AED Final Project Report

Banking Management System

The project is a Banking Management System which is a simple and easy to use application offering features such as amount deposit, amount withdrawal, credit card application, loan application, transaction details and also provides graphical insights via pie charts for the loans and credit cards approval.

Enterprises:

Banking, Card, Loan, Card Verification, Loan Verification, Customer

Organisations:

Banking, Card, Loan, Card Verification, Loan Verification, Customer

Roles:

System Admin, Banking Admin, Banking Officer, Customer, Card Admin, Card Officer, Card Verification Admin, Card Verification Officer, Loan Admin, Loan Officer, Loan Verification Admin, Loan Verification Officer, Customer.

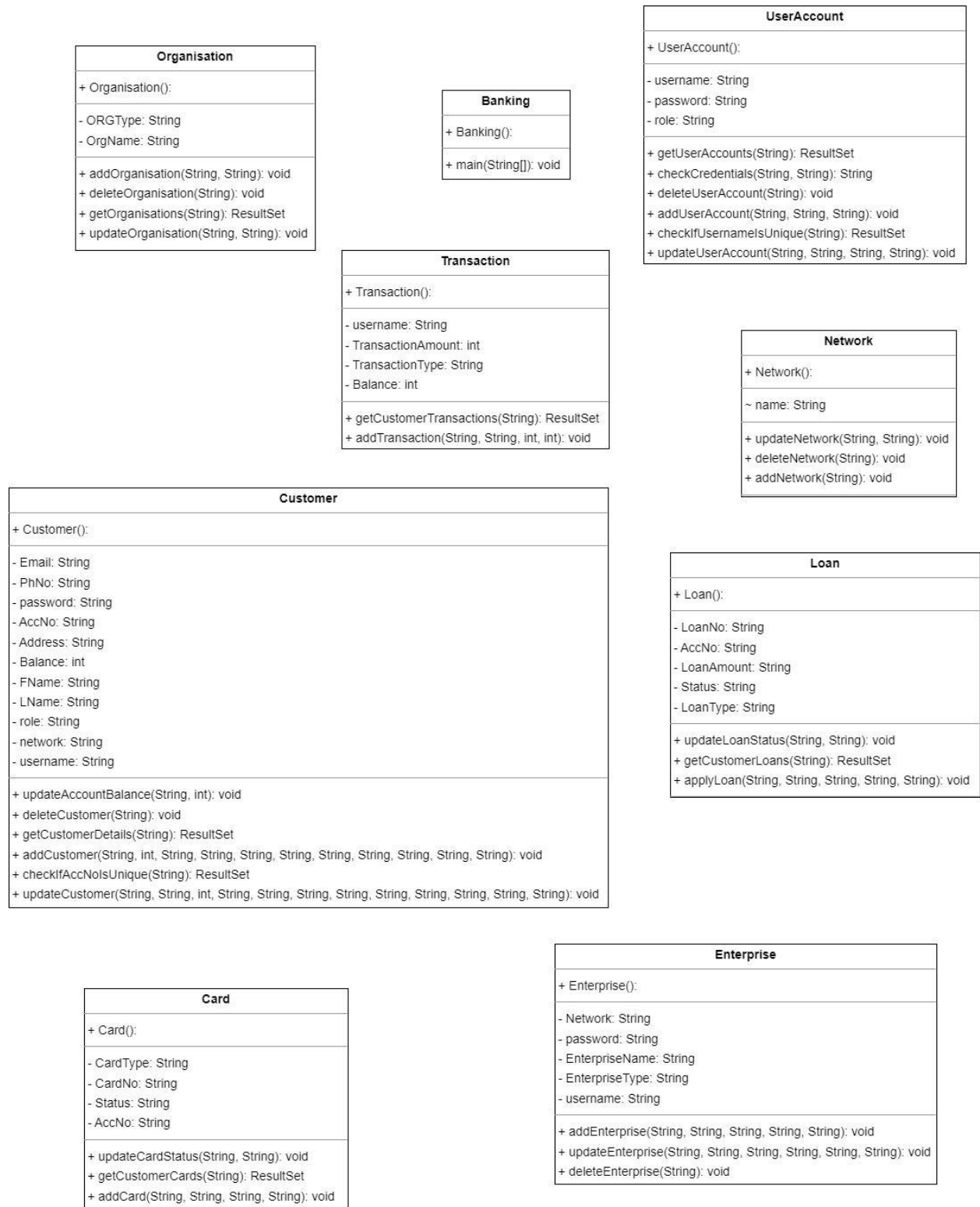**Tech Stack:** Java, Java Swing (UI), MySQL (Database)

