American International University-Bangladesh (AIUB)
Department of Computer Science
Faculty of Science & Technology (FST)

Youth Loan Management

A Software Engineering Project Submitted
By

Group Number: 8

Semester: Fall_22_23		**Section: A**
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Youth Loan Management

➢ PROJECT PROPOSAL

Background:

Today is a need of finance in every aspect of life but it plays a vital role for the youth generation. As we know these days different bank and finance company coming up with new product every month. In such competitive environment only selling the finance product is not the only target but providing excellent service to the customer for long period is the major task. They come up with loan transact but this situation is little different for the young youth generation. They can't access loan transact easily for their good the only reason it is that of their youth life and unemployment. And become a serious issue for the youth peoples those who need money for recent periods and for those who want to adapt some start-up.

Therefore proposed "Youth Loan Management" has been designed to automate the loan managing activities for a youth and offers loan to them from a bank by creating a student fund system.

Problem statement:

When an unemployed person of a certain age, plans to take loan they go with so many difficulties like they cannot access the loan because they have no source of income or finance. Sometimes they ask to people to take loan of behalf of them, but these things come with a great cost like they go with some liabilities. Sometimes they cannot payback their interest and sometimes they go with stress because of fulfilling the interest rate. When a person does not agree with taking on the loan behalf of them, it becomes huge hassle, and they go on the wrong path to take loan.

Objective:

This software helps the young generation to find out the loan from the bank using the student fund. It will be integrated with the bank, and they can easily issue loan for the youth. This project focused for helping the young generation to get loan easily and they can establish their business and they can contribute to our economic development, and we get new business idea, and more work opportunity will be created. It will help to reduce the unemployment problem from the country. Overall, this software not only helpful for the youth but also indirectly will play a vital role to develop national economic.

Solution Diagram:

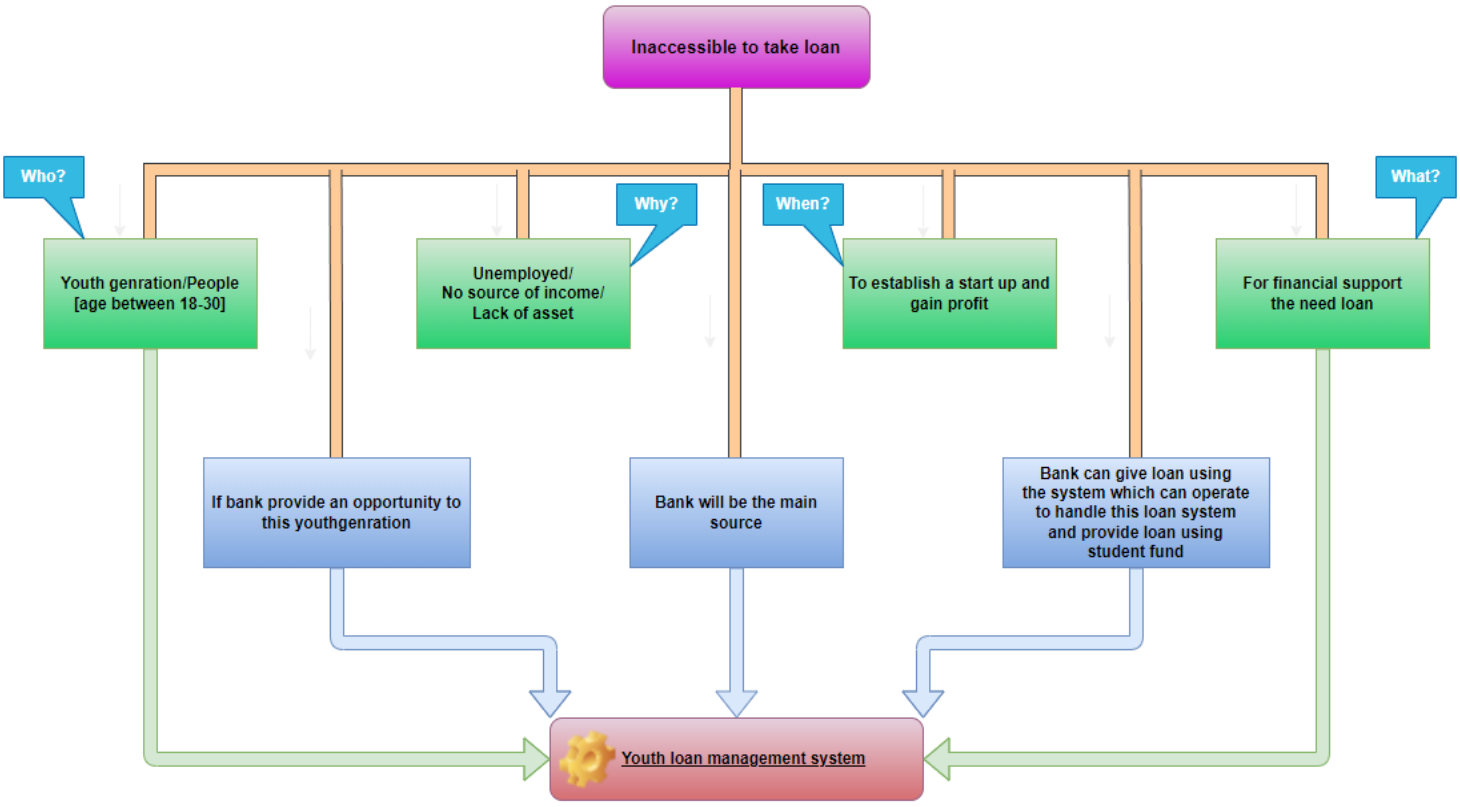


Figure 1: Solution Diagram

Target User:

The loan targets youth aged between 18 and 30 years and it is a short to medium term loan designed for the purpose of financing business expansion. The loans support business ventures owned by young entrepreneurs and the eligible sectors include manufacturing, geoprocessing, primary agriculture, fisheries, livestock, health, transport, education, ICT, construction, printing, and service contractors among others. It will be mainly focused to improve the loan system for the young people.

Basic Functionalities:

The software UI will be very flexible for the users. So, that they can easily use the whole feature of this software. There will be user login and user registration with the secure verification system and even there will be some admin who get some administrative functionalities. Also, there will be bank searching feature and a secure application system to get loan from the bank and bank can verify the loan applicant vital information as well as they can communicate with the applicant through this software by messaging feature and there will be also a notification panel where bank and the user can get their important/promotional notifications. There will be also a reminder system which will provide notification to pay the instalment to the loan holders. Although there will be an important feature for the admin who can remove the invalid users.

➢ Requirement Analysis

1. Sign Up

Functional Requirements:

1.1 The user needs to provide some personal information (name, date of birth, location, mobile number, gender, email) in the Sign-Up form for creating an account and also to let admin decide for users validation.
1.2 For easy sign-up they can also use their Google account or Facebook account.
1.3 Finally, they will have to set a strong password for security purposes and re-write it for confirmation in the form

Priority Level: High
Precondition: The user must provide all the valid information correctly and set a strong Password.

2. Loan Participation

Functional Requirements:

2.1 The user will be able to apply a loan by giving valid reason and limited age.
2.2 After providing all the necessary data the user needs to press select applicable fund button.

Priority Level: High
Precondition: Banks must be within the loan's coverage and the software will be it's gone through. The user must include the valid data which are available in the system. The user must have a smartphone, a laptop or pc.

3. Admin Finalization

Functional Requirements:

3.1 The admin will verify all the requirements and data of the fund and will testify if the user is valid and if the reason is authorized.
3.2 Then he will let the applicant access the fund and notify them to fulfill it with installment for the future.

3.3 Only the admin will finalize which applicant needs to be executed and then he will make an announcement regarding the selected applicant.
3.4 After the announcement all the interested users will be provided with a loan and needs to clear their loan by installments every month.

