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Digitized Engineering Notebook

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Governors State University

ABSTRACT

Digitizing engineering notebooks, articles, assignments, multimedia things, event calendar and uploading downloading files from online web portal will certainly help engineering students in their studies.

Here in this abstract we are proposing a system where students can share their notebooks on online web portal and others can read it and download it in a PDF format. This system will surly help and make updated all the students about college activities, studies and other activities.

Proposed system will implement in Microsoft .Net Framework, C#.Net, ASP.Net and required an IIS web server to run it on live server. Developing this system require an IDE i.e. Visual Studio and backed database MS SQL to keep records of notebooks, data and assignments etc.

There will be another super user which will manage student's record and manage and restrict them to access the system. He can manage projects, assignments and assign to students.

Table of Content

1 Project Description

Governors State University required an online system where students can view and share their college notes and project details. System admin will provide the access to the projects and students can upload, download project contents from anywhere. Following modules are proposed for the system

Student

- Registration

  Students need to register on website to get access of projects and contents of project.

- Sign in

  Once registration is completed, student needs to login to the system using his/her credentials.

- Forget Password

  If any student forgets their password he/she can get his/her password from this function. To get password he/she need to provide his registered email address on which system will email his/her password.

- Edit Profile with change password

  This option will provide user to change his profile details and change his/her password.

- View Project List and Details

  There will be a project list which he/she has joined. User can view the details of project which includes Date, Title, Duration, Users, User-wise Tasks, and Discussions

- Export complete Project Details in PDF

  User can export project details on PDF format.

- Select Project & Upload Project Contents

  User can upload contents of project which includes text, video, image, graphs image

- Invite friend via Email into Project

  User can invite his/her friend to participate in project by providing friends email address.

- Project-wise discussion board

  There is a discussion board where user can discuss and comments on project

- Logout

  Logout from system

Admin

- Login

  Admin need to login to the system to get access for all the functionalities

- Manage Project

  Admin can manage project, he can add, update and delete project and its details

- View Students

  Admin can view the student's registration details.

- Logout

  Logout from system

1.1 Competitive Information

Governors State University does not have any online system to give online support to students to share the notes and project documents. Digitizing engineering notebooks, articles, assignments, multimedia things, event calendar and uploading downloading files from online web portal will certainly help engineering students in their studies

1.2 Relationship to Other Applications/Projects

This project is not related with any other system or project. This is self / independent application which will run on online server.

1.3 Assumptions and Dependencies

- If system will use for only college students
- There is no dependency in this system
- User of a system will dependent on others like super admin will manage the entire students where he can deactivate and delete their accounts.
- Website is dependent on web server performance. If server gives best performance there will be no issue running the website.

1.4 Future Enhancements

Future enhancements can be as follows;

- College faculties / Professors also can be user of a system
- They can upload, download contents from system
- Mobile applications can be developed

1.5 Definitions and Acronyms

Acronyms	Definitions
Engineering Notebook	Document where all the class notes are written for future references.
Website	Software application runs on a live server, accessible for all over internet.
Multimedia	Multimedia contents audios, videos etc.
IIS	Internet Information Services – Server to run the .Net website
IDE	Integrated Development Environment

2 Project Technical Description

- Hardware Requirements:

	Server Side	Client Side
Processor	Minimum Core i3 and above	Minimum Core i3 and above
RAM	Minimum 4GB or Higher	Minimum 2GB or Higher
Hard Disk	80 GB or Higher	20 GB or Higher

- Software Requirement:
  - Front end:
    .Net Framework 3.5
  - Back end (Server):
    IIS
  - Database:
    MS-SQL Server 2015 Express
  - Other Technologies:
    HTML, Microsoft Visual Studio 2012
  - Operating System:
    Windows XP, Windows Vista, Win 7
  - Tools:
    Any Browser

Asp.Net:

ASP.Net offers a whole new approach to developing your web applications instead of a single code block that runs whenever the page is submitted, like we had in ASP. ASP.Net offer a richer programming model that emulates an event driven programming.
Static pages, web pages that have the same content each time you view them, are more and more becoming a thing of the past. To encourage the development of your web community and to get visitors to return to your site, you must provide them with a reason to come back. Probably the most compelling reason a person has for returning to your site is because you offer dynamic web content.
Dynamic web pages can change every time they are viewed, or they can offer ways for visitors to send information back to you. ASP.Net provides a way for you to create dynamic web pages.

ASP .NET Controls: - ASP .NET contains a large set of HTML controls. Almost all HTML elements on a page can be defined as ASP .NET control objects that can be controlled by scripts. ASP .NET also contains a new set of object oriented input controls, like programmable list boxes and validation controls. A new data grid control supports sorting, data paging, and everything you expect from a dataset control.

Event Aware Controls: - All ASP .NET objects on a Web page can expose events that can be processed by ASP .NET code. Load, Change and Click events handled by code makes coding much simpler and much better organized.

ASP .NET Components: - ASP .NET components are heavily based on XML. Like new AD Rotator, uses XML's to store advertisement information and configuration.

User Authentication: - ASP .NET supports forms-based user authentication, including cookie management and automatic redirecting of unauthorized logins.
User Accounts and Roles: - ASP .NET allows for user accounts and roles, to give each user (with a given role) access to different server code and executable.

IIS (Internet Information Server):

IIS is an abbreviation for Internet Information Services (formerly Internet Information Server.) It's Microsoft's web server that operates in Windows NT and 2000, giving Windows HTTP capability. IIS Web sites run using a copy of IIS that is installed on your computer. When you create a local IIS Web Site, the pages and folders for your site are stored in a folder under the default IIS folder for Web site. Visual Studio 2008 also creates the appropriate IIS configuration so that the Web site is recognizes by IIS as an application. To create a local IIS Web Site, you need to Administrator privileges on the computer.

HTML: -

The language used to develop web pages is called Hyper Text Markup Language (HTML). HTML is the language interpreted by a browser. Web pages are also called html documents. HTML can be embedded in text to add formatting and linking information. HTML is specified as Tags in an HTML document (I.e. web pages).

2.1 Application Architecture

User:

- There are three types of users in this project. They are Admin, Captain and Member.

Functionalities:

- Admin can accept/decline requests of captains.
- Admin can view and manage captains.
- Admin can view/manage projects.
- Captains can accept/decline requests of members.
- Captain can add/update/delete projects.
- Members can join projects and update the project.
- Users can discuss about the project on the discussion board.
- Users can upload and download the project files.
- Users can send invites to their friends.

2.2 Application Information flows

Admin

- Login

  Admin need to login to the system to get access for all the functionalities

- Manage Project

  Admin can manage project, he can add, update and delete project and its details

- View Students

  Admin can view the student's registration details.

  Admin can accept or decline captain's request.

- Logout

Logout from system

Student

- Registration

  Students need to register on website to get access of projects and contents of project.

  \Student needs to enter his name, contact, email, address, password and add the profile picture and select the user type.

- Sign in

  Once registration is completed, student needs to login to the system using his/her credentials.

- Forget Password

  If any student forgets their password he/she can get his/her password from this function. To get password he/she need to provide his registered email address on which system will email his/her password.

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- Project-wise discussion board

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- Logout

  Logout from system

There are two user types

1. Captain
2. Member

Captain

- Captain can create a project on the website.
- Captain can send invites to his/her friends through email from which they could register on the website.
- Once the user registers on the website as Member, Captain gets his request.
- Captain can accept or decline users request.
- Captain can add/delete the users in a project.

Member

- Member can register on the website using the link provided in the email.
- Member can update the project details.
- Member can view project details and comment on the discussions board.

2.3 Interactions with other Projects (if Any)

No interaction with any other project.

2.4 Interactions with other Applications

No interaction with any other application.

2.5 Capabilities

Proposed system required a database which needs to handle the system data. System is built on .Net framework; it means it uses Microsoft SQL Server Database. All the project data and contents will store in database using SQL queries.

2.6 Risk Assessment and Management

As a system is quite lengthy, need to spend as much as time to complete the project in time.

3 Project Requirements

3.1 Identification of Requirements

Req. 1 - Upload Project Contents

Project captain and Members can upload contents of a project

Once captain and members are in a project, they can upload the project details, documents, diagrams, images, videos, audios etc.

Req. 2 - Download Project Contents

Captain and team members can download the project contents in PDF format.

By clicking on download button captain and team members can download all the contents in a PDF format.

Req. 3 - Project Discussion

Discussion Forum

Project team members and captain can discuss on project by text messages. All the messages will be stored in a database which can view later for any reference.

3.2 Operations, Administration, Maintenance and Provisioning (OAM&P)

System admin can back up all the website data from server admin panel.

3.3 Security and Fraud Prevention

Every user need to login to the system to access the website contents.

