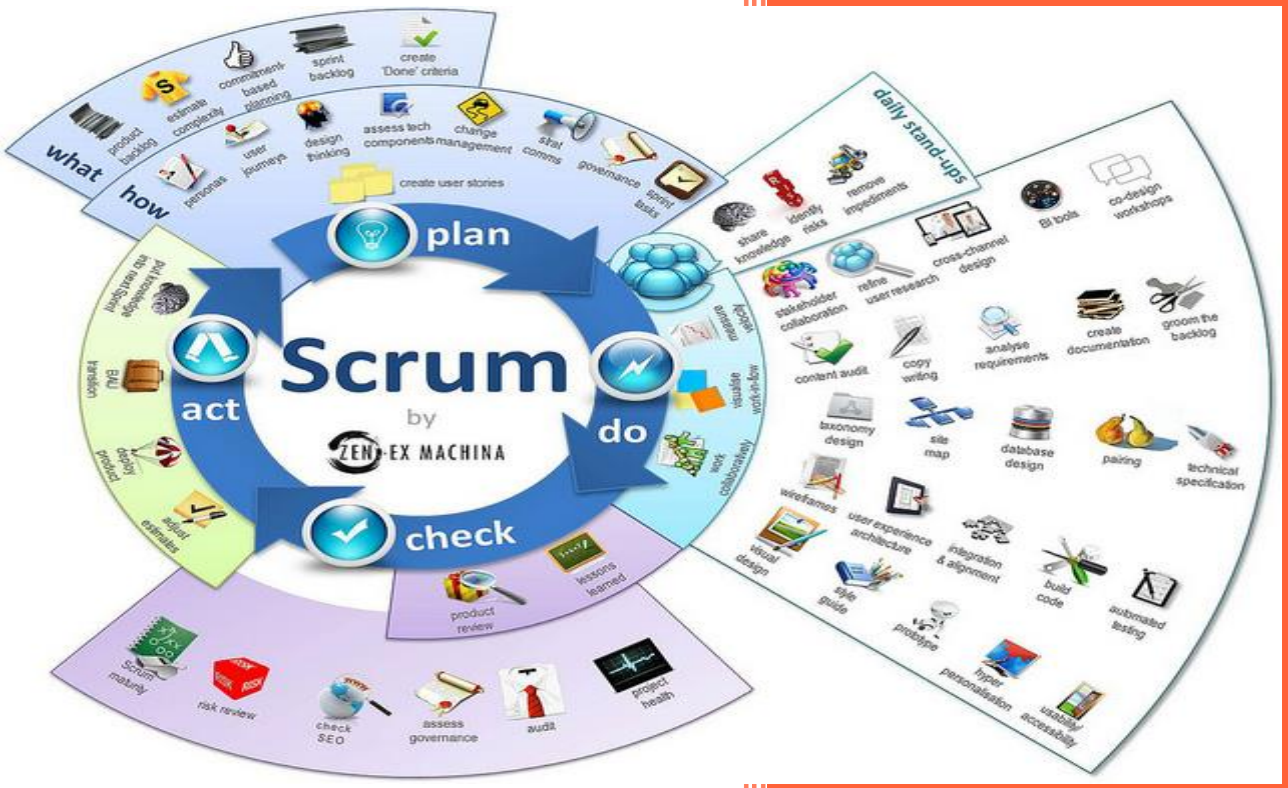
Assignment 3

DT354/3 - Business Modelling



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Team Roles	
Product Owner	*Vinay*
Scrum Master	*Aaron*
Development Team	*Conall, Eugene, David, Danny*

User Stories

Register – As a user I want to be able to create an account with my online bank DT354 so I can carry out some banking online instead of physically going to the bank.

Tasks

- Data base environment created
- User details to be stored into the database

Acceptance Criteria

- *User must have a unique username*
- *User must confirm their password*
- *User cannot leave fields blank*
- *User details added to database and registration email is sent*

Login – As a user I want to be able to log into my account and access the banking options available to me online

Tasks

- Error checking and validation of details entered by the user
- Iterating through the database to find the user with the correct username and password

Acceptance Criteria

- User's username and password must match in the database
- User must not leave fields blank
- Login option on register page

Menu – As a user I want to be able to navigate the menu to access the functionalities such as the loan calculator, apply for a loan, log out and view statements.