Priority Level: High
Precondition: The user must consult with admin and give authorized reason and valid age for the requirement of taking the loan

4. Instalment Clearing

Functional Requirements:

4.1 After getting the loan the software will take steps to notify user with instalment clearing notification.
4.2 The user can clear instalment using a credit/debit card, Paypal, bkash and an online banking system.
4.3 If the payment is done successfully, then a confirmation mail will be sent to the user's email and phone no. But if there is any problem then a message will pop up and the system will ask the user to pay instalments like giving them an alert.

Priority Level: High
Precondition: The user must confirm with the statement of admin and take responsibility to fulfil the loan by instalment.

- Non-Functionals Requirements

QA 1- Availability: The system shall be 98% available between 10 AM - 4 PM banking time for transaction and giving loan and 100% available during the rest hours for applications.

Priority Level: High
Precondition: Users are required to login into the system.

QA 2- Testability: Software shall be able to notify the user for clearing the loan instalment every month.

Priority Level: High
Precondition: N/A

QA 3- Portability: The system shall run on the android platform/iOS and WinForms. through smartphone or tablet, pc, or mac. The user shall be able to use it from anywhere in Bangladesh.

Priority Level: Medium
Precondition: N/A

QA 4 – Maintainability: A maintenance programmer shall be able to modify the existing form within two hours or less. To fix any system problem maintenance team shall be able to solve the problem within 4 labour hours or less.

Priority Level: High
Precondition: The system should identify an error.

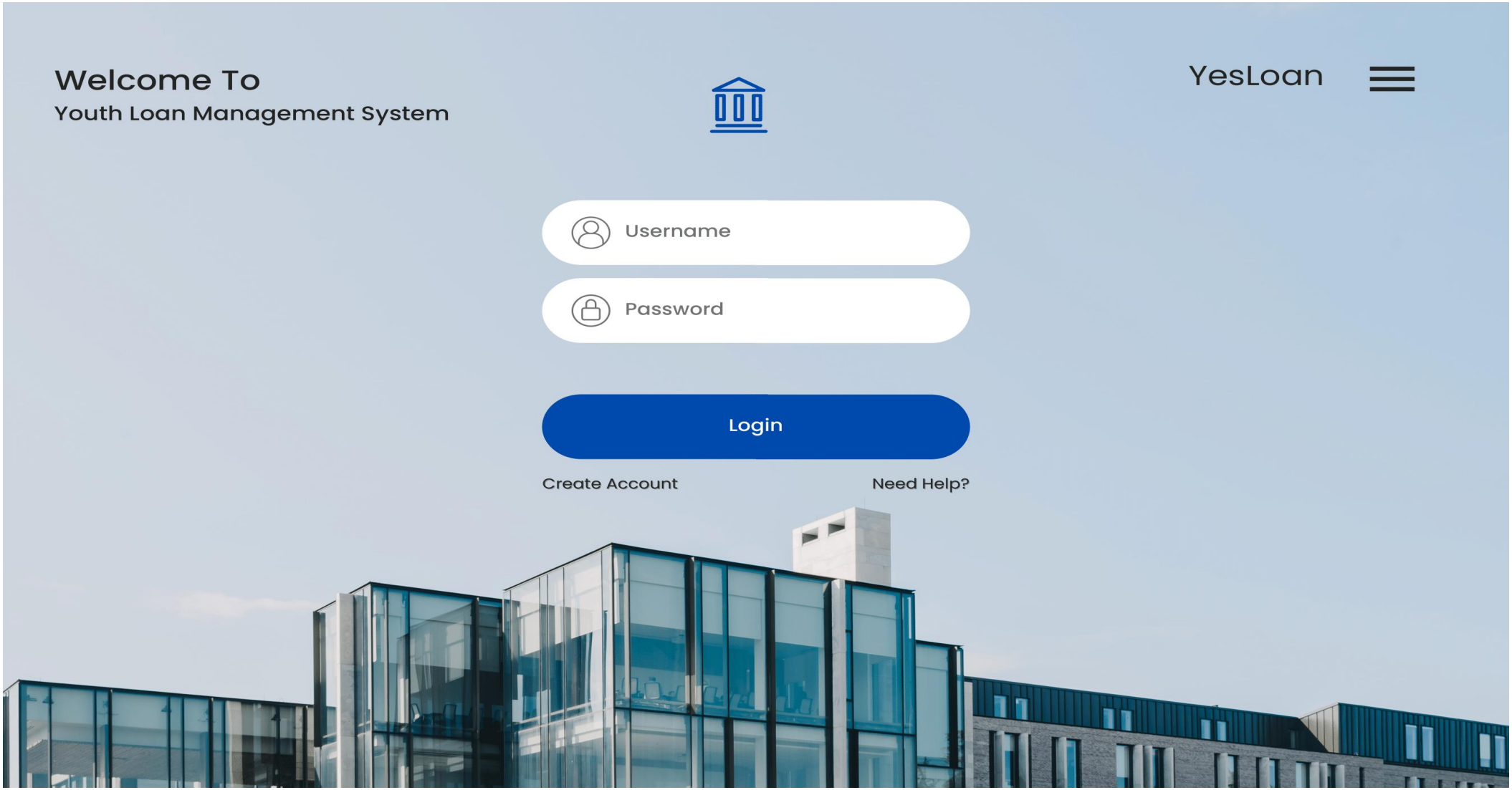
QA 5–Flexibility: This system shall be user-friendly. If there is any need to add or update Something, a maintenance programmer can work on the software and can deliver a new The version includes code modifications and testing, with no more than **2-3 hours** of labour.

Priority Level: High
Precondition: The system should identify an error.

