
Deposit successful. New balance: 100000
(BANK GUI) Please select an option: P
Which Bills to pay?
  - Electricity (100 Left)
- Water (50 Left)
I - Internet (75 Left)
(Bills) option (Q to leave): E
Pay Electricity Amount: 100
(Bill) Electricity Payment successful. Bill Electricity left (0). Money Left 99900
Which Bills to pay?
  - Electricity (0 Left)
- Water (50 Left)
     Internet (75 Left)
(Bills) option (Q to leave): W
Pay Water Amount: 100
(Bill) Water Payment successful. Bill Water left (0). Money Left 99850
Which Bills to pay?
  - Electricity (0 Left)
  - Water (0 Left)
- Internet (75 Left)
(Bills) option (Q to leave): I
Pay Internet Amount: 1000
(Bill) Internet Payment successful. Bill Internet left (0). Money Left 99775
Which Bills to pay?
     Electricity (0 Left)
Water (0 Left)
I - Internet (0 Left)
(Bills) option (Q to leave): 0
Invalid option. Please try again.
Which Bills to pay?
E - Electricity (0 Left)
     Water (0 Left)
Internet (0 Left)
(Bills) option (Q to leave):
```

# Deposit (code):

```
case "D":
    stdout.write("Deposit amount: ");
    String? depositInput = stdin.readLineSync();
    int? depositAmount = int.tryParse(depositInput ?? '');
    if (depositAmount != null) {
        if (depositAmount > 0) {
            money += depositAmount;
            print("Deposit successful. New balance: $money");
        } else {
            print("ERROR: Withdrawal amount cannot be negative. or zero.");
        }
    } else {
        print("Invalid input. Please enter a valid number.");
    }
    break;
```

# **Deposit (photo):**

```
Hello, Welcome to Our Bank
'incode is empty. Create your first pincode:
Please select an option
   B - Balance Inquiry
   W - Withdraw
   T - Transfer
   D - Deposit
   C - Change Pincode
     - Pay Bills
   L - Logout
(BANK GUI) Please select an option: D
Deposit amount: 10000000
Deposit successful. New balance: 10000000
(BANK GUI) Please select an option: D
Deposit amount: -1000
ERROR: Withdrawal amount cannot be negative. or zero.
(BANK GUI) Please select an option: D
Deposit amount: 0
ERROR: Withdrawal amount cannot be negative. or zero.
(BANK GUI) Please select an option: ■
```

#### Log Out (code):

```
while (userInput != "L") {
    stdout.write("(BANK GUI) Please select an option: ");
    userInput = stdin.readLineSync(); // Read user input
    userInput = userInput?.toUpperCase(); // Convert input to uppercase

switch (userInput) {
    case "L":
        print("Logging out...");
        loggedIn = false;
        break;
    }
}
```

# Log Out (photo):

```
Please enter your
                  pincode
                               'Q' to exit): 1
                     Bank GUI
   Please select an option
   B - Balance Inquiry
   W - Withdraw
    T - Transfer
   D - Deposit
   С
     - Change Pincode
     - Pay Bills
   L - Logout
(BANK GUI) Please select an option: D
Deposit amount: 10000000
Deposit successful. New balance: 10000000
(BANK GUI) Please select an option: D
Deposit amount: -1000
ERROR: Withdrawal amount cannot be negative. or zero.
(BANK GUI) Please select an option: D
Deposit amount: 0
ERROR: Withdrawal amount cannot be negative. or zero.
(BANK GUI) Please select an option: L
Logging out..
              ****** Hello, Welcome to Our Bank **
Pincode already exists. false
Please enter your pincode (or 'Q' to exit):
```

#### Quit App (code):

```
while (attempts < 3 && !loggedIn) {
      stdout.write("Please enter your pincode (or 'Q' to exit): ");
      String? userInput = stdin.readLineSync(); // Read user input
      userInput = userInput?.toUpperCase(); // Convert input to uppercase
      if (userInput == pincode) {
        loggedIn = true;
       Bank_UI();
      } else if (userInput == "Q") {
        // >>>> This quits the app.
        print("Exiting...");
        exit(0);
      } else if (userInput != pincode) {
        print("Incorrect pincode. Please try again.");
        attempts++;
      } else {
        print("ERROR: Invalid input. Please try again.");
    print("Too many attempts. Please try again later.");
   exit(0);
 }
```

# **Quit App (photo):**