Tasks

- Make sure user is logged in
- Pages for each menu option must exist and be created before hand

Acceptance Criteria

- User should be able to navigate to each page(option) through the menu
- User should be able to choose an option from the menu
- Each option chosen by the user should redirect to the correct webpage
- Options should include – logout, apply for loan, interest payment calculator, view transaction

Loan Application – As a user I want to be able to apply for loan by inputting my details (criteria) and having my application reviewed and accepted or rejected.

Tasks

- *Take in the user input*
- *Perform validation on user input*
- *Asses criteria in order to approve/reject loan*
- *Return the result to the user on screen*
- *Store result in the database*

Acceptance Criteria

- Criteria must be filled out by the user
- Calculations must be tested and correct based on the user criteria
- Loan must be approved/ not approved
- Log each application result to the database
- Back Button to main menu available

Interest Calculator – As a user I want to be able to calculate interest payments on my loan by inputting my loan details in the calculator, choose my interest payment options of compounding interest, monthly or quarterly (simple interest) – I want to be able view the interest calculated and the balance with interest added on over the loan term.

Tasks

- *Take user input*
- *Perform interest calculations on the criteria*
- *Display the initial criteria*
- *Display interest amount and the balance*

Acceptance Criteria

- Fields must be filled out by user
- Loan calculations must be correct
- User sees the interest on loan payments in a displayed format
- Back button to return to the main menu available
- Log each use of the calculator in database

View transactions – As a user I want to be able to view my transaction history in terms of my previous loan applications and usage of the interest payment calculator

Tasks

- Create corresponding columns in data base
- Use of the calculator and interest and payment duration should be available in DB

Acceptance Criteria

- User should be able to view a list of their usage history and previous loan applications.

Sprint Planning

Sprint 1

Tasks

- Create database
  - Decide on what database software to use
  - Decide what information will be stored in the database
  - Create database and table
- Register page
  - Take in user input
  - Create JSP page
  - Link it to database
  - Code logic that takes in user input and stores it in the database table
  - Ensure all required fields are filled
- Login page
  - Take in user input
  - Create JSP page
  - Link it to home page
  - Code logic that checks user name and password against the information held in the database
- Link database
  - Use JDBC to connect to the JSP pages
  - Test the connection to ensure user information is successfully stored in the table and can be retrieved from the table
- Testing Stage 1
  - Check database functionality and constraints
  - Test mathematical correctness
  - Ensure consistent webpage navigation
  - Relevant error-handling and prompts

Stories covered in Sprint 1

- Register
- Login

What story/task is covered by whom?

Create database – David Murphy

Register page – Eugene McCormack

Login page – Conall Hunt

Link Database – Vinay Kumar

User interface – Danny Brassil/Aaron Bermingham

Testing – entire team

Sprint 2

Tasks

- Menu
  - Create JSP page

    - Present User with options for site navigation (including logout)
    - Take in user selection
    - Direct user to requested page in site.

- Loan Application
    - Create JSP page
    - Take in user input
    - Ensure all required fields are filled
    - Code logic that checks that information satisfies requirements for loan.
    - Return result of Application to customer.
    - Add result to customer's file in database using JDBC.

- Interest Calculator
    - Create JSP page
    - Take in user input
    - Ensure all required fields are filled
    - Code algorithms to calculate compound interest based on user input.
    - Print table containing relevant interest details and display to user

- View Transactions
    - Create JSP page
    - Read previous user transactions from database using JDBC
    - Show recent transactions including loan applications and interest calculations.

- Testing Stage 2
    - Check database functionality and constraints
    - Test mathematical correctness
    - Ensure consistent webpage navigation
    - Relevant error-handling and prompts

Stories covered in Sprint 2

- Menu
- Loan Application
- Interest Calculator
- View Transactions

What story/task is covered by whom?

Database Management – Vinay Kumar

Menu – Danny Brassil

Interest Calculator – Eugene McCormack

Loan Application – Conall Hunt

User Interface – David Murphy

View Transactions – Aaron Bermingham

Testing – Entire Team

Product Backlog

Backlog at beginning

Product Backlog - Start						
Item	**Story**	**Sprint Ready**	**Priority**	**Status**	**Story Points(20 points)**	**Assigned to Sprint**
Sprint 1						
Create Database	No	Yes	XL	Not Started	1	No
Register page	Yes	Yes	XL	Not Started	3	No
Login page	Yes	Yes	M		2	No
Menu	Yes	Yes	S	Not Started	2	No
Link Database	No	Yes	S	Not Started	-	No
Testing 1	No	No	M	Not Started	-	No
Sprint 2						
Loan approval	Yes	Yes	M	Not Started	5	No
View transactions	Yes	No	S	Not Started	2	No
Interest calculator	Yes	Yes	L	Not Started	5	No
Testing 2	No	No	M	Not Started	-	No