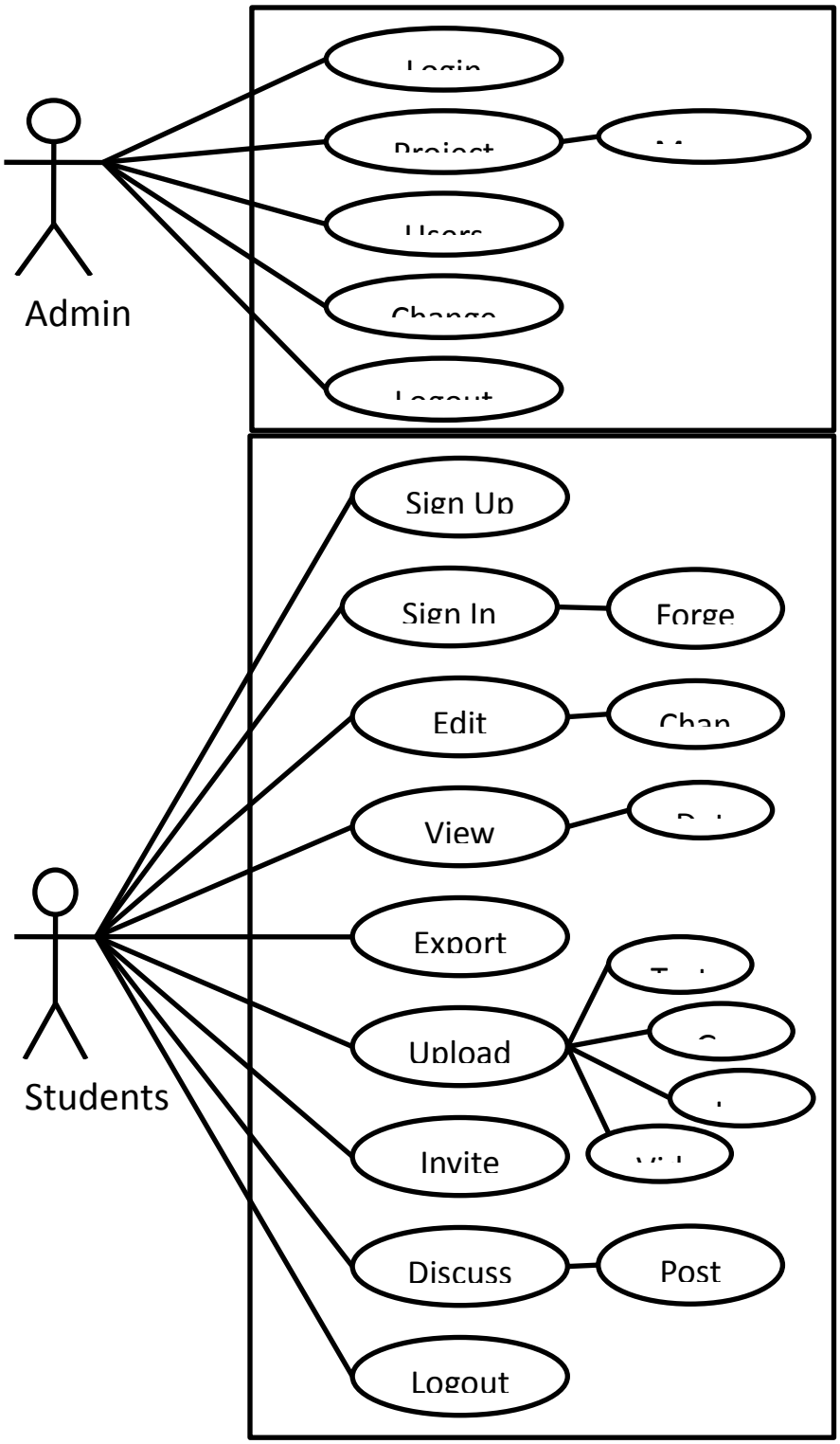
3.4 Release and Transition Plan

Project will complete in 4-6 weeks; complete project will host on a server and will provide the access to the admin.

4 Project Design Description

Use Case Diagram

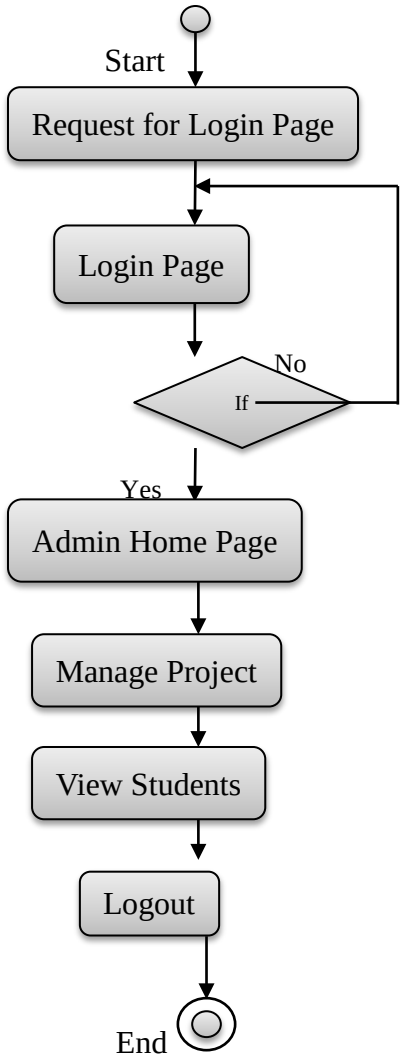
Use case diagrams overview the custom requirements for a system. They are useful for presentations to management and/or project stakeholders, but for actual development you will find that use cases provide significantly more value because they describe "the meat" of the actual requirements.

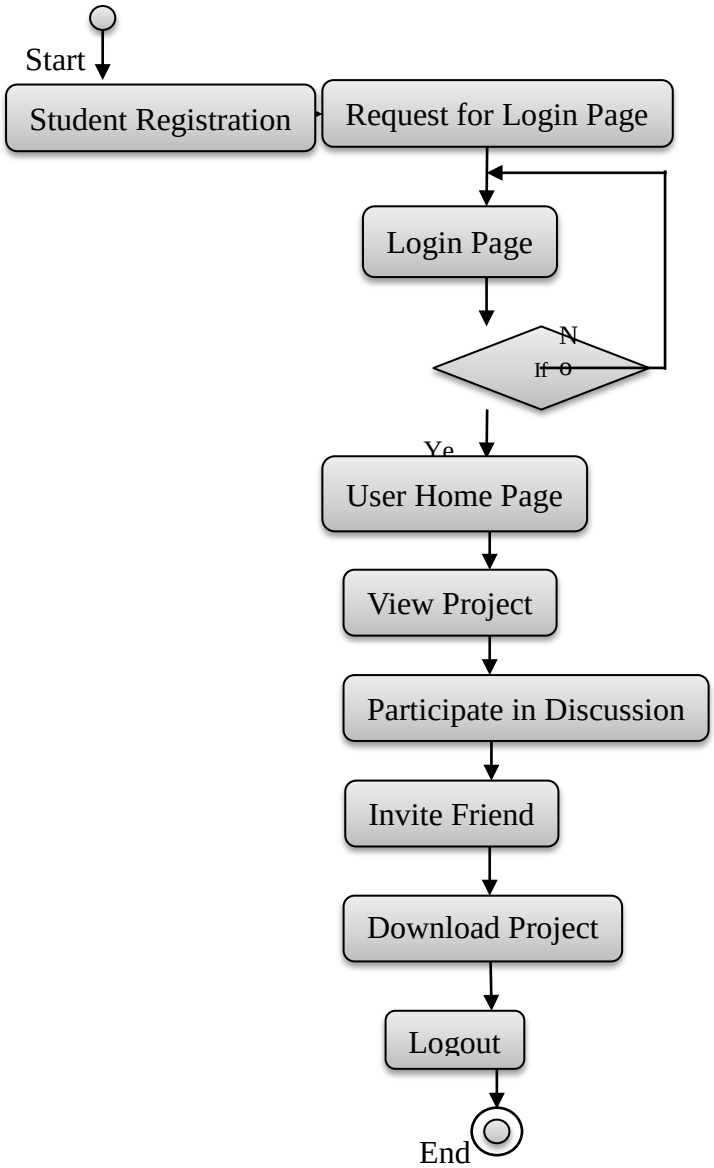


Activity Diagram

Activity diagrams are typically used for business process modeling, for modeling the logic captured by a single use case or usage scenario, or for modeling the detailed logic of a business rule. Activity diagrams can represent inside logic of a complex operation it would be far better to simply rewrite the operation so that it is simple enough that you don't require an activity diagram. In many ways UML activity diagrams