- UI and UX Design

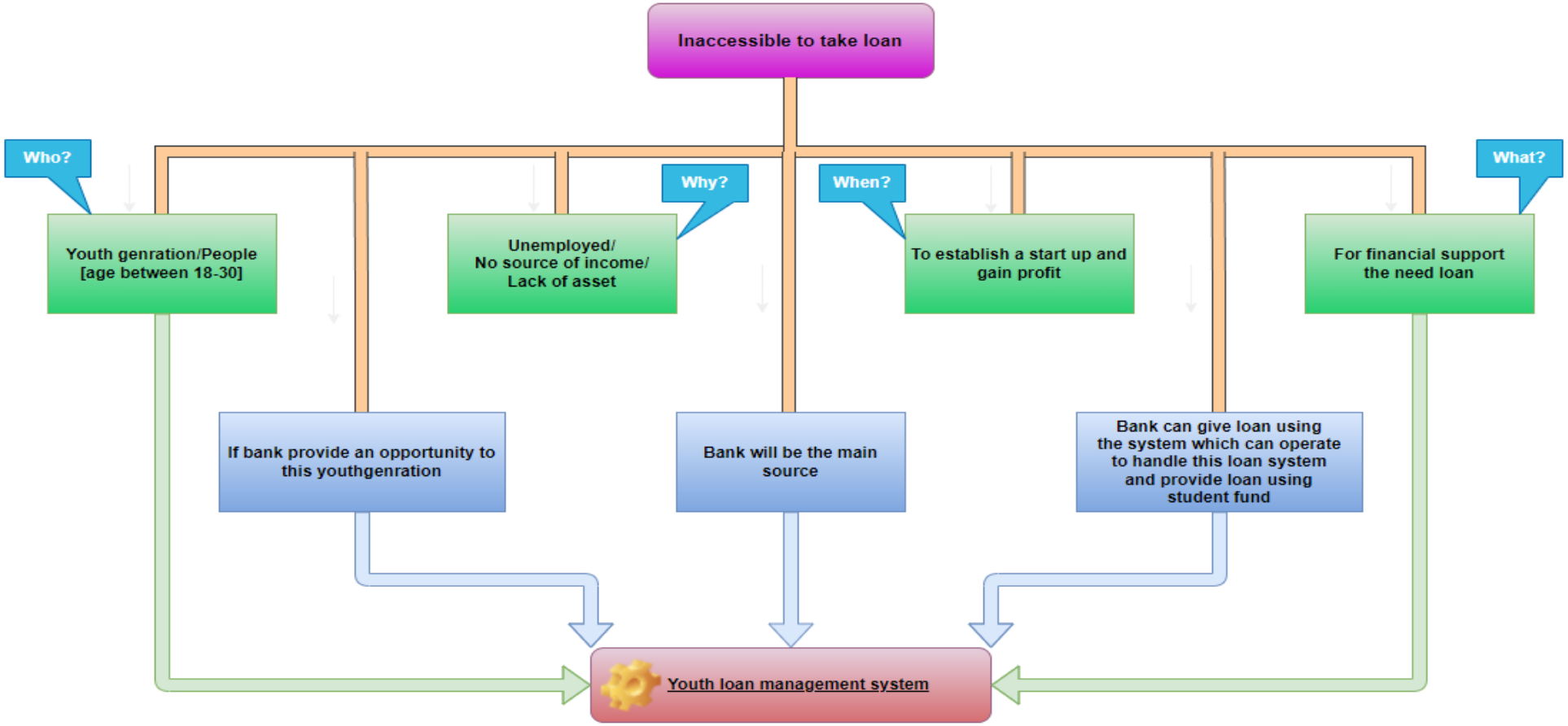
1.home page

2. Login Page

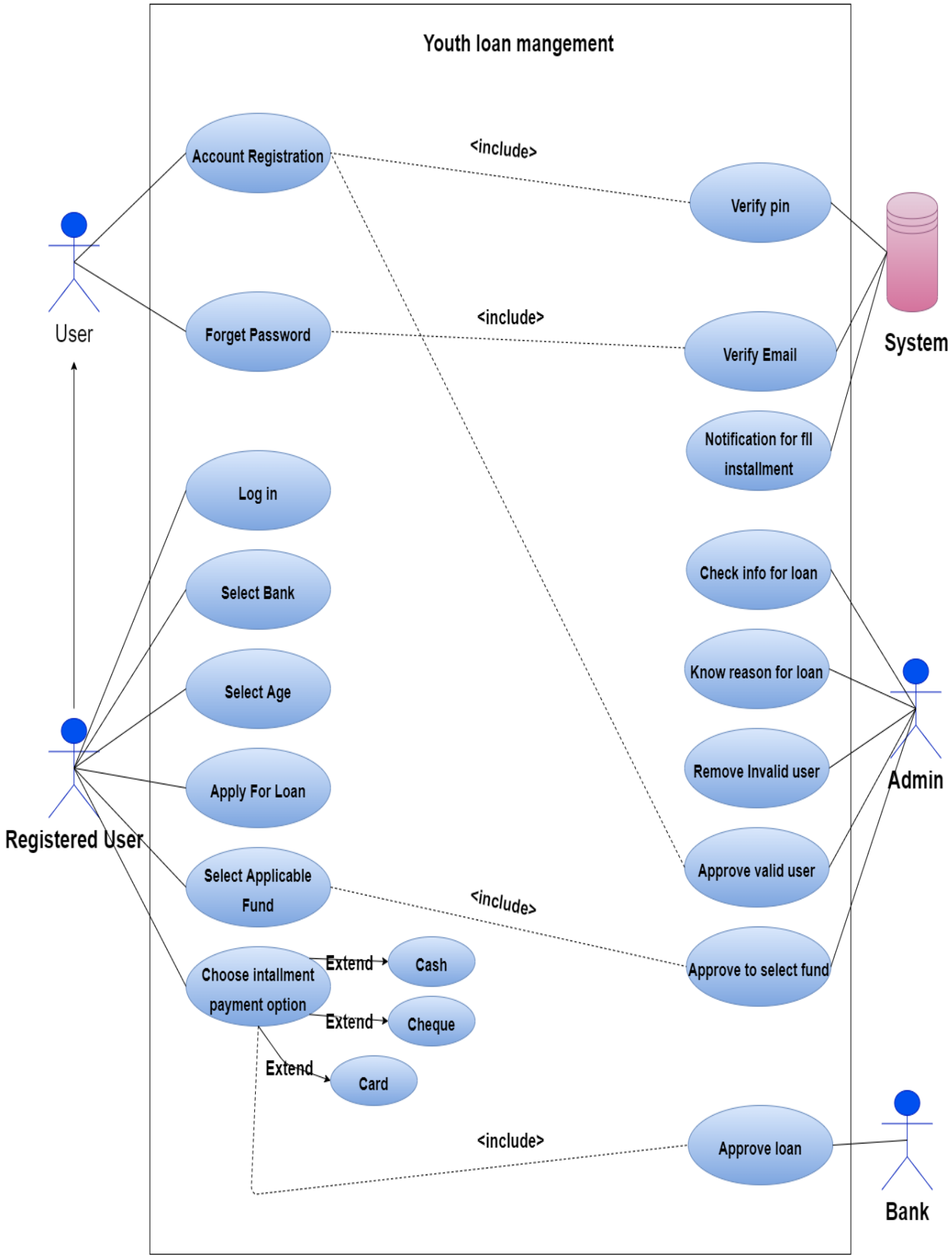

Welcome To
Youth Loan Management System
YesLoan
Username
Password
Login
Create Account
Need Help?