Backlog after Sprint 1

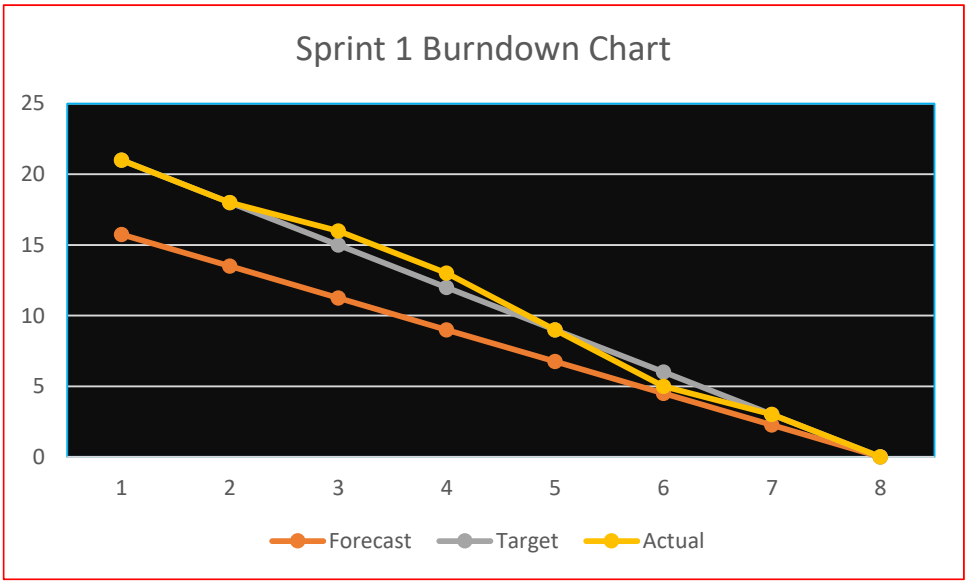
Product Backlog - After S1						
Item	**Story**	**Sprint Ready**	**Priority**	**Status**	**Story Points(20 points)**	**Assigned to Sprint**
Sprint 1						
Create Database	No	Yes	XL	Complete	1	YES
Register page	Yes	Yes	XL	Complete	3	YES
Login page	Yes	Yes	M	Complete	2	YES
Link Database	No	Yes	S	Complete	-	YES
Testing 1	No	No	M	Complete	-	YES
Sprint 2						
Loan approval	Yes	Yes	M	Not Started	5	YES
Interest calculator	Yes	Yes	L	Not Started	5	YES
View transactions	Yes	No	S	Not Started	2	YES
Menu	Yes	Yes	S	In Progress	2	YES
Testing 2	No	No	M	Not Started	-	YES

Backlog after Sprint 2

Product Backlog - After S2						
Item	**Story**	**Sprint Ready**	**Priority**	**Status**	**Story Points(20 points)**	**Assigned to Sprint**
Sprint 1						
Create Database	No	Yes	XL	Complete	1	YES
Register page	Yes	Yes	XL	Complete	3	YES
Login page	Yes	Yes	M	Complete	2	YES
Link Database	No	Yes	S	Complete	-	YES
Testing 1	No	No	M	Complete	-	YES
Sprint 2						
Loan approval	Yes	Yes	M	Incomplete	5	YES
Interest calculator	Yes	Yes	L	Complete	4	YES
View transactions	Yes	No	S	Not Started	2	
Menu	Yes	Yes	M	Complete	3	YES
Testing 2	No	No	M	Not Started	-	YES