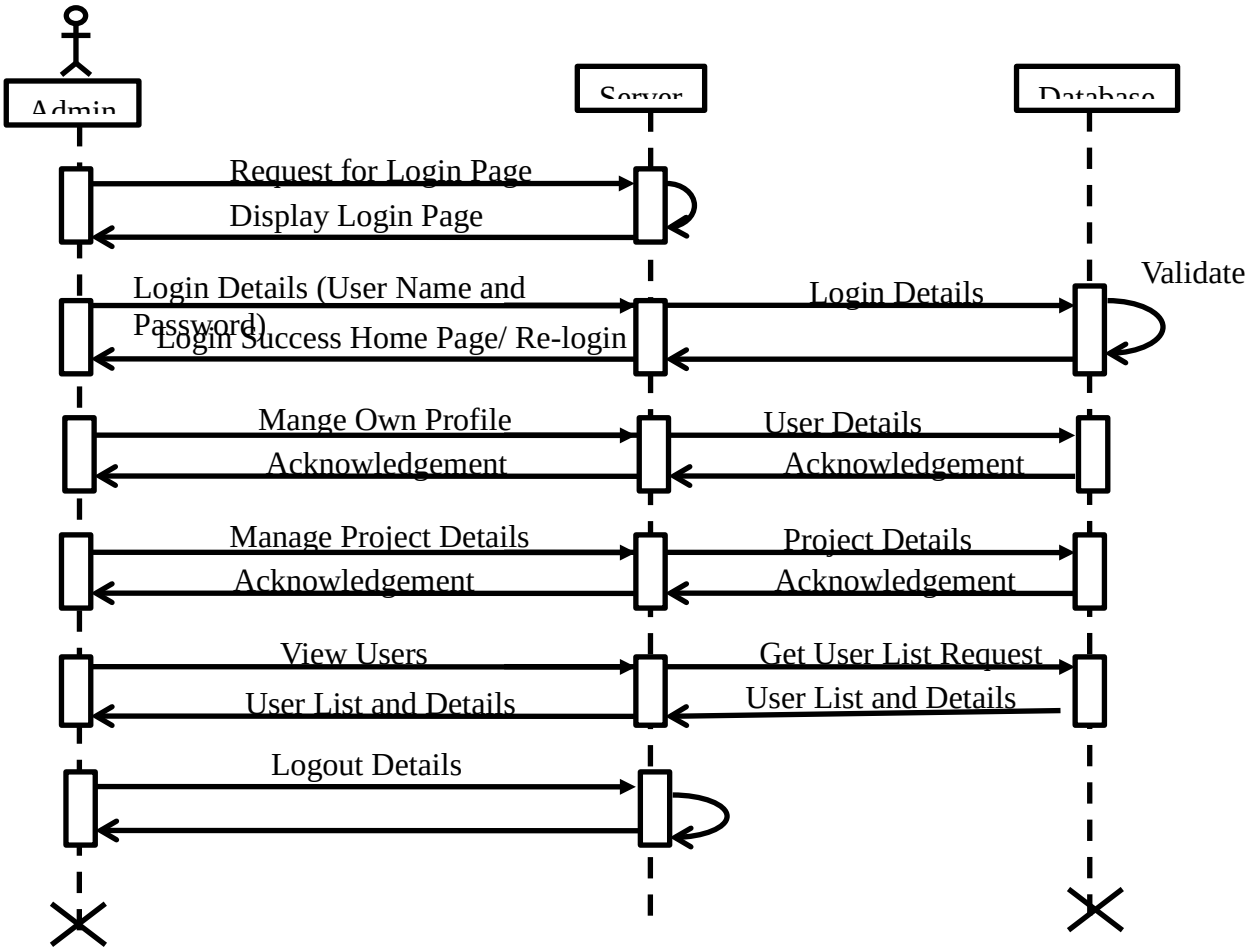
are the object-oriented equivalent of flow charts and data flow diagrams (DFDs) from structured development.

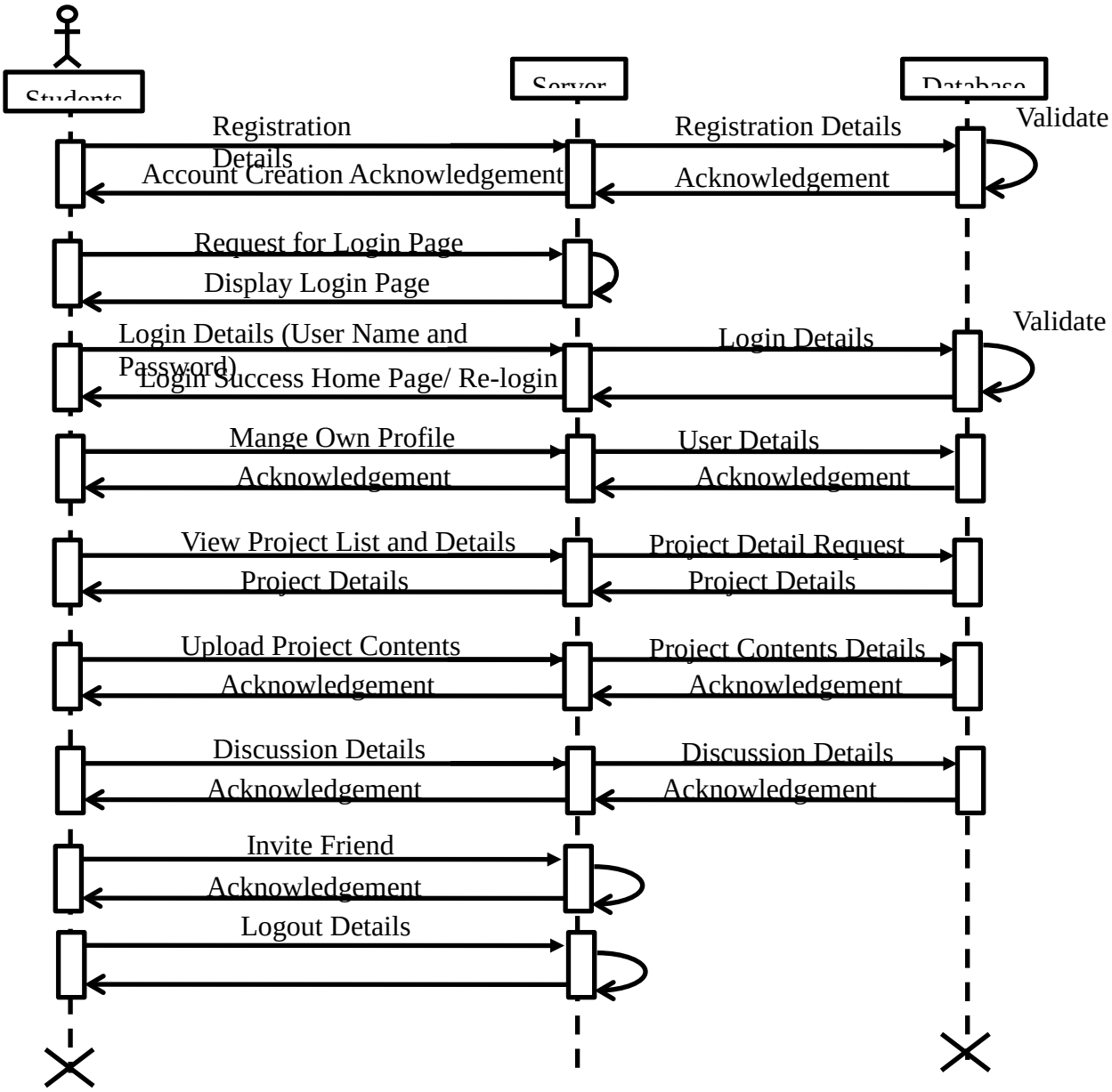

Start
Request for Login Page
Login Page
No
If
Yes
Admin Home Page
Manage Project
View Students
Logout
End


Start
Student Registration
Request for Login Page
Login Page
N
If o
Ye
User Home Page
View Project
Participate in Discussion
Invite Friend
Download Project
Logout
End