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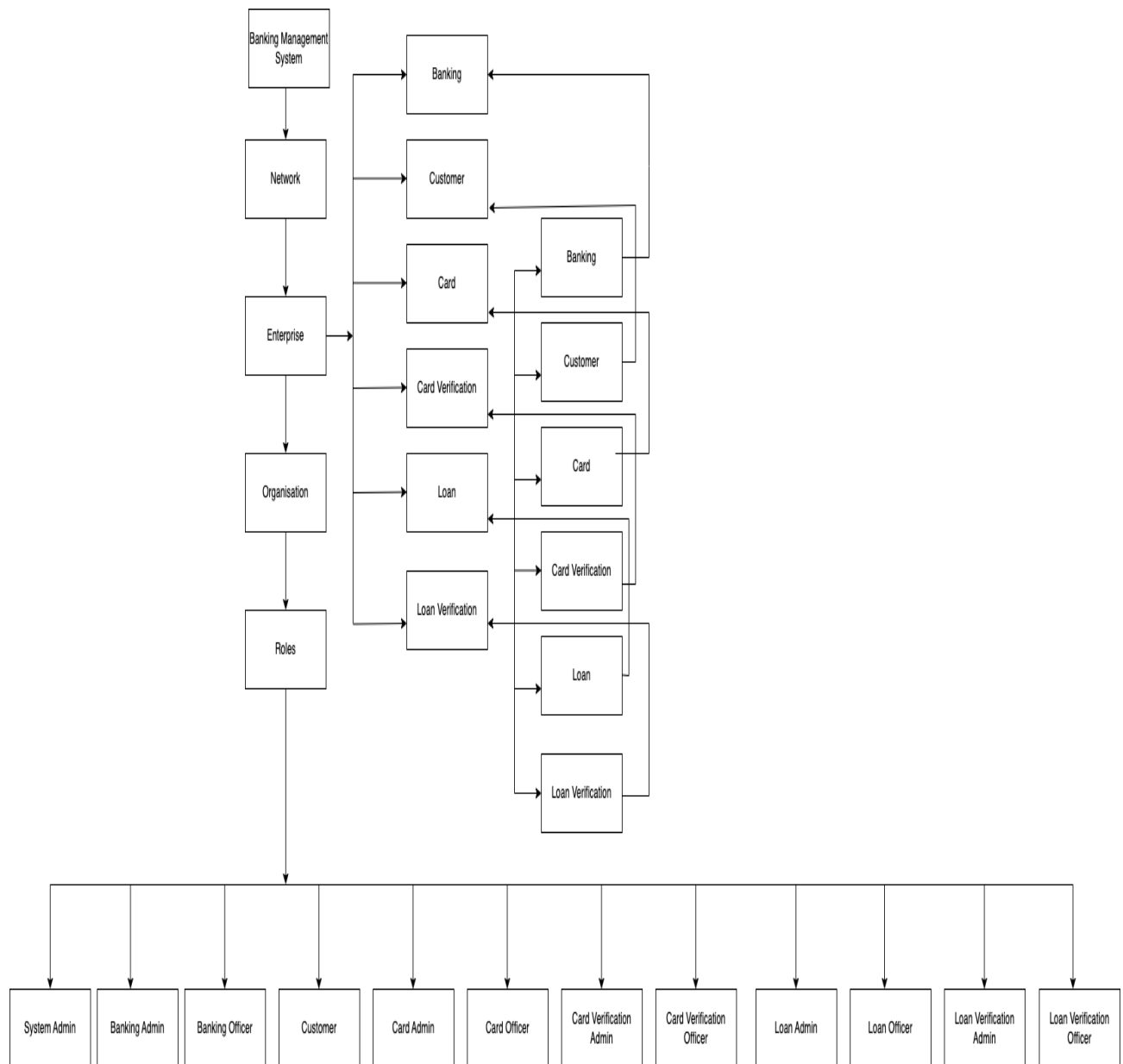**Email Id:** shekar.p@northeastern.edu

Features:

- ○ System admin creates the network and credentials for the Banking Admin, Card Admin, Card Verification Admin, Loan Admin and Loan Verification Admin.