Sprint Backlogs

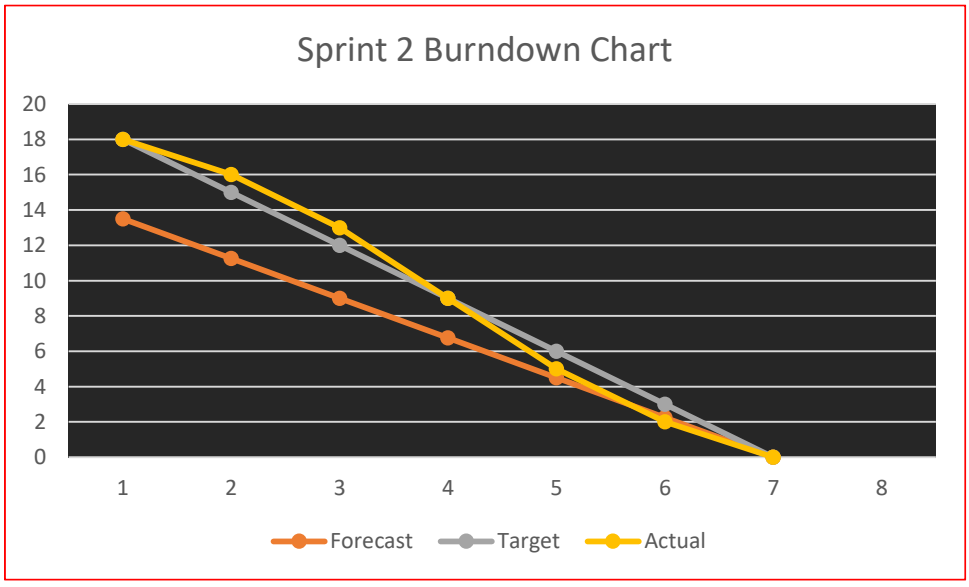
Sprint Backlog					
Sprint 1					
Story	**Task**	**Responsible**	**Story Points(20)**	**Status**	
Create DB	Decide database software	David Murphy	1	Completed	
	Decide what information will be stored in the database				
	Create database and table				
Register page	Take in user input	Eugene McCormack	3	Completed	
	Create JSP page				
	Link it to the database				
	Code logic that takes in user input and stores it in the database				
	Ensure all required fields are filled				
Login page	Take in user input	Conall Hunt	2	Completed	
	Create JSP page				
	Link it to home page				
	Code logic that checks user name and password against the information held in the database				
Menu	-				
Link Database	Use JDBC to connect to the JSP pages	Vinay Kumar		Completed	
	Test the connection to ensure user information is successfully stored in the table and can be retrieved from the table				



S1 – Review/Retrospective

- Majority of tasks completed within time frame except for the menu. Underestimation of all sprint tasks and complexity. Scrum master suggested pushing the menu task to sprint 2 as it is not intrinsic to the system at this point. The delaying of the menu task was for the benefit of the team to relieve time pressure from external course work.
- If done differently we would have prioritised our time management a bit better to coincide with ongoing coursework.

Sprint Backlog					
Sprint 2					
Story	**Task**	**Responsible**	**Story Points(20)**	**Status**	
Interest calculator	Create JSP page	Eugene McCormack	4	Completed	
	Take in user input				
	Ensure all required fields are filled				
	Code algorithms to calculate compound interest based on user input.				
	Print table containing relevant interest details to user				
View Transaction	Create JSP page	Aaron Bermingham	2	Not Started	
	Read previous user transactions from database using JDBC				
	Print table containing recent banking transactions including loan applications and interest calculations.				
Menu	Create JSP page	Danny Brassil	3	Completed	
	Present User with options for site navigation (including logout)				
	Take in user selection				
	Direct user to requested page in site.				
Loan Approval	Create JSP page	Conall Hunt	5	Incomplete	
	Take in user input				
	Ensure all required fields are filled				
	Code logic that checks that information satisfies requirements for loan.				
	Return result of Application to customer.				
	Add result to customer's file in database.				
Testing	Check database functionality and constraints	Entire Team		Not Started	
	Test mathematical correctness				
	Ensure consistent webpage navigation				
	Relevant error-handling and prompts				