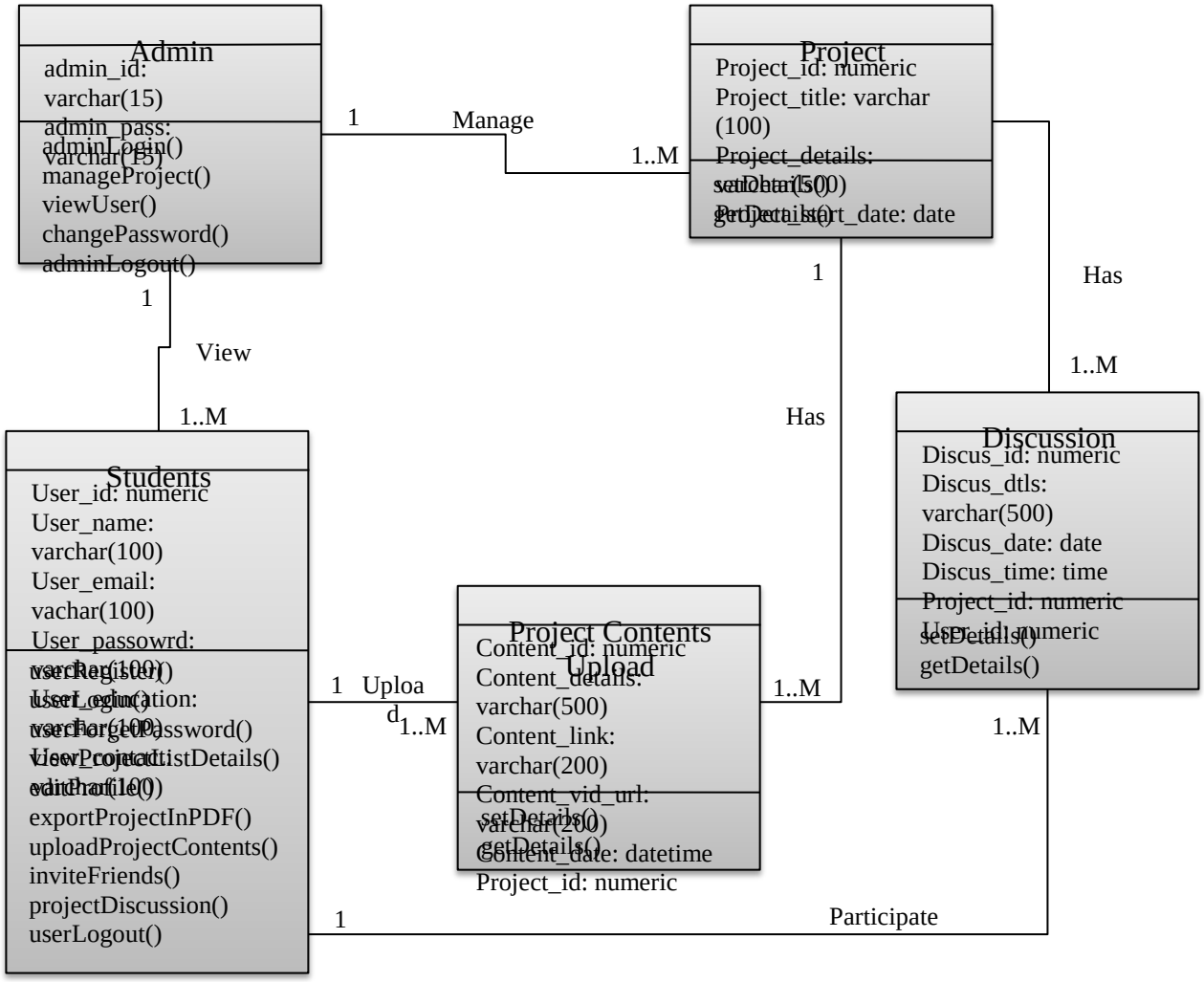
Sequence Diagram

It represents the flow of logic within your system in a visual manner, enabling you both to document and validate your logic, and is commonly used for both analysis and design purposes. Sequence diagrams are the most popular UML artefact for dynamic modelling, which focuses on identifying the behavior within your system.




Students
Server
Database
Registration Details
Registration Details
Validate
Account Creation Acknowledgement
Acknowledgement
Request for Login Page
Display Login Page
Login Details (User Name and Password)
Login Details
Validate
Login Success Home Page/ Re-login
Mange Own Profile
User Details
Acknowledgement
Acknowledgement
View Project List and Details
Project Detail Request
Project Details
Project Details
Upload Project Contents
Project Contents Details
Acknowledgement
Acknowledgement
Discussion Details
Discussion Details
Acknowledgement
Acknowledgement
Invite Friend
Acknowledgement
Logout Details

Class Diagram



5 Internal/external Interface Impacts and Specification

Database Structure

Admin Login Table

Column Name	Data Type	Allow Nulls
add_ID	int	☐
add_Profile	nvarchar(MAX)	☑
add_FName	nvarchar(MAX)	☑
add_LName	nvarchar(MAX)	☑
add_Contact	nvarchar(MAX)	☑
add_Email	nvarchar(MAX)	☑
add_Password	nvarchar(MAX)	☑
add_SecurityQue	nvarchar(MAX)	☑
add_SecurityAns	nvarchar(MAX)	☑
		☐

User Login Table

Column Name	Data Type	Allow Nulls
ID	int	☐
user_Name	nvarchar(MAX)	☑
user_ProfileImage	nvarchar(MAX)	☑
user_Contact	nvarchar(MAX)	☑
user_Address	nvarchar(MAX)	☑
user_Email	nvarchar(MAX)	☑
user_Password	nvarchar(MAX)	☑
user_Type	nvarchar(MAX)	☑
admin_Authority	nvarchar(MAX)	☑
		☐

Blog/Discussion Table

Column Name	Data Type	Allow Nulls
blog_ID	int	☐
user_ID	int	☑
project_ID	int	☑
blog_Text	nvarchar(MAX)	☑
blog_DateTime	nvarchar(MAX)	☑
		☐

Project Contents Table

Column Name	Data Type	Allow Nulls
content_ID	int	☐
user_ID	int	☑
project_ID	int	☑
contect_Text	nvarchar(MAX)	☑
content_UploadFile	nvarchar(MAX)	☑
content_DateTime	nvarchar(MAX)	☑
		☐

Project Details Table

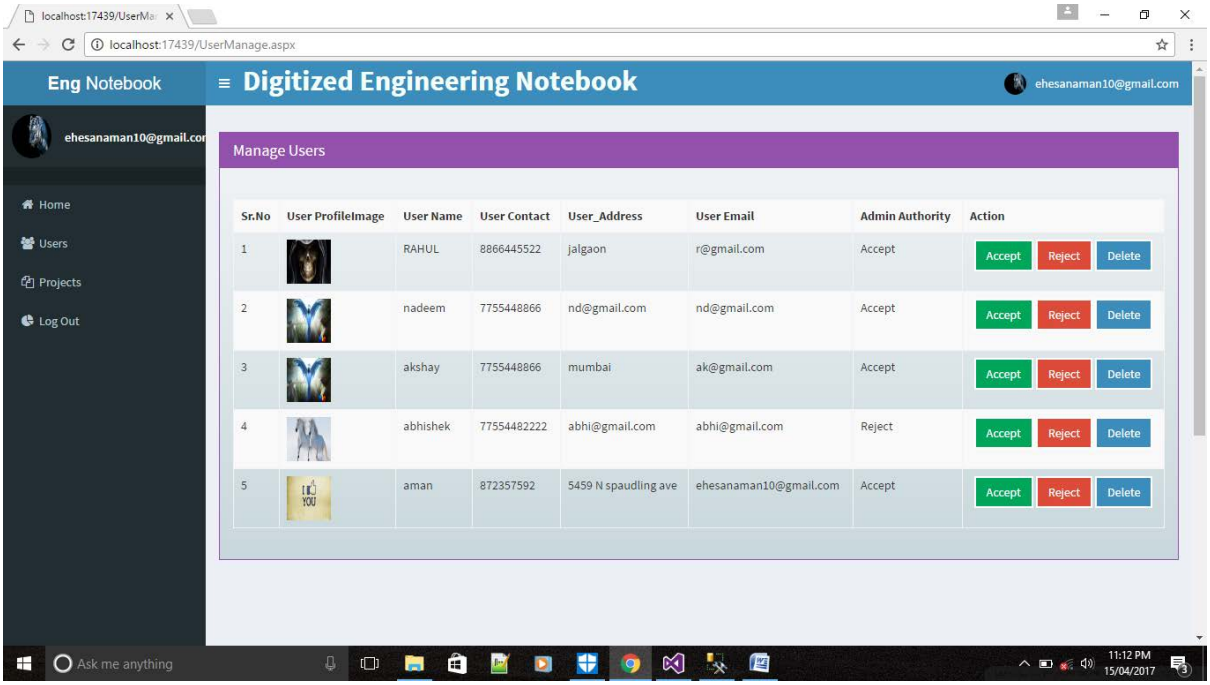
Column Name	Data Type	Allow Nulls
project_ID	int	☐
project_Captain	nvarchar(MAX)	☑
project_Name	nvarchar(MAX)	☑
project_Duration	nvarchar(MAX)	☑
project_Task	nvarchar(MAX)	☑
project_Reflections	nvarchar(MAX)	☑
project_Attechment	nvarchar(MAX)	☑
project_Summary	nvarchar(MAX)	☑
		☐

Project Team Table

Column Name	Data Type	Allow Nulls
team_ID	int	☐
project_ID	int	☑
user_ID	int	☑
		☐