- ○ Banking Admin creates the banking organization and credentials for the banking officer.

- ○ Card Admin creates the card organization and credentials for the card officer.

- ○ Card Verification Admin creates the card verification organization and credentials for the card verification officer.

- ○ Loan Admin creates the loan organization and credentials for the loan officer.

- ○ Loan Verification Admin creates the loan verification organization and credentials for the loan verification officer.

- ○ Banking Officer creates the bank accounts and credentials for the customers.

- ○ Customers can deposit the amount, withdraw the amount, check the transaction details, apply for credit cards and apply for loans.

- ○ Card Officer either approves the customer's credit card request and sends for verification or rejects the credit card request.

- ○ Card Verification Officer either approves or rejects the credit card request upon verification.

- ○ Loan Officer either approves the customer's loan request and sends for verification or rejects the loan request.

- ○ Loan Verification Officer either approves or rejects the loan request upon verification.

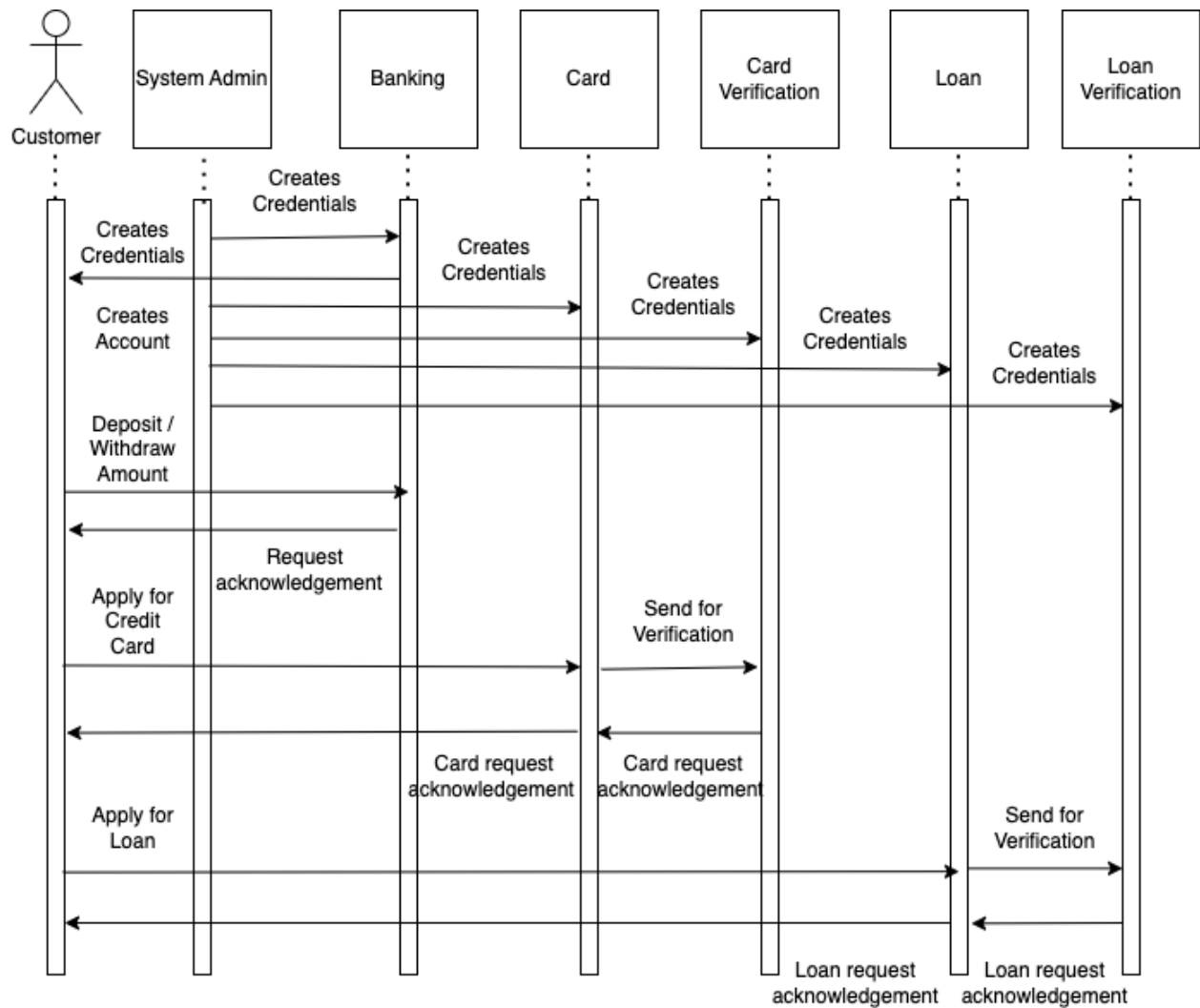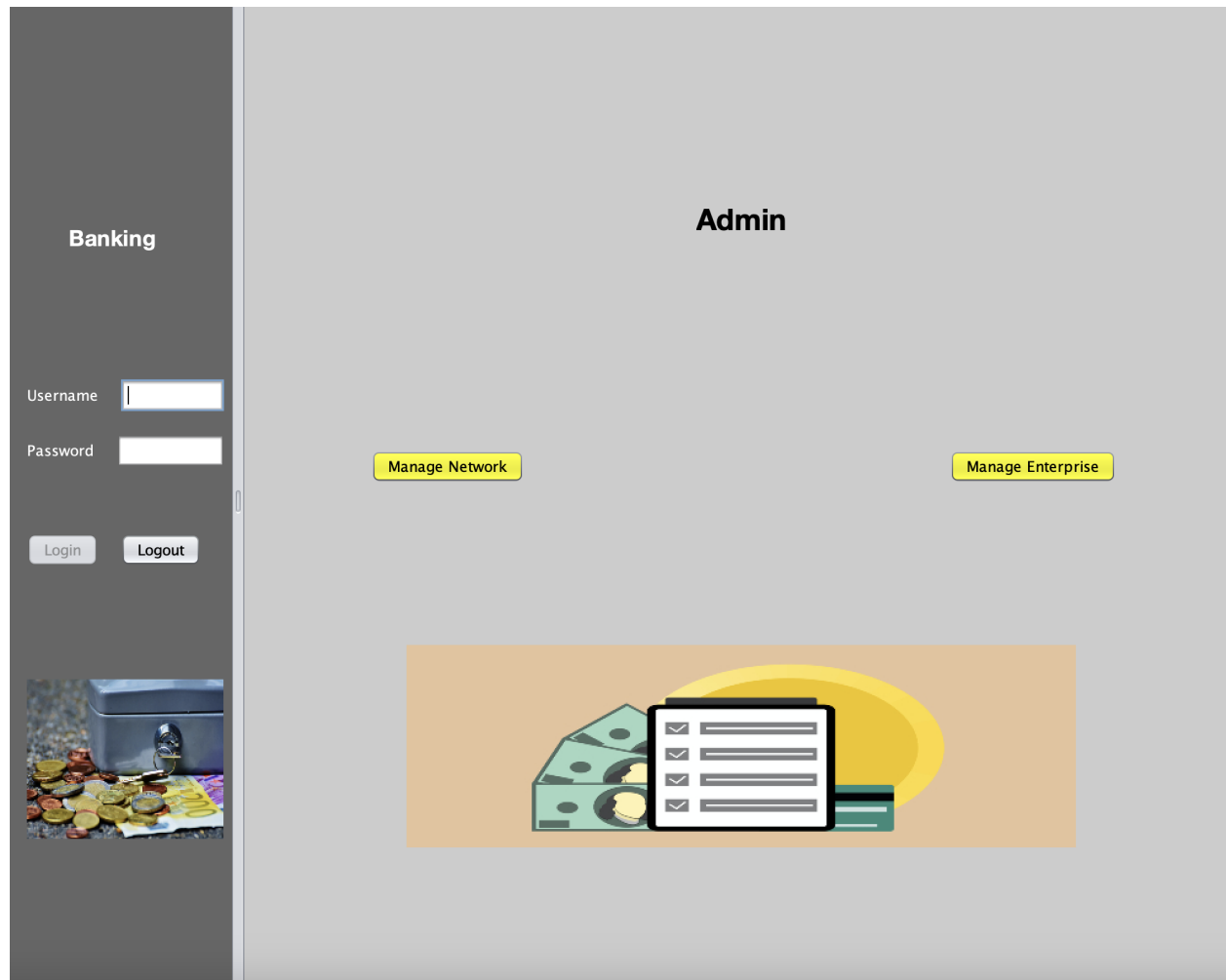- ○ Pie charts for the loans and credit cards approval insights.