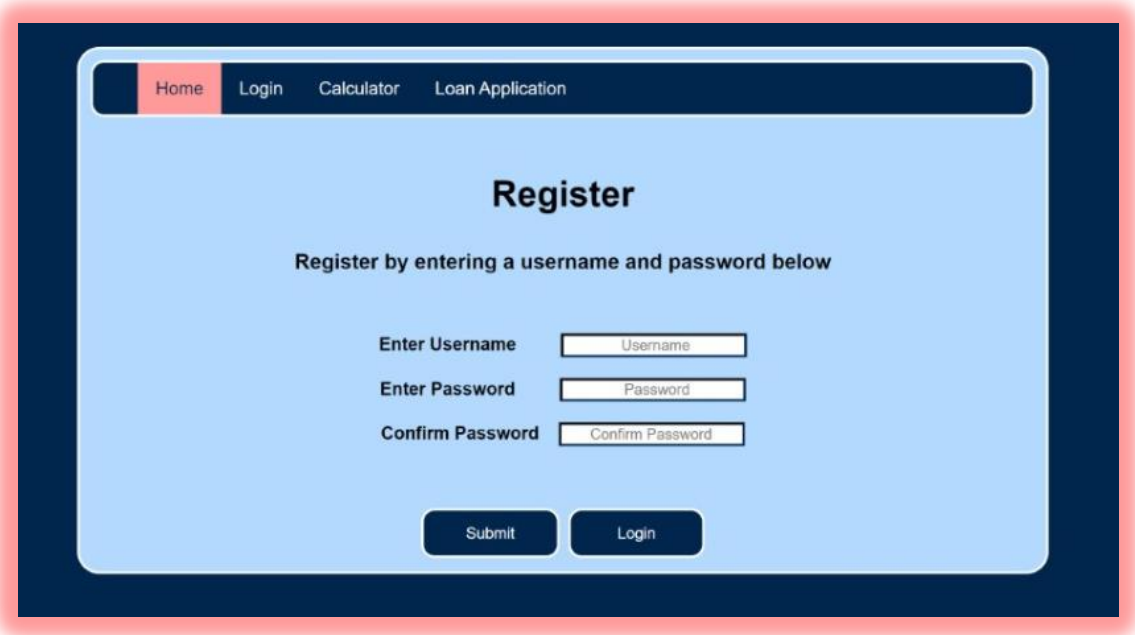
S2 – Review/Retrospective

- Priority placed on completing the menu in order achieve functional navigation of the application. We completed the interest payments calculator and were please with its performance

- Loan approval complexity proved challenging as we had no background information of the loan process to work off. We had underestimated the effort of the remaining tasks and encountered a lot debugging which took up a lot of our time resources. We realised then the difficulty of the backend programming involving our database. We also found it difficult to move on as we needed the database connectivity to progress and create our transaction function. We spent further time on security aspects of the application where user sessions were logged and cookies/user cache files were cleared. This only allowed registered users access to the features and rejected non registered users.
- If we could go back we would spend less time on the design and visual aspects of our application as we originally intended to have a basic GUI but we put too much effort into it and did not leave enough time for the remaining tasks to be attempted/completed efficiently. This was due to us having to learn how to use CSS and then losing focus of what we needed to achieve we got a bit carried away in how it looked rather than getting every bit of functionality working correctly. It was probably something we could have left until the end before the testing stage to ensure maximum functionality or at least close to 100% completion of the project.
- We were very much against time during this project due to time constraints and conflict between college modules and assignments/exams which effected the completion of our application. Our built upon User interface also really delayed us as you can from the screenshots below.

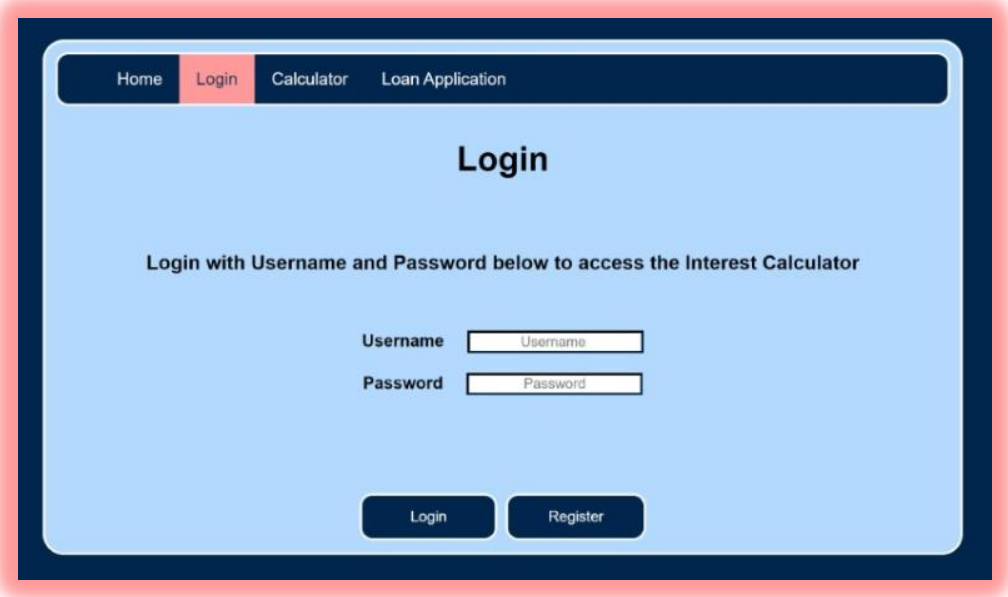
Screen grabs of user stories and application