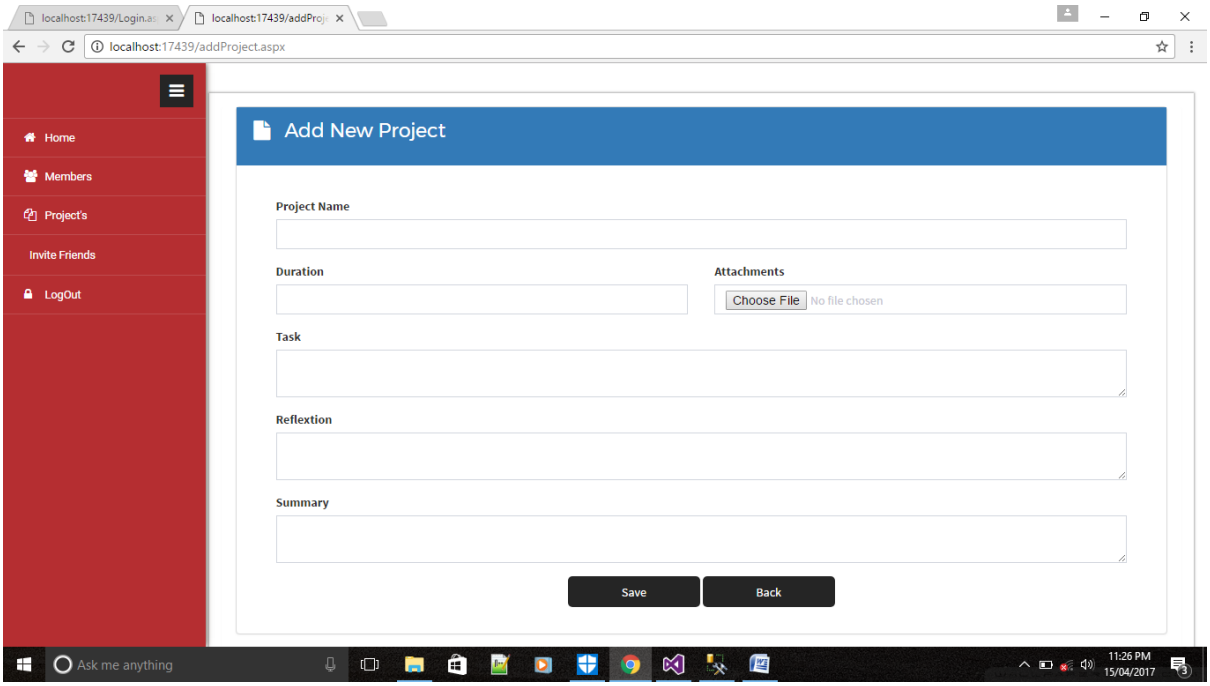
6 Design Units Impacts

Admin main process

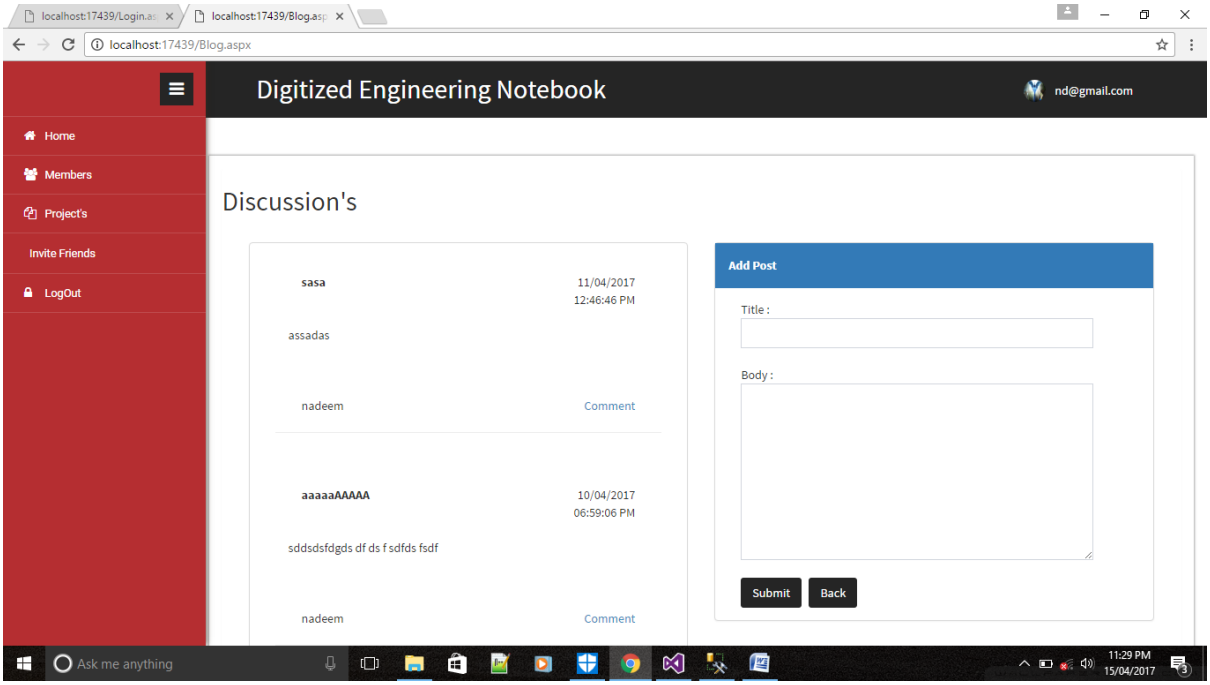


Captain main process

Manage Project

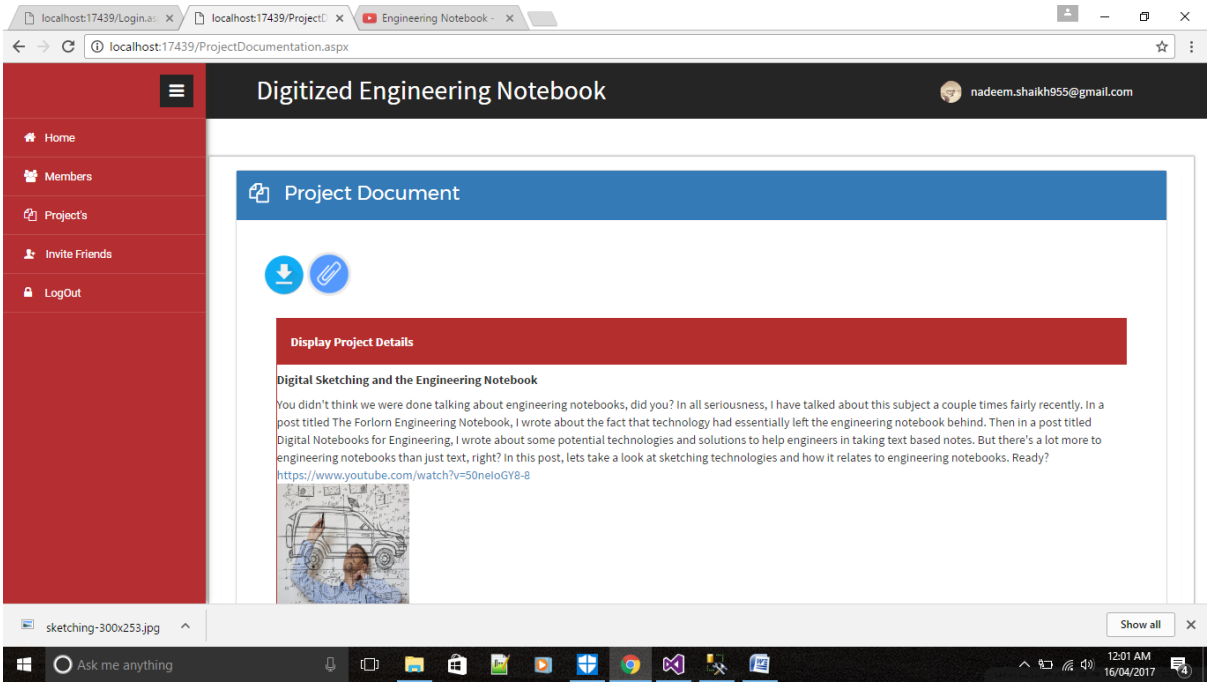


Project Discussion



Project member main process

View and download project



6.1 Functional Area A/Design Unit

6.1.1 Functional Overview

- Admin can manage users and projects
- Captain can create new project and upload, download contents of a project
- Team members can upload, download project contents.
- Project members can take a part in project discussion

7 Open Issues

There is no open issue in a system

8 Acknowledgements

We are thankful to our Professor to believe on us to complete this project. Developing the real life system gives real experience in IT industry. We have learned a lot while developing this application.