➢ System Design Specification

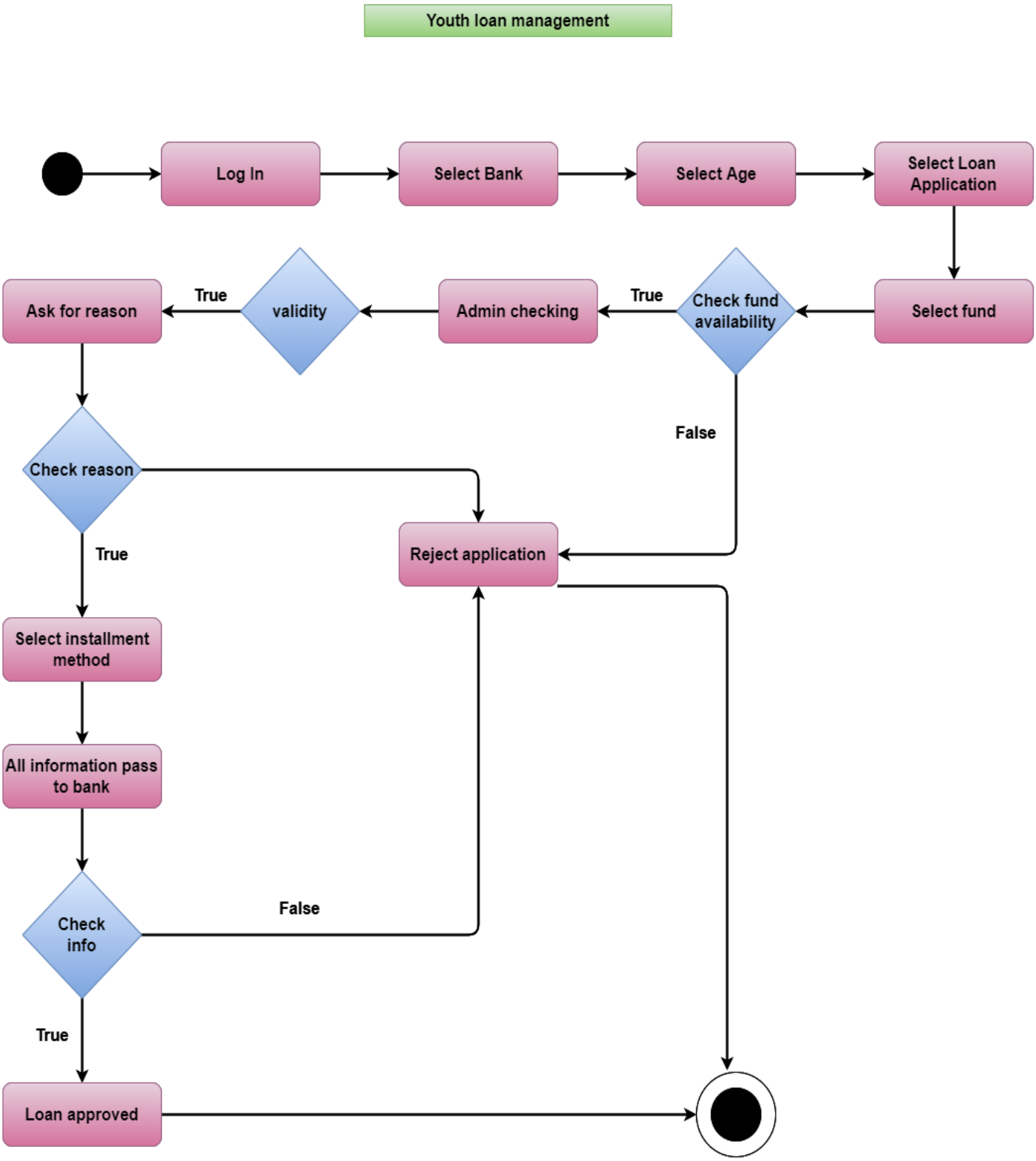
1. Solution Diagram



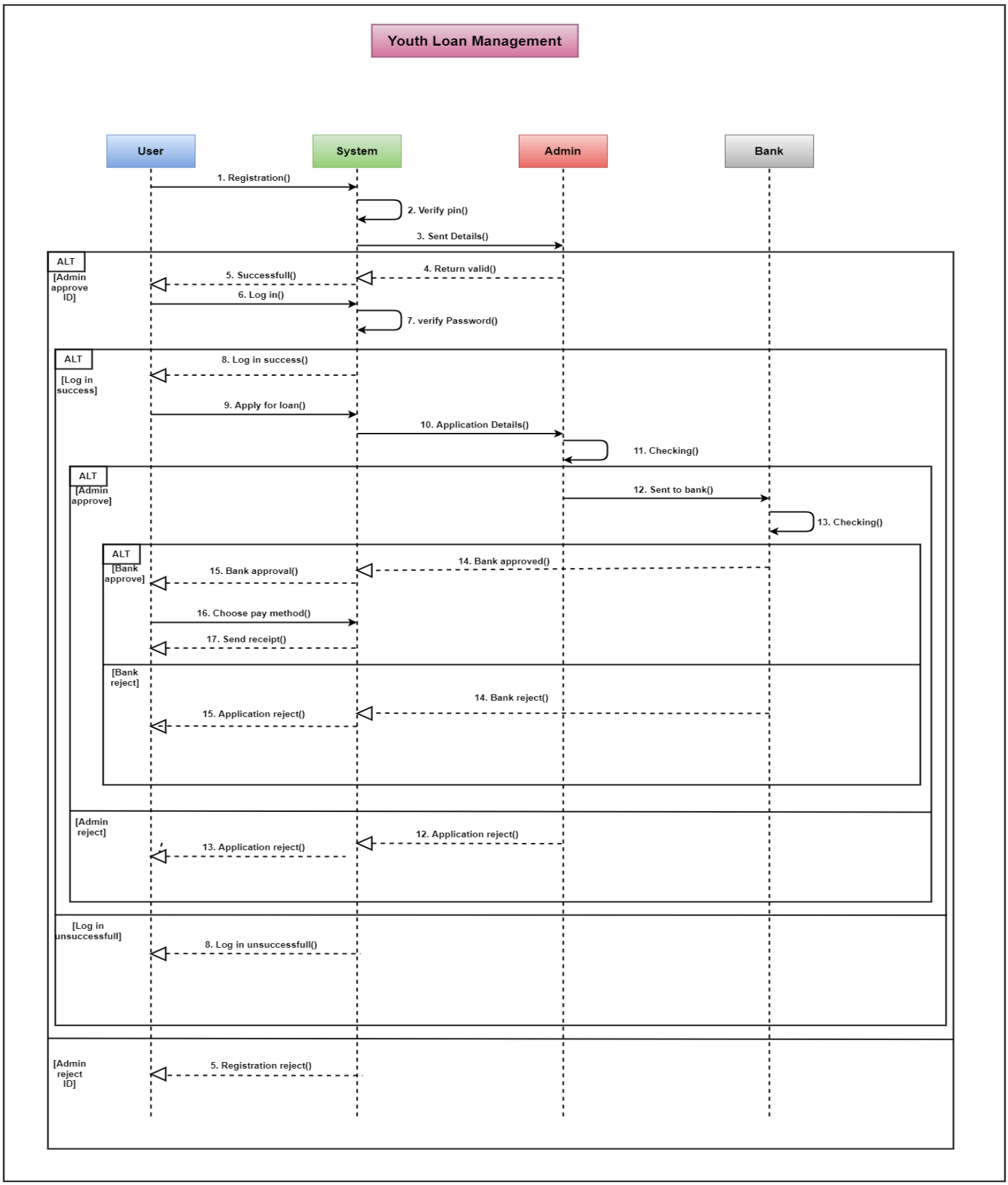
2.USE CASE


Youth loan mangement
Account Registration
<include>
Verify pin
User
Forget Password
<include>
Verify Email
System
Notification for fll installment
Log in
Check info for loan
Select Bank
Know reason for loan
Select Age
Admin
Remove Invalid user
Apply For Loan
Registered User
Approve valid user
Select Applicable Fund
<include>
Approve to select fund
Choose intallment payment option
Extend
Cash
Extend
Cheque
Extend
Card
<include>
Approve loan
Bank