Register

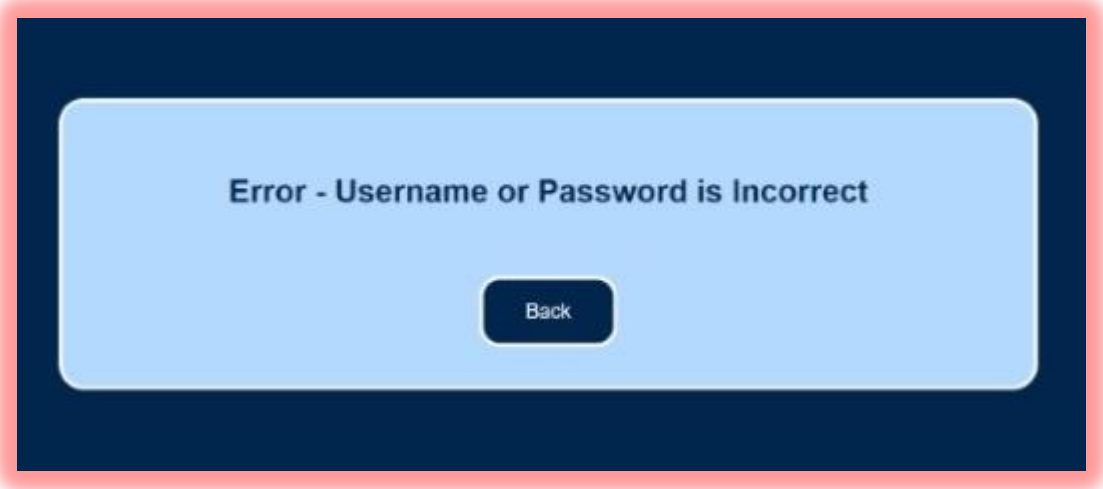


Register Successful

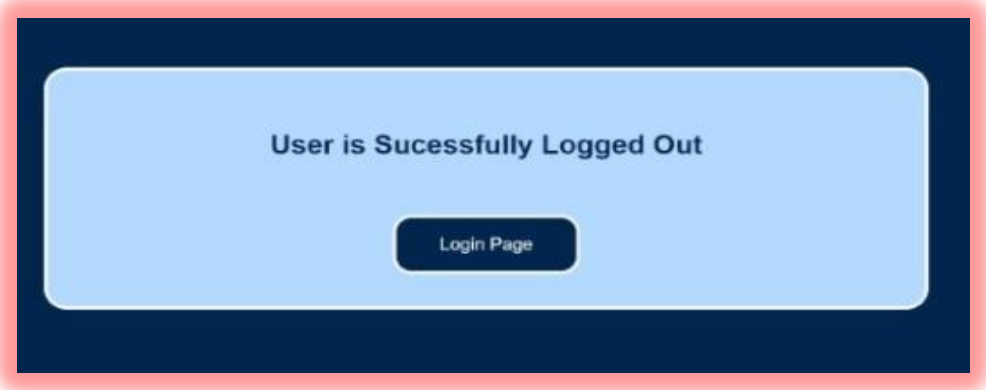
Login



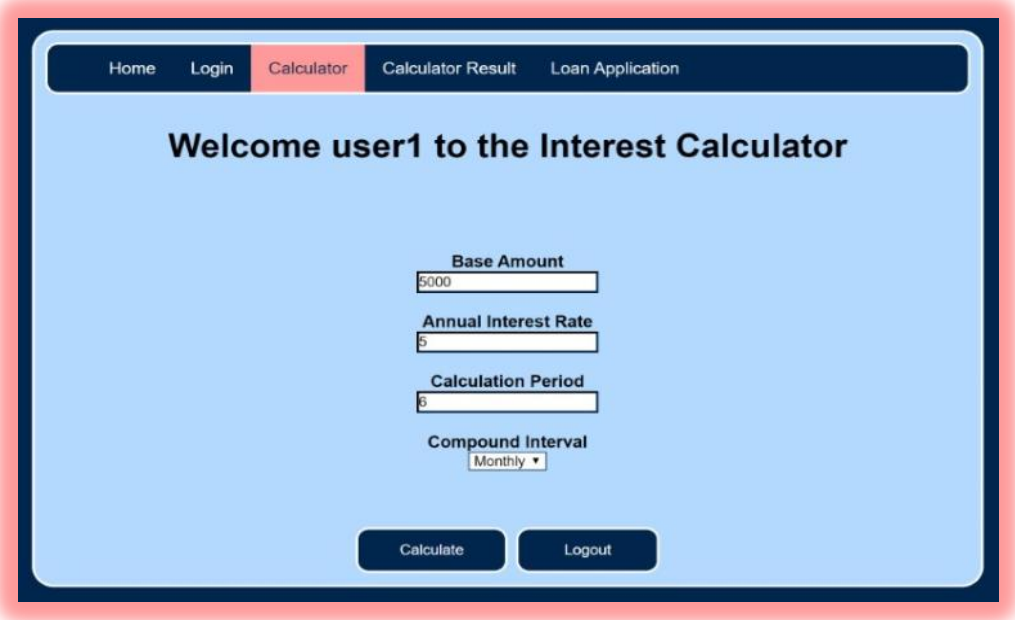
Unsuccessful Login



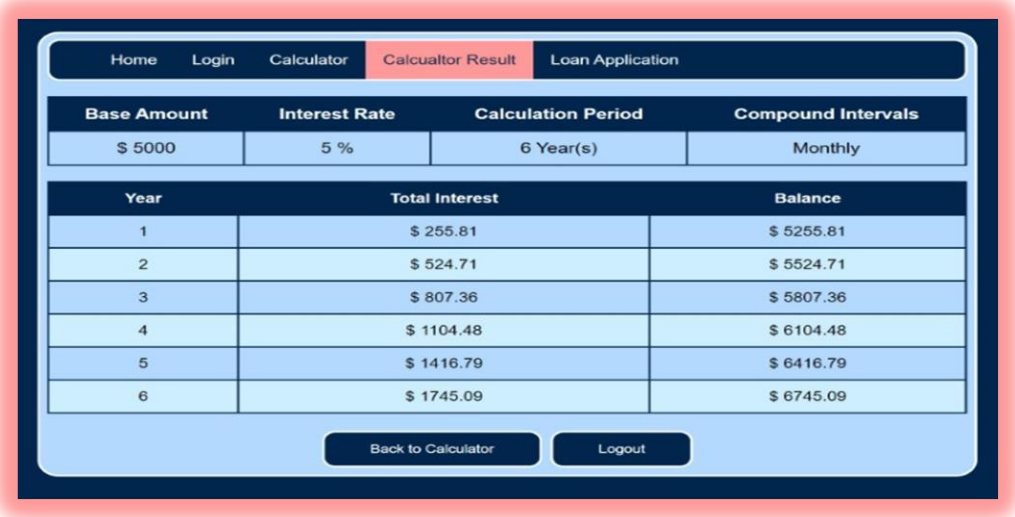