9 References

Books:

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2. Learning C#" by O'Reilly Publication
3. Beginning ASP.Net 3.5 by Wrox Publication
4. ASP.NET 3.5 Step by Step – Microsoft Publication
5. Professional ADO.Net by Wrox Publication

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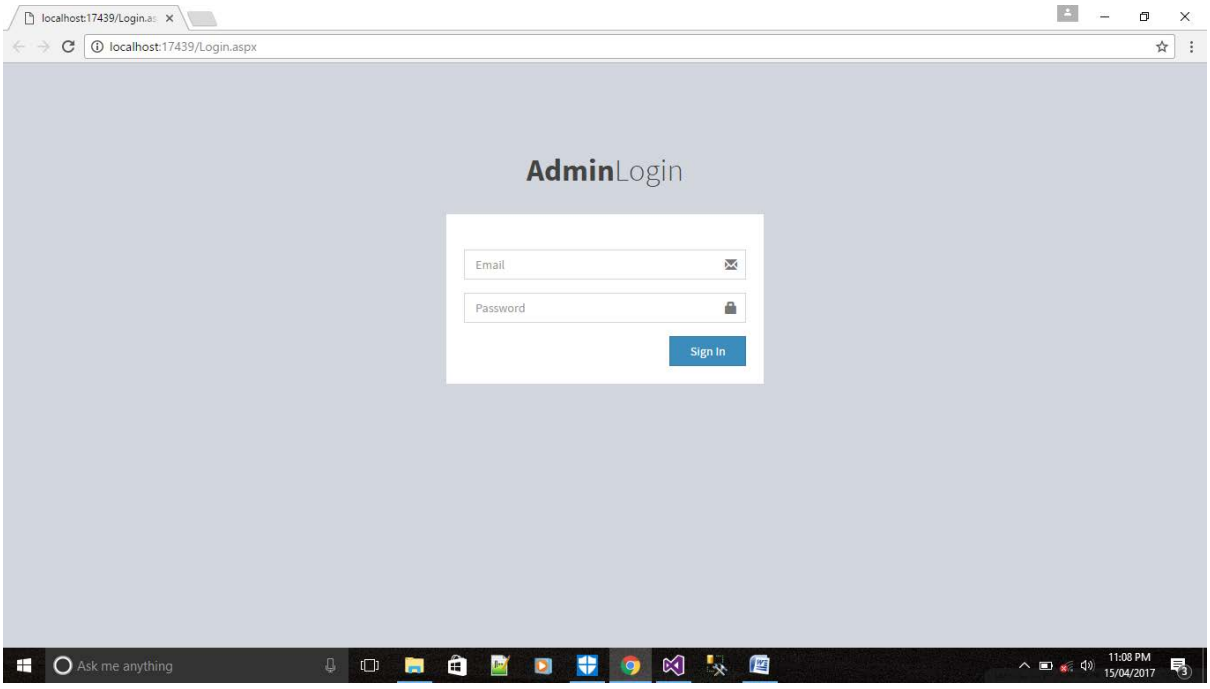
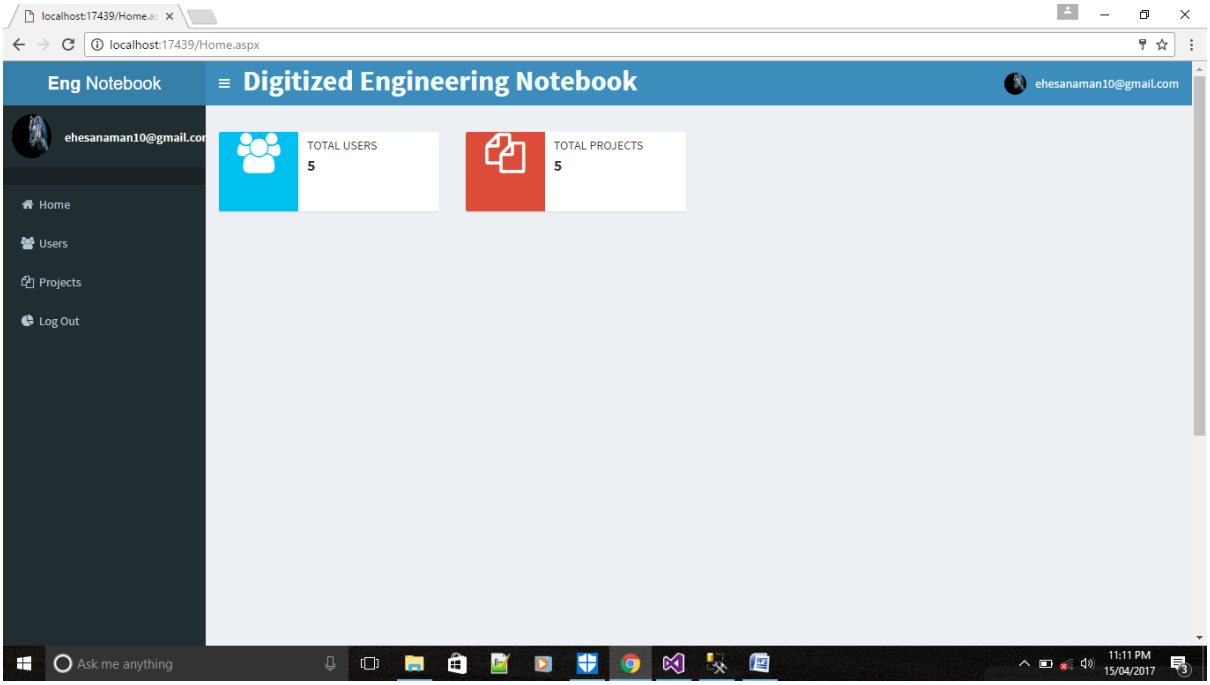
3. http://www.dotnetcurry.com/
4. http://www.codeproject.com/
5. http://www.dotnetfunda.com/