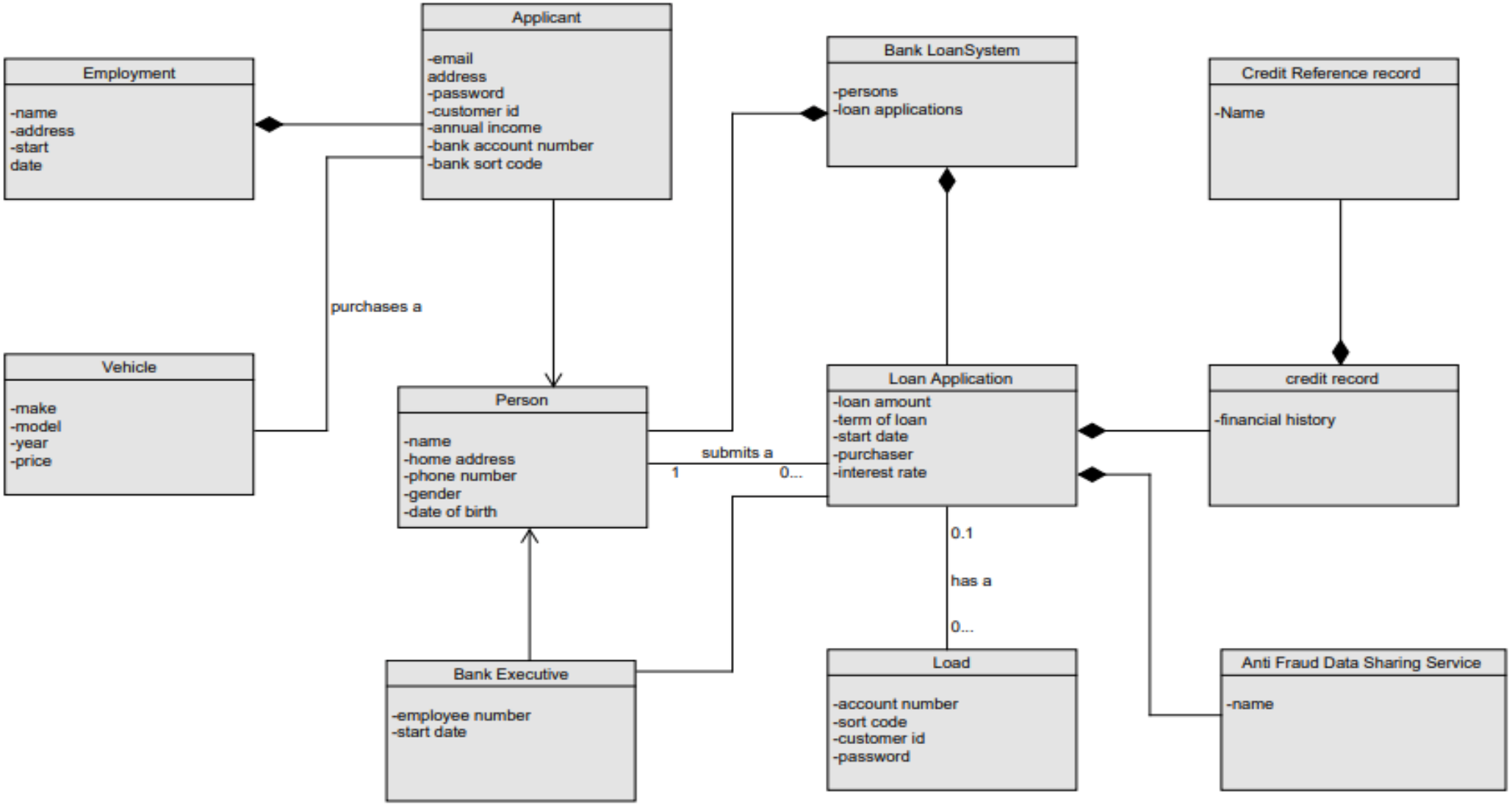
3. Activity Diagram



4. Sequence Diagram



5. Class Diagram



➢ SOFTWARE DEVELOPMENT LIFE CYCLE

Extreme Programming Process Model :

In case of choosing a model there are some factors required to give emphasize on such as requirement analysis, system design, development, testing and development and maintenance which are the 5 core stages of software development. For our project we have selected extreme programming. Extreme Programming (XP) is an Agile methodology consisting of effective development practices to achieve client satisfaction.

Model short description :

- **Outline**

The first phase of Extreme Programming life cycle is planning, where customers meet with the development team to create user stories or requirements. The development team converts user stories into iterations that cover a small part of the functionality or features required. The programming team prepares the plan, time, and costs of carrying out the iterations, and individual developers sign up for iterations.

- **On-site Customers**

On-site customer means to include real life customers in the development process. The customers will be always available to answer questions, provide the requirements, set the priorities. As a result, this will ensure the customers' satisfaction by including them in and will avoid frustration caused by negative feedback caused by misunderstanding the requirements.

- **Small Releases**

The development team is required to make small frequent releases of working software that customers can evaluate. The first release includes the smallest set of useful features set. Subsequent releases include newly added features. Small releases are important for both the customers and the development team, they provide necessary feedback to continue on the right direction. Here it is important to release early and often, adding a few features each time.

- **Simple Design**

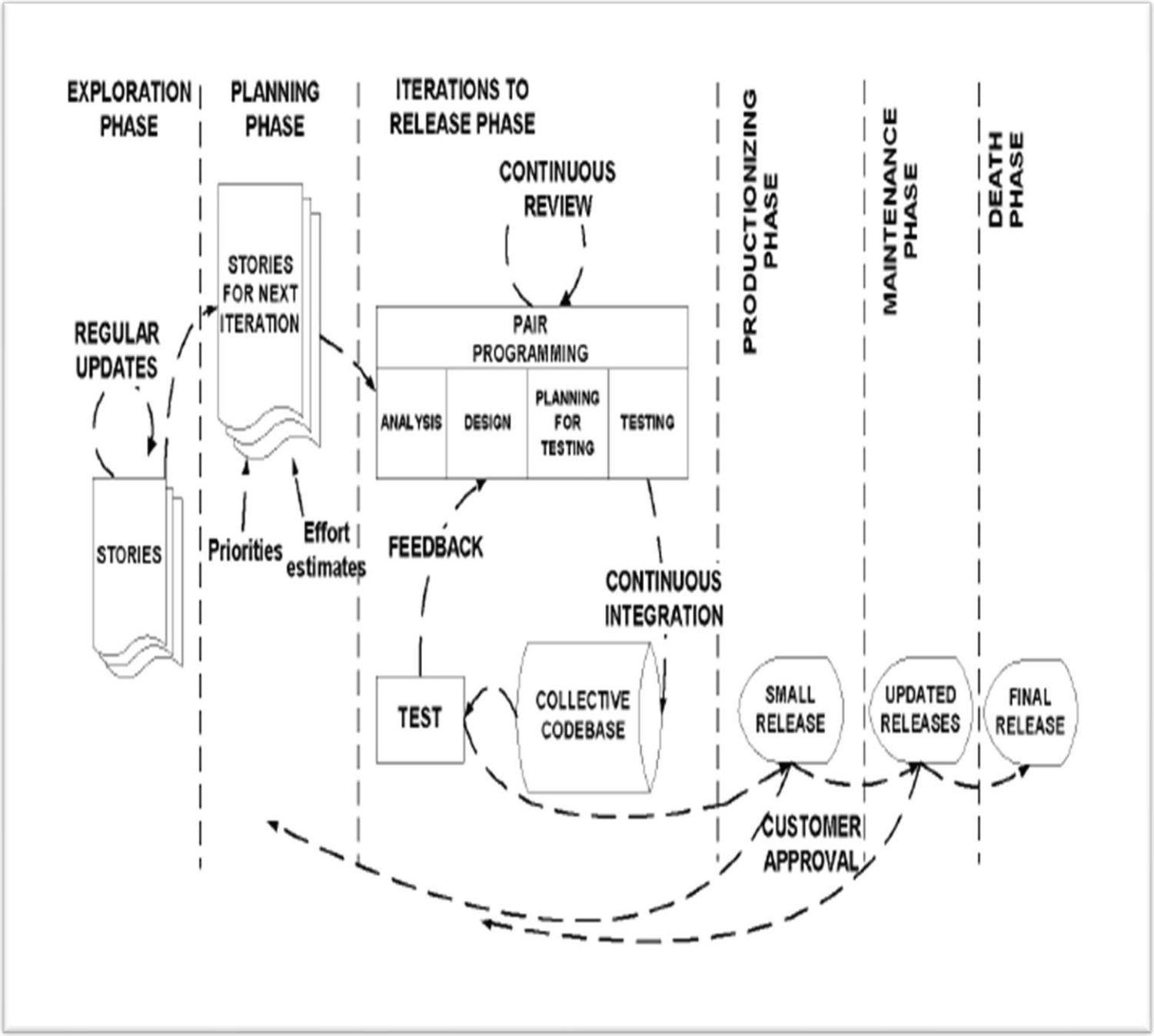
In the designing phase, XP concentrates on keeping things as simple as possible and as long as possible. No extra functionality is added early with the assumption that it might be used later on.