Logout



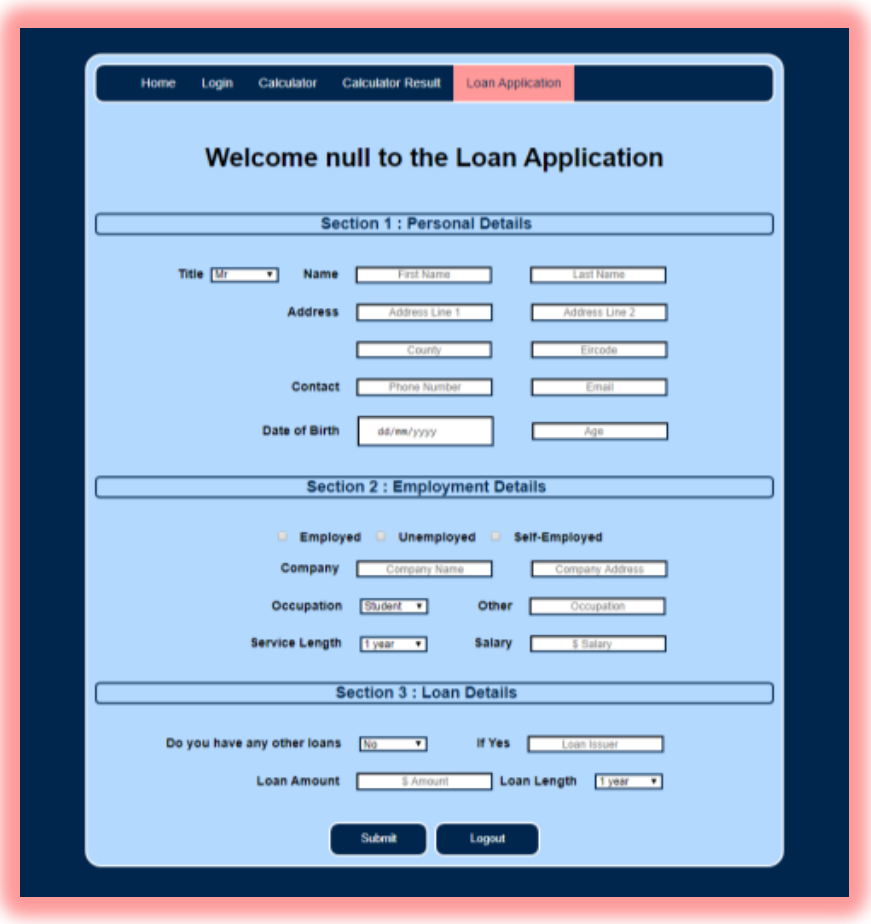
Loan Interest Calculator



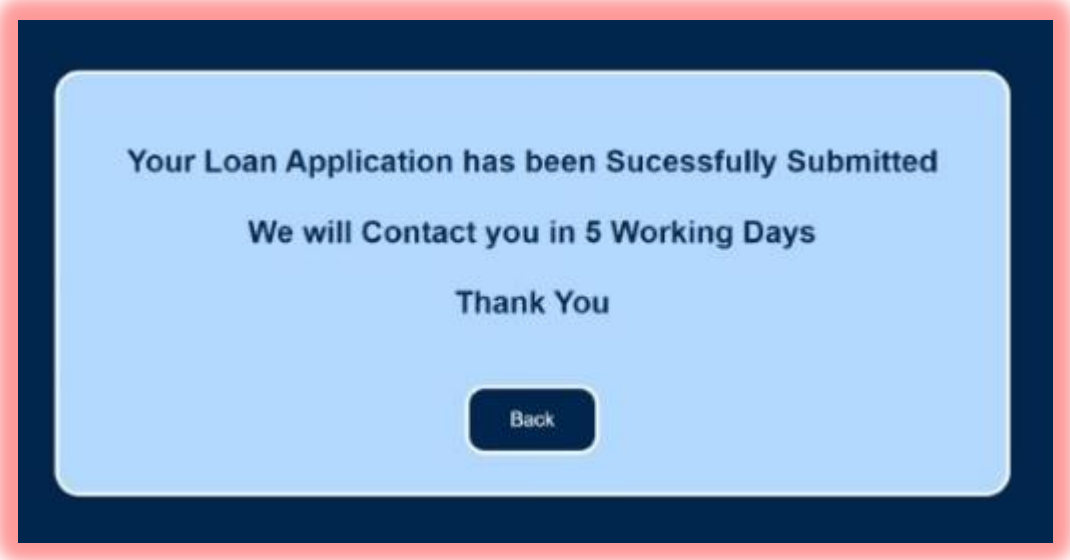
Loan Interest Results



Loan Application Page



After Loan application

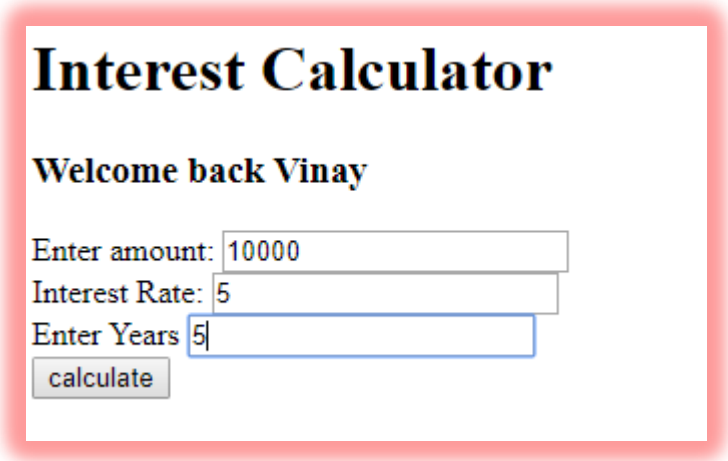


Original Design/ User Interface

Register

Login

Interest Calculator



Interest Calculator

Year	Total Interest	Balance per year
1	€500	€10500
2	€1025	€11025
3	€1576.25	€11576.25
4	€2155.06	€12155.06
5	€2762.82	€12762.82