10 Appendices

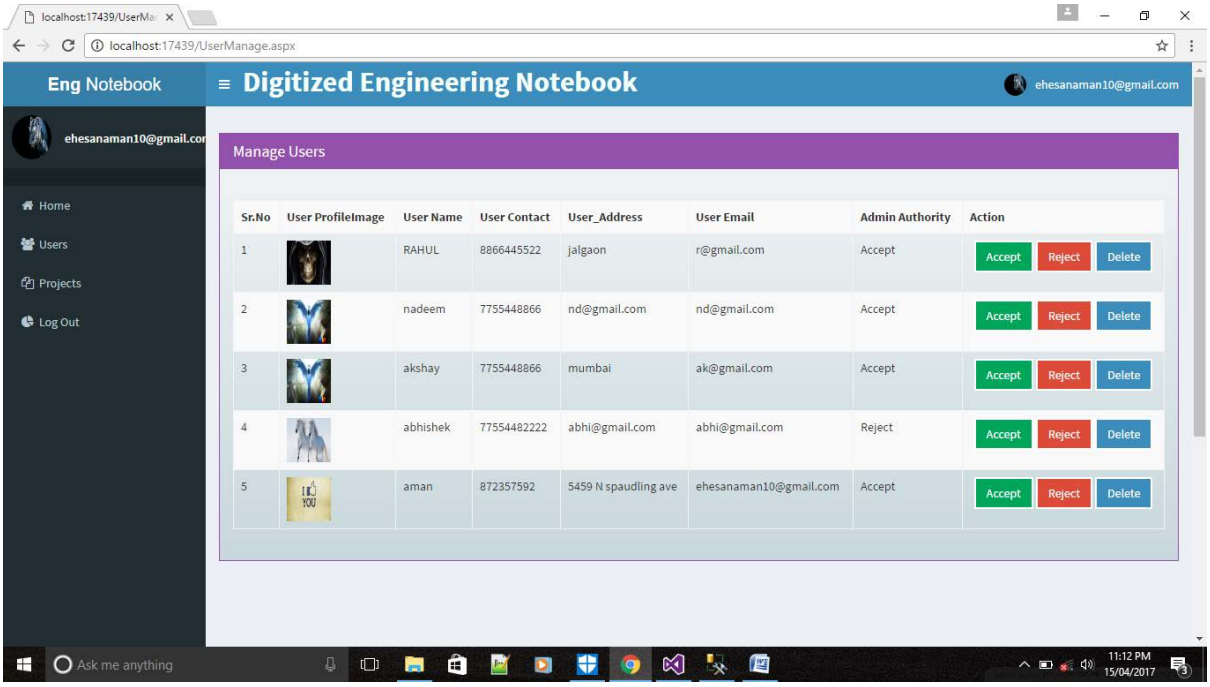
Admin login



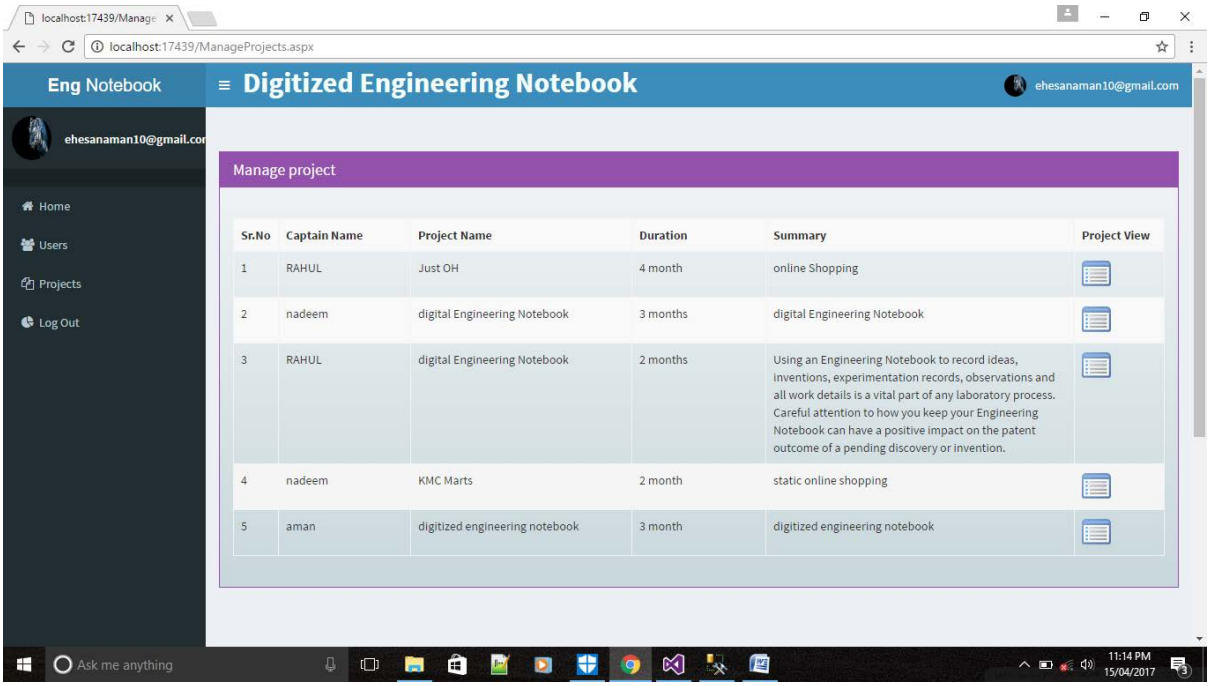
Admin Home


localhost:17439/Home.aspx
localhost:17439/Home.aspx
Eng Notebook
Digitized Engineering Notebook
ehesanaman10@gmail.com
ehesanaman10@gmail.com
Home
Users
Projects
Log Out
TOTAL USERS
5
TOTAL PROJECTS
5
Ask me anything
11:11 PM
15/04/2017