- **Coding**

In the coding phase, XP concentrates on having coding standards to keep the code consistent and easy to read. The coding phase begins by creating test first units. Pair programming is the business card of XP methodology. Each pair of programmers writes their code and then integrates it together. The development team has a collective code ownership. Each team member can change or refactor any part of the code.

- **Extreme Testing**

Extreme Programming is obsessed with feedback, and in software development, good feedback requires good testing. Top XP teams practice "test-driven development". Test in XP comes in two types: unit tests and customer tests. The coding phase begins by creating test first units for each feature to be developed. The developed feature should pass all the test units to be considered as completed. This is called unit testing. Unit Tests are automated tests written by the developers to test functionality as they write it. Acceptance Tests or customer tests are specified by the customer to test that the overall system is functioning as planned. Automated testing results in much better overall quality. Basically, before programmers add a feature, they write a test for it.



Roles

- Business analyst: -Translates business needs into requirements.
- Project manager: - Who will be responsible for knowing all background of the software plan.
- Developers: -They are in charge of writing the code and developing the software products.
- UX/UI Designers: -They provide support to projects to ensure the practices are used during the development process.
- Testers: - They are responsible for ensuring that the software solution meets the requirements and compiles with the quality standards.

Argument for choosing this Model :

XP model mainly focused on unit testing and several kinds of testing also occurs that's why the software which follows the XP model faces less bugs and errors than other model base software.
XP is faster and time efficient and this XP model greatly focus highly prioritize featured of a software. In XP model all types of work or all types of developments runs parallelly every time. The great advantage of this model is that we don't redo works but updates according to customers requirement or desire. And we don't need to start again like other models. When it's released but even after that it never stop analysing and like usually it detects the bug and solve the problem.

LAB (6) Bug Report

Project Name: Youth loan management	Test Designed by: DEHAN,JASSY,ZERIN,NIBAL
Test Case ID: FR_1	Test Designed date: 06/11/2022
Test Priority (Low, Medium, High): HIGH	Test Executed by: DEHAN,JASSY,ZERIN,NIBAL
Module Name: Login Session	Test Execution date: 06/11/2022
Test Title: verify login with valid username and password	
Description: Test website login page	
Precondition (If any): User must have valid username and password	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Enter username 3. Enter password 4. Click submit	Username: BLACKBOX Password: 829	User should login into the application	As expected,	Pass
Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.				

Project Name: Youth loan management	Test Designed by: DEHAN,JASSY,ZERIN,NIBAL
Test Case ID: FR_1	Test Designed date: 06/11/2022
Test Priority (Low, Medium, High): HIGH	Test Executed by: DEHAN,JASSY,ZERIN,NIBAL
Module Name: LOAN PARTICIPATION	Test Execution date: 06/11/2022
Test Title: Apply for loan with valid reason and age	
Description: Test applications loan applying	
Precondition (If any): User must have valid reason and age	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
5. Go to apps main page 6. Enter valid reason 7. Enter valid age 8. Click submit	Valid reason: Start up Valid age: 22-30	User should give valid reason and age into the application	As expected,	Pass

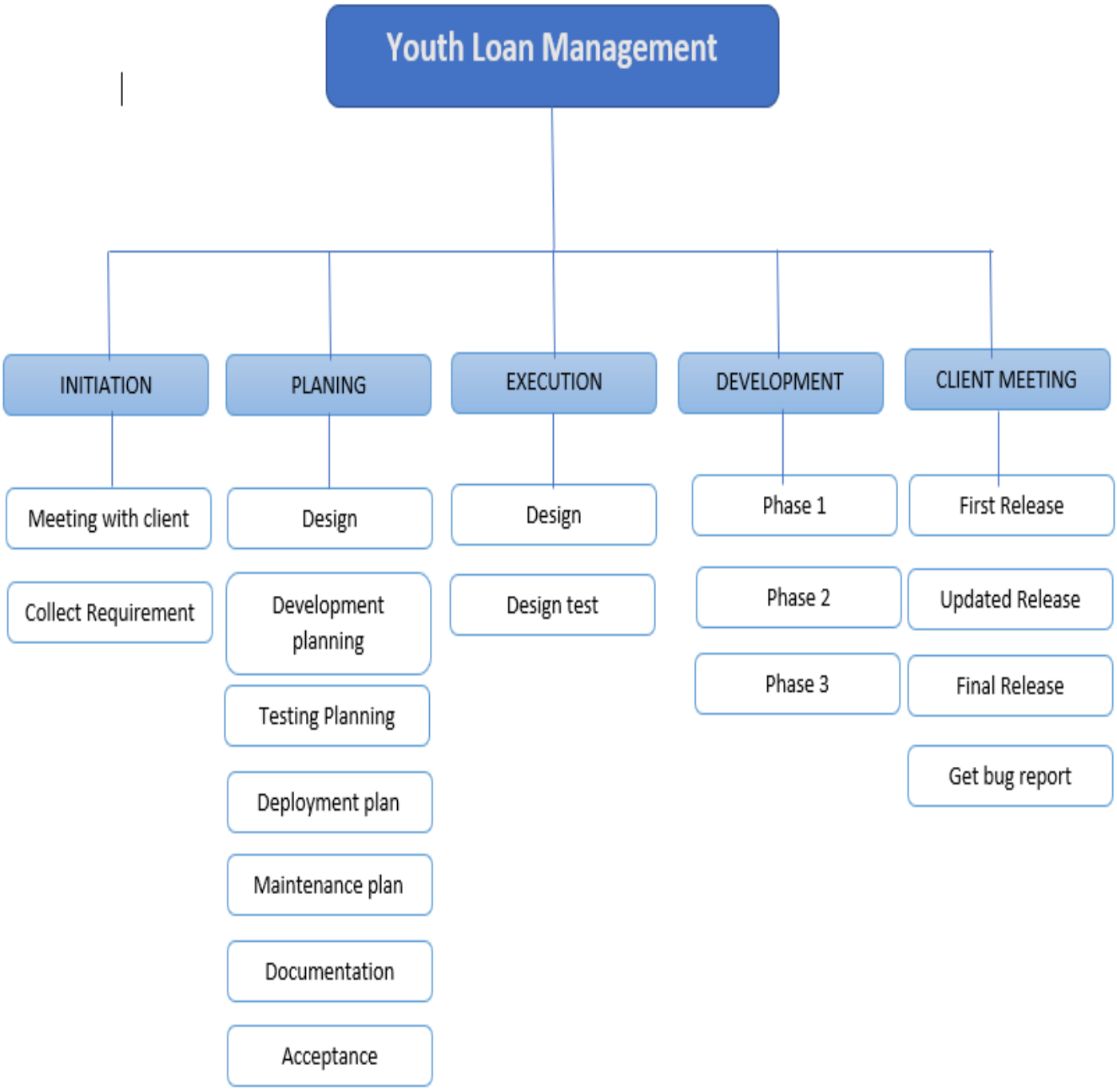
Post Condition: User is validated with database and successfully apply for loan. The account session details are stored in the database.