Class Diagram:

Organisation

+ Organisation():

- ORGType: String
- OrgName: String

+ addOrganisation(String, String): void
+ deleteOrganisation(String): void
+ getOrganisations(String): ResultSet
+ updateOrganisation(String, String): void

Banking

+ Banking():

+ main(String[]): void

UserAccount

+ UserAccount():

- username: String
- password: String
- role: String

+ getUserAccounts(String): ResultSet
+ checkCredentials(String, String): String
+ deleteUserAccount(String): void
+ addUserAccount(String, String, String): void
+ checkIfUsernameIsUnique(String): ResultSet
+ updateUserAccount(String, String, String, String): void

Transaction

+ Transaction():

- username: String
- TransactionAmount: int
- TransactionType: String
- Balance: int

+ getCustomerTransactions(String): ResultSet
+ addTransaction(String, String, int, int): void

Network

+ Network():

~ name: String

+ updateNetwork(String, String): void
+ deleteNetwork(String): void
+ addNetwork(String): void

Customer

+ Customer():

- Email: String
- PhNo: String
- password: String
- AccNo: String
- Address: String
- Balance: int
- FName: String
- LName: String
- role: String
- network: String
- username: String

+ updateAccountBalance(String, int): void
+ deleteCustomer(String): void
+ getCustomerDetails(String): ResultSet
+ addCustomer(String, int, String, String, String, String, String, String, String, String, String): void
+ checkIfAccNoIsUnique(String): ResultSet
+ updateCustomer(String, String, int, String, String, String, String, String, String, String, String, String): void

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Loan

+ Loan():

- LoanNo: String
- AccNo: String
- LoanAmount: String
- Status: String
- LoanType: String

+ updateLoanStatus(String, String): void
+ getCustomerLoans(String): ResultSet
+ applyLoan(String, String, String, String, String): void

Card

+ Card():

- CardType: String
- CardNo: String
- Status: String
- AccNo: String

+ updateCardStatus(String, String): void
+ getCustomerCards(String): ResultSet
+ addCard(String, String, String, String): void

Enterprise

+ Enterprise():

- Network: String
- password: String
- EnterpriseName: String
- EnterpriseType: String
- username: String

+ addEnterprise(String, String, String, String, String): void
+ updateEnterprise(String, String, String, String, String, String): void
+ deleteEnterprise(String): void

Object / Workflow Diagram:

Sequence Diagram:

Screenshots:

Banking

Username [|]

Password [ ]

[Login] [Logout]

Admin

[Manage Network]   [Manage Enterprise]

Back

City
Boston
New York

Delete

Banking

Username

Password

Login   Logout

Add Network

Enter the city

Add   Update

Banking

Username [|]

Password [ ]

[Login] [Logout]

[Back]

Network	Enterprise	Username
Boston	Banking	BankingAdmin
Boston	CardAdmin	CardAdmin
Boston	CardVerificationAdmin	CardVerificationAdmin
Boston	LoanAdmin	LoanAdmin
Boston	LoanVerificationAdmin	LoanVerificationAdmin
New York	Swiss	SwissAdmin
New York	Visa	VisaAdmin
New York	Prodigy	ProdigyAdmin
New York	CardBGV	CardBGVAdmin
New York	LoanBGV	LoanBGVAdmin

[Delete]

Network   [Boston ▼]

Enterprise   [ ]

Username   [ ]

Password   [ ]

Role   [Banking ▼]

[Add]   [Update]

Administrator

Banking

Username [|]

Password [ ]

[Login] [Logout]

[Manage Organisation]   [Manage Employee]

A D M I N

Manage Organisation

Back

Banking

Username [|]

Password [ ]

Login   Logout

Organisation

BankingOrganisation
SwissOrganisation

Delete

Enter the organisation [ ]

Add   Update

Manage Employee

Banking

Username [ ]

Password [ ]

[Login] [Logout]

[Back]

Username	Role
BankingOfficer	Banking
SwissOfficer	Banking

[Delete]

Username [ ]

Password [ ]

[Add] [Update]

Banking Officer

AccNo	FName	LName	Email	PhNo	Address	username	Network	Balance
AA001	Pavan	Shekar	pavan@gm...	85786919...	235 Park Dr	pavan	Boston	1200
AA002	John	Jacobs	john@gmail...	71825364...	26 Carson St	john	New York	6000

Banking

Username [_____]

Password [_____]

[Login] [Logout]

[Delete]

Acc No	[_____]	Balance	[_____]
FName	[_____]	LName	[_____]
Email	[_____]	Ph No	[_____]
Address	[_____]	Network	Boston ▾
Username	[_____]	Password	[_____]

[Add] [Update]

Banking

Username [|]

Password [ ]

[Login] [Logout]

Customer

[View Account Info]

[Deposit]

[Withdraw]

[Credit Card]

[Loan]

Account Information

Back

Acc No	AA001		Username	pavan
FName	Pavan		LName	Shekar
Email	pavan@gmail.com		Ph No	8578691951
Address	235 Park Dr		Network	Boston
	Balance	1200		

Transaction Type	Transaction Amount	Account Balance
Credit	500	1500
Debit	300	1200

Deposit

Back

Banking

Username

Password

Login   Logout

Account Balance: 1200

Enter the amount to be deposited:

Deposit

Withdraw

Back

Banking

Username

Password

Login   Logout

Account Balance: 1200

Enter the amount to be withdrawn:

Withdraw

Cards

Back

Acc No	Card No	Card Type
AA001	372724943573427	Platinum
AA001	372724943576810	Gold

Banking

Username

Password

Login   Logout

Apply for Credit/Debit Cards

Card Type   Black ▼

Apply

Loan

Acc No	Loan No	Loan Type	Loan Amount
AA001	L18722	Student Loan	50000
AA001	L10875	Personal Loan	10000

Banking

Username

Password

Login   Logout

Apply for Loan

Loan Type   Student Loan ▾

Loan Amount

Apply

Card Officer

Acc No	Card No	Card Type	Status
AA001	372724943573427	Platinum	Approved
AA002	372724943578764	Gold	Rejected
AA002	372724943571527	Silver	Approved
AA001	372724943576810	Gold	Approved
AA002	372724943572243	Black	Approved

Banking

Username

Password

Login   Logout

Process Card Request   ○ Approve   ○ Reject

Process   Send for Verification

Check Insights

Card Verification Officer

Banking

Username [   ]

Password [   ]

[Login] [Logout]

Acc No	Card No	Card Type	Status
AA001	372724943573427	Platinum	Approved
AA002	372724943578764	Gold	Rejected
AA002	372724943571527	Silver	Approved
AA001	372724943576810	Gold	Approved
AA002	372724943572243	Black	Approved

Process Card Request   ◯ Approve   ◯ Reject

[Process]

Loan Officer

Acc No	Loan No	Loan Type	Loan Amount	Status
AA001	L18722	Student Loan	50000	Approved
AA002	L10720	House Loan	100000	Rejected
AA001	L10875	Personal Loan	10000	Approved
AA002	L18390	House Loan	80000	Approved
AA002	L11505	Car Loan	25000	Approved

Banking

Username

Password

Login   Logout

Process Loan Request   ○ Approve   ○ Reject

Process   Send for Verification

Check Insights

Loan Verification Officer

Banking

Username [|]

Password [ ]

[Login] [Logout]

Acc No	Loan No	Loan Type	Loan Amount	Status
AA001	L18722	Student Loan	50000	Approved
AA002	L10720	House Loan	100000	Rejected
AA001	L10875	Personal Loan	10000	Approved
AA002	L18390	House Loan	80000	Approved
AA002	L11505	Car Loan	25000	Approved

Process Loan Request ○ Approve ○ Reject

[Process]

Banking

Username

Password

Login   Logout

Back

Credit Cards Approved

Silver   Black

Platinum   Gold

● Black ● Gold ● Platinum ○ Silver

Banking

Username

Password

Login   Logout

Back

Loans Approved

Student Loan   Car Loan

Personal Loan   House Loan

● Car Loan ● House Loan ● Personal Loan
● Student Loan