Project Name: Youth loan management	Test Designed by: DEHAN,JASSY,ZERIN,NIBAL
Test Case ID: FR_1	Test Designed date: 06/11/2022
Test Priority (Low, Medium, High): HIGH	Test Executed by: DEHAN,JASSY,ZERIN,NIBAL
Module Name: Admin Login	Test Execution date: 06/11/2022
Test Title: verify login with valid adminname and password	
Description: Test website login page	
Precondition (If any): User must have valid username and password	

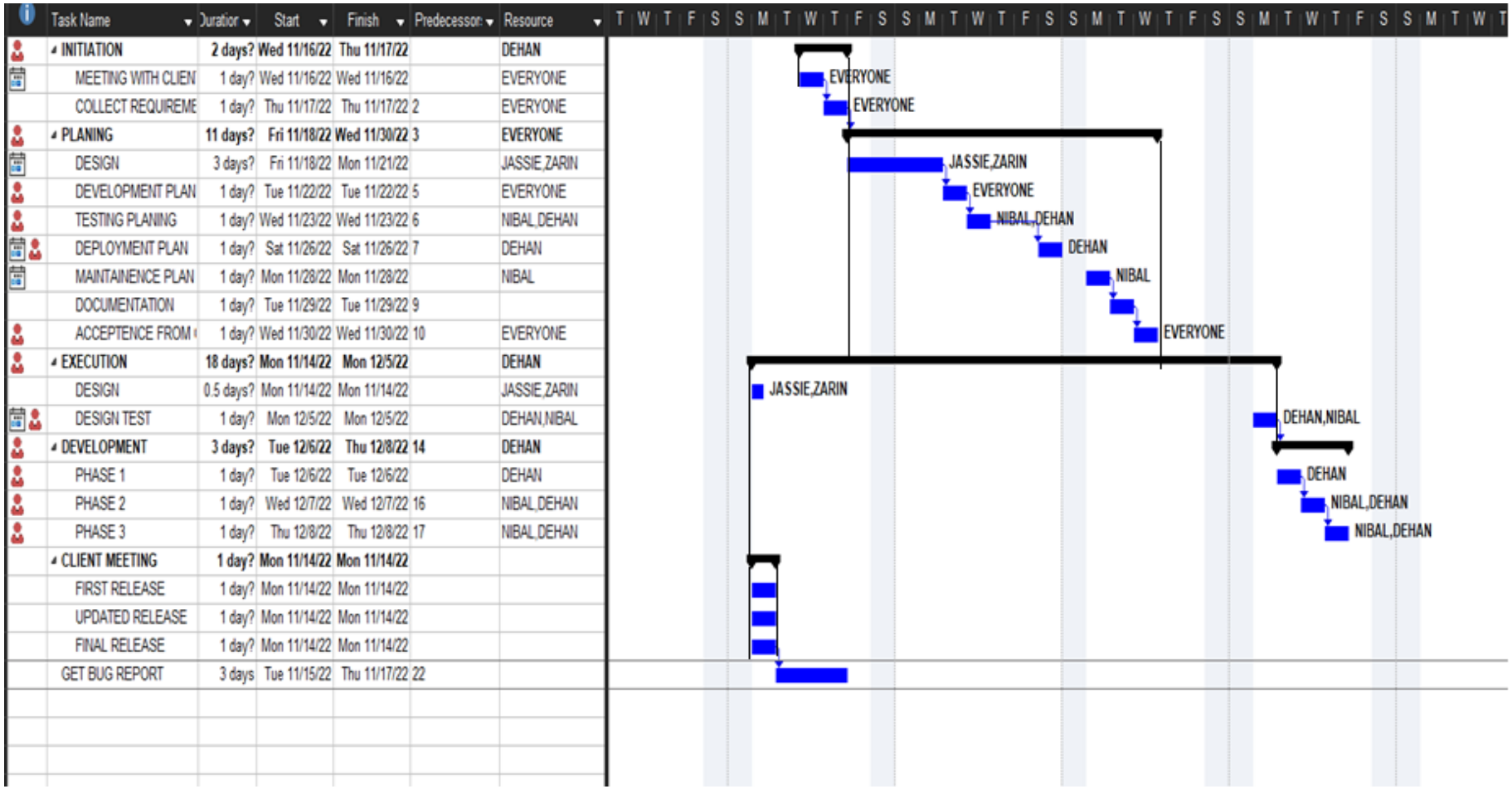
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
9. Go to the website 10. Enter username 11. Enter password 12. Click submit	adminname: BLACKBOX Password: 829	User should login into the application	As expected,	Pass

Post Condition: is validated with database and successfully login to account. The account session details are logged in the database.

LAB (7) WBS


Youth Loan Management
INITIATION
PLANING
EXECUTION
DEVELOPMENT
CLIENT MEETING
Meeting with client
Collect Requirement
Design
Development planning
Testing Planning
Deployment plan
Maintenance plan
Documentation
Acceptance
Design
Design test
Phase 1
Phase 2
Phase 3
First Release
Updated Release
Final Release
Get bug report

Effort Estimation



	Task Name	Duration	Start	Finish	Predecessors	Resource
	INITIATION	**2 days?**	**Wed 11/16/22**	**Thu 11/17/22**		**DEHAN**
	MEETING WITH CLIEN	1 day?	Wed 11/16/22	Wed 11/16/22		EVERYONE
	COLLECT REQUIREME	1 day?	Thu 11/17/22	Thu 11/17/22	2	EVERYONE
	PLANING	**11 days?**	**Fri 11/18/22**	**Wed 11/30/22**	3	**EVERYONE**
	DESIGN	3 days?	Fri 11/18/22	Mon 11/21/22		JASSIE,ZARIN
	DEVELOPMENT PLAN	1 day?	Tue 11/22/22	Tue 11/22/22	5	EVERYONE
	TESTING PLANING	1 day?	Wed 11/23/22	Wed 11/23/22	6	NIBAL,DEHAN
	DEPLOYMENT PLAN	1 day?	Sat 11/26/22	Sat 11/26/22	7	DEHAN
	MAINTAINENCE PLAN	1 day?	Mon 11/28/22	Mon 11/28/22		NIBAL
	DOCUMENTATION	1 day?	Tue 11/29/22	Tue 11/29/22	9	
	ACCEPTENCE FROM	1 day?	Wed 11/30/22	Wed 11/30/22	10	EVERYONE
	EXECUTION	**18 days?**	**Mon 11/14/22**	**Mon 12/5/22**		**DEHAN**
	DESIGN	0.5 days?	Mon 11/14/22	Mon 11/14/22		JASSIE,ZARIN
	DESIGN TEST	1 day?	Mon 12/5/22	Mon 12/5/22		DEHAN,NIBAL
	DEVELOPMENT	**3 days?**	**Tue 12/6/22**	**Thu 12/8/22**	14	**DEHAN**
	PHASE 1	1 day?	Tue 12/6/22	Tue 12/6/22		DEHAN
	PHASE 2	1 day?	Wed 12/7/22	Wed 12/7/22	16	NIBAL,DEHAN
	PHASE 3	1 day?	Thu 12/8/22	Thu 12/8/22	17	NIBAL,DEHAN
	CLIENT MEETING	**1 day?**	**Mon 11/14/22**	**Mon 11/14/22**		
	FIRST RELEASE	1 day?	Mon 11/14/22	Mon 11/14/22		
	UPDATED RELEASE	1 day?	Mon 11/14/22	Mon 11/14/22		
	FINAL RELEASE	1 day?	Mon 11/14/22	Mon 11/14/22		
	GET BUG REPORT	3 days	Tue 11/15/22	Thu 11/17/22	22	

LAB (8) Resource Allocation

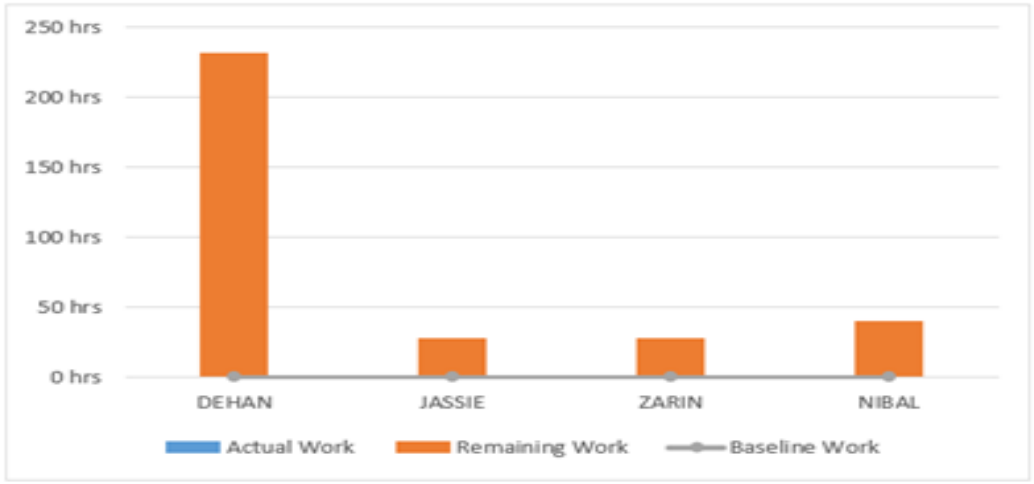
	Resource Name	Type	Material	Initials	Group	Max.	Std. Rate	Ovt.	Cost/Use	Accrue	Base	Code
1	DEHAN	Work		D		100%	$70.00/hr	$0.00/hr	$0.00	Prorated	Standard	
2	JASSIE	Work		J		100%	$70.00/hr	$0.00/hr	$0.00	Prorated	Standard	
3	ZARIN	Work		Z		100%	$70.00/hr	$0.00/hr	$0.00	Prorated	Standard	
4	NIBAL	Work		N		100%	$70.00/hr	$0.00/hr	$0.00	Prorated	Standard	
5	Computer	Material		C			$1,000.00		$0.00	Prorated		
6	Software	Material		S			$100.00		$0.00	Prorated		

RESOURCE OVERVIEW

RESOURCE OVERVIEW

RESOURCE STATS

Work status for all work resources.

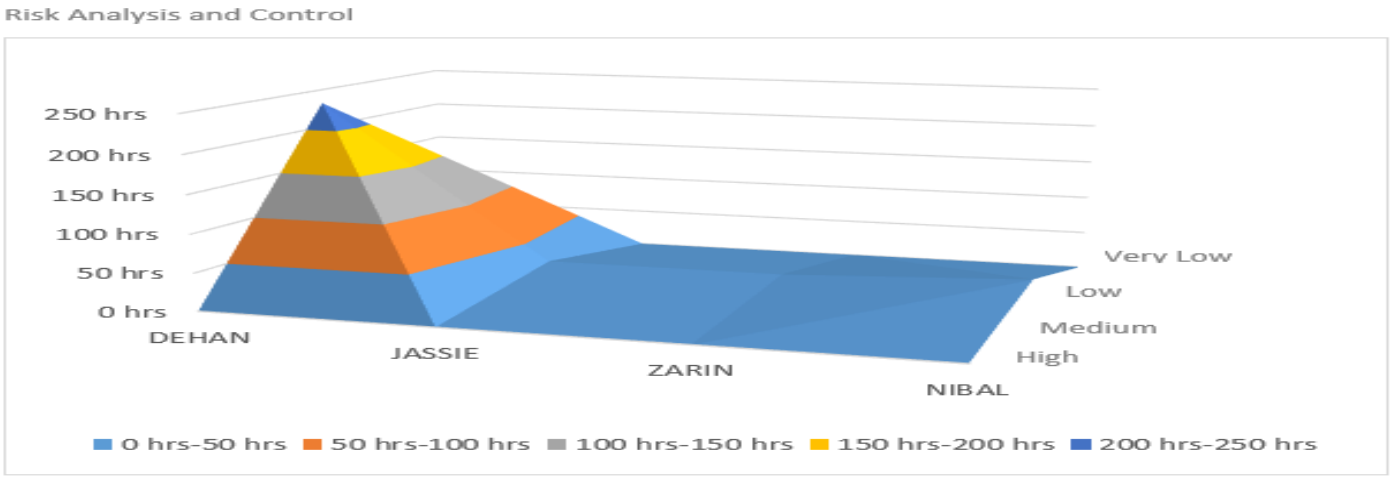


RESOURCE STATUS

Remaining work for all work resources.

Name	Start	Finish	Remaining Work
DEHAN	Mon 11/14/22	Thu 12/8/22	232 hrs
JASSIE	Mon 11/14/22	Mon 11/21/22	28 hrs
ZARIN	Mon 11/14/22	Mon 11/21/22	28 hrs
NIBAL	Wed 11/23/22	Thu 12/8/22	40 hrs

Work done 100% after teams' effort and participation.

LAB (9) Risk Analysis

Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Risk	Probability	Impact	Risk Level (Text4) (Text4)	Risk Indicator
	INITIATION	**2 days?**	**Wed 11/16/22**	**Thu 11/17/22**		**DEHAN**	**Initiation phase**	**1**	**1**	**very low**	☑
	MEETING WITH CLIEN	1 day?	Wed 11/16/22	Wed 11/16/22		EVERYONE				#ERROR	
	COLLECT REQUIREME	1 day?	Thu 11/17/22	Thu 11/17/22	2	EVERYONE				#ERROR	
	PLANING	**11 days?**	**Fri 11/18/22**	**Wed 11/30/22**	**3**	**EVERYONE**	**planing phase**	**3**	**3**	**medium**	⚠
	DESIGN	3 days?	Fri 11/18/22	Mon 11/21/22		JASSY,ZERIN				#ERROR	
	DEVELOPMENT PLAN	1 day?	Tue 11/22/22	Tue 11/22/22	5	EVERYONE				#ERROR	
	TESTING PLANING	1 day?	Wed 11/23/22	Wed 11/23/22	6	NIBAL,DEHAN				#ERROR	
	DEPLOYMENT PLAN	1 day?	Sat 11/26/22	Sat 11/26/22	7	DEHAN				#ERROR	
	MAINTAINENCE PLAN	1 day?	Mon 11/28/22	Mon 11/28/22		NIBAL				#ERROR	
	DOCUMENTATION	1 day?	Tue 11/29/22	Tue 11/29/22	9					#ERROR	
	ACCEPTENCE FROM	1 day?	Wed 11/30/22	Wed 11/30/22	10	EVERYONE				#ERROR	
	EXECUTION	**18 days?**	**Mon 11/14/22**	**Mon 12/5/22**		**DEHAN**	**execution phase**	**2**	**2**	**low**	‼
	DESIGN	0.5 days?	Mon 11/14/22	Mon 11/14/22		JASSY,ZERIN				#ERROR	
	DESIGN TEST	1 day?	Mon 12/5/22	Mon 12/5/22		DEHAN,NIBAL				#ERROR	
	DEVELOPMENT	**3 days?**	**Tue 12/6/22**	**Thu 12/8/22**	**14**	**DEHAN**	**development phase**	**4**	**4**	**very high**	✖
	PHASE 1	1 day?	Tue 12/6/22	Tue 12/6/22		DEHAN				#ERROR	
	PHASE 2	1 day?	Wed 12/7/22	Wed 12/7/22	16	NIBAL,DEHAN				#ERROR	
	PHASE 3	1 day?	Thu 12/8/22	Thu 12/8/22	17	NIBAL,DEHAN				#ERROR	
	CLIENT MEETING	**1 day?**	**Mon 11/14/22**	**Mon 11/14/22**		**EVERYONE**	**client meeting phase**	**2**	**2**	**low**	‼
	FIRST RELEASE	0.5 days?	Mon 11/14/22	Mon 11/14/22		JASSY,ZERIN				#ERROR	
	UPDATED RELEASE	0.5 days?	Mon 11/14/22	Mon 11/14/22		DEHAN,NIBAL				#ERROR	
	FINAL RELEASE	1 day?	Mon 11/14/22	Mon 11/14/22		EVERYONE				#ERROR	
	GET BUG REPORT	3 days	Tue 11/15/22	Thu 11/17/22	22	CLIENT				#ERROR