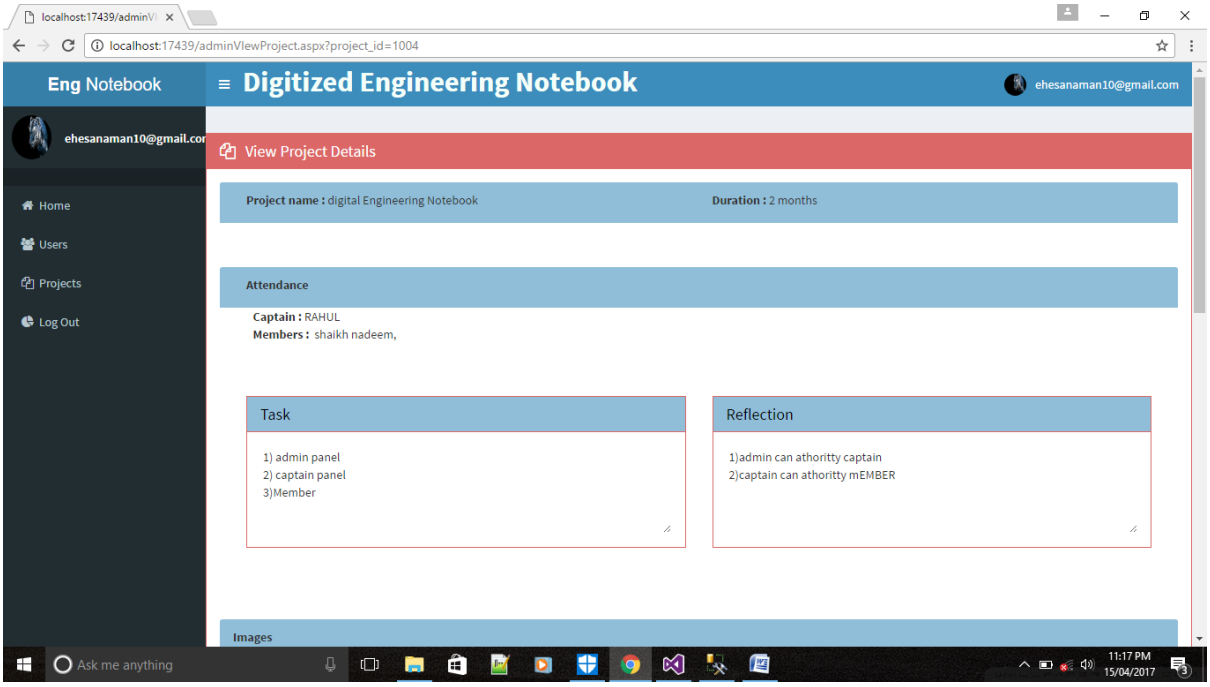
Manage Users

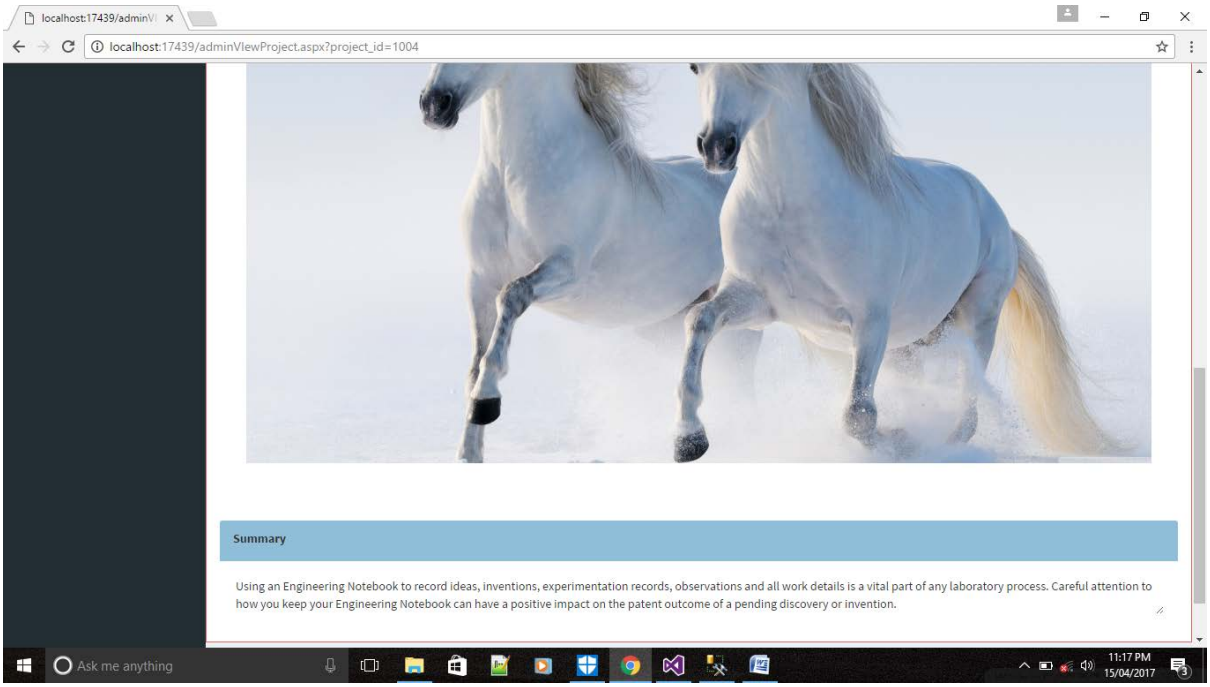


Manage Project

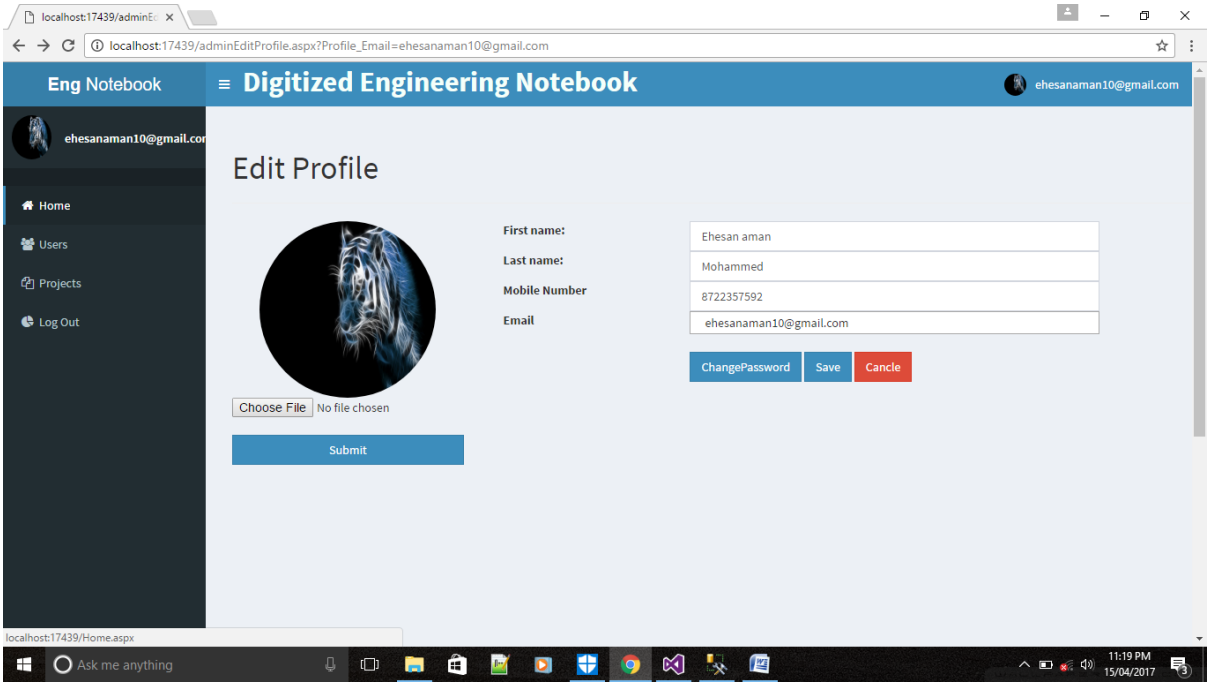


View Project Details

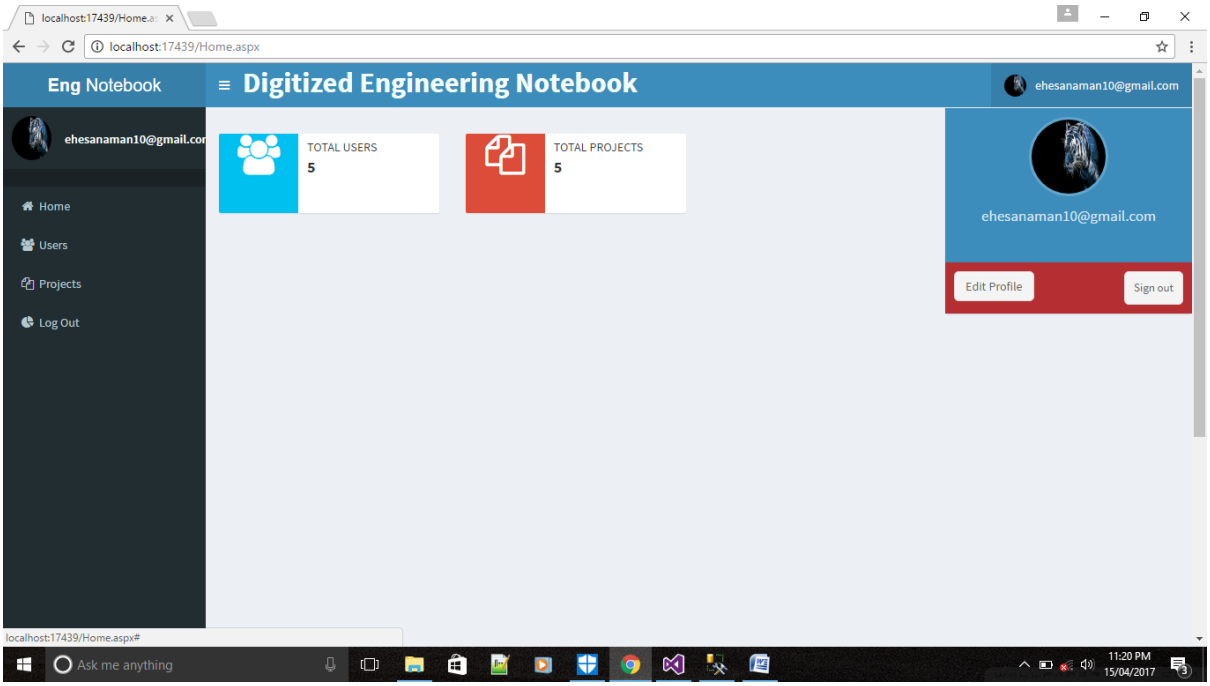




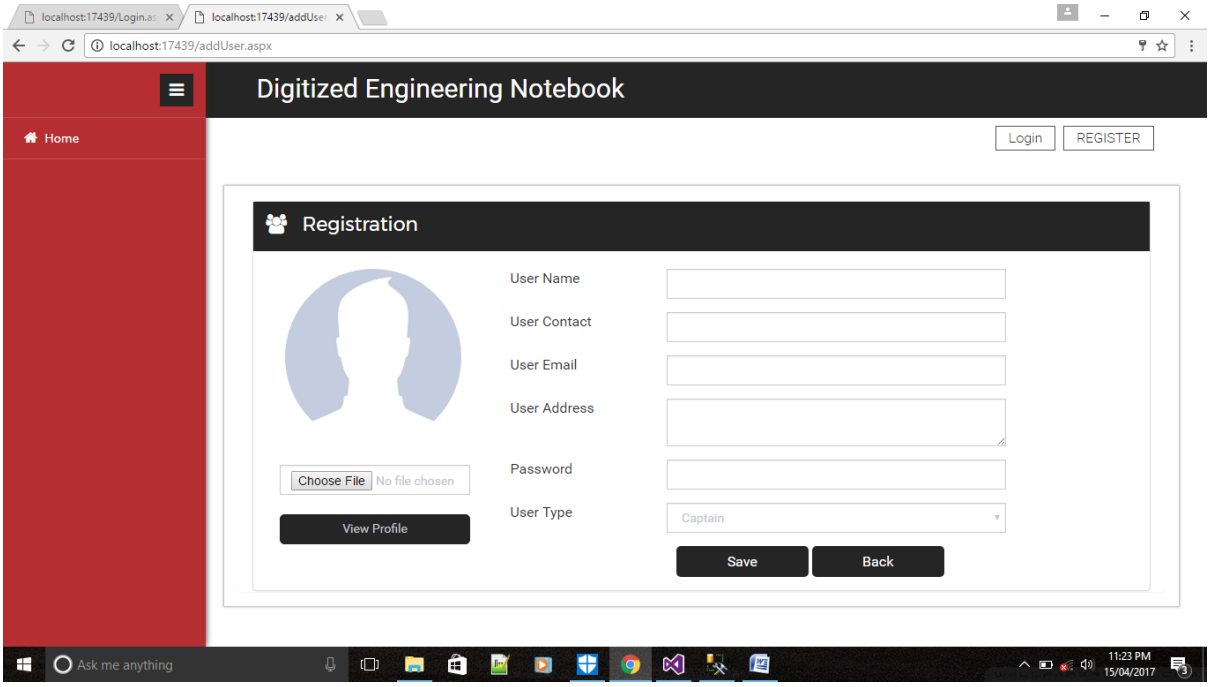
Admin Profile Edit



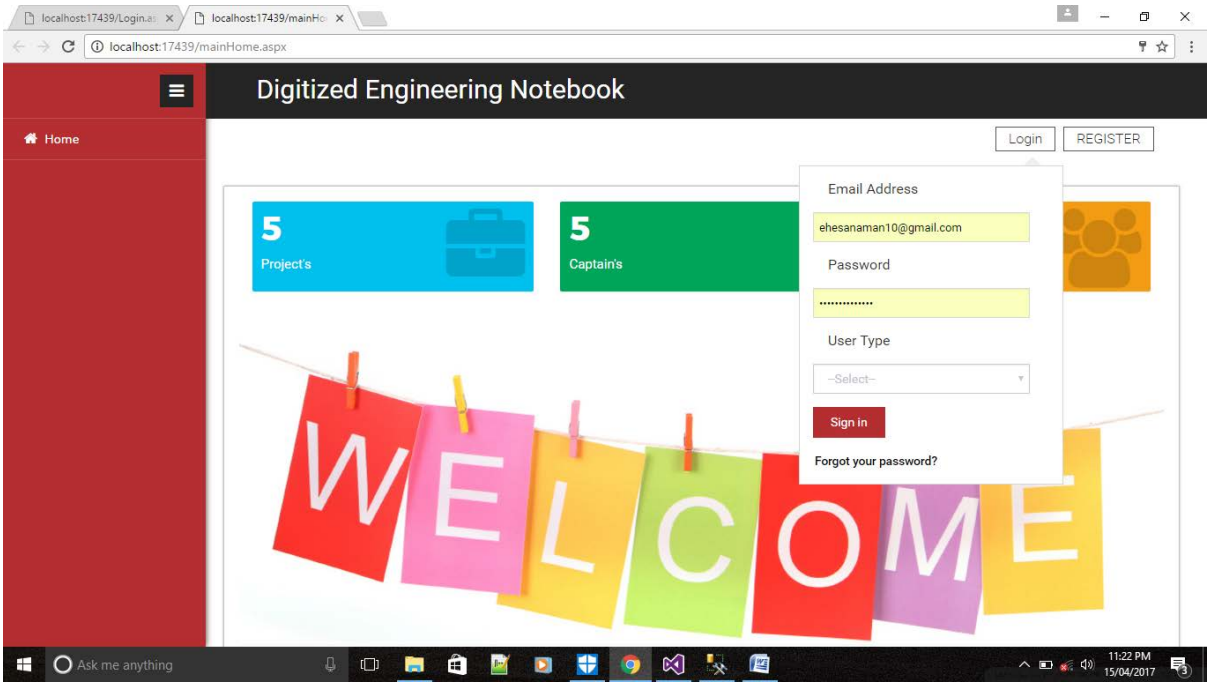
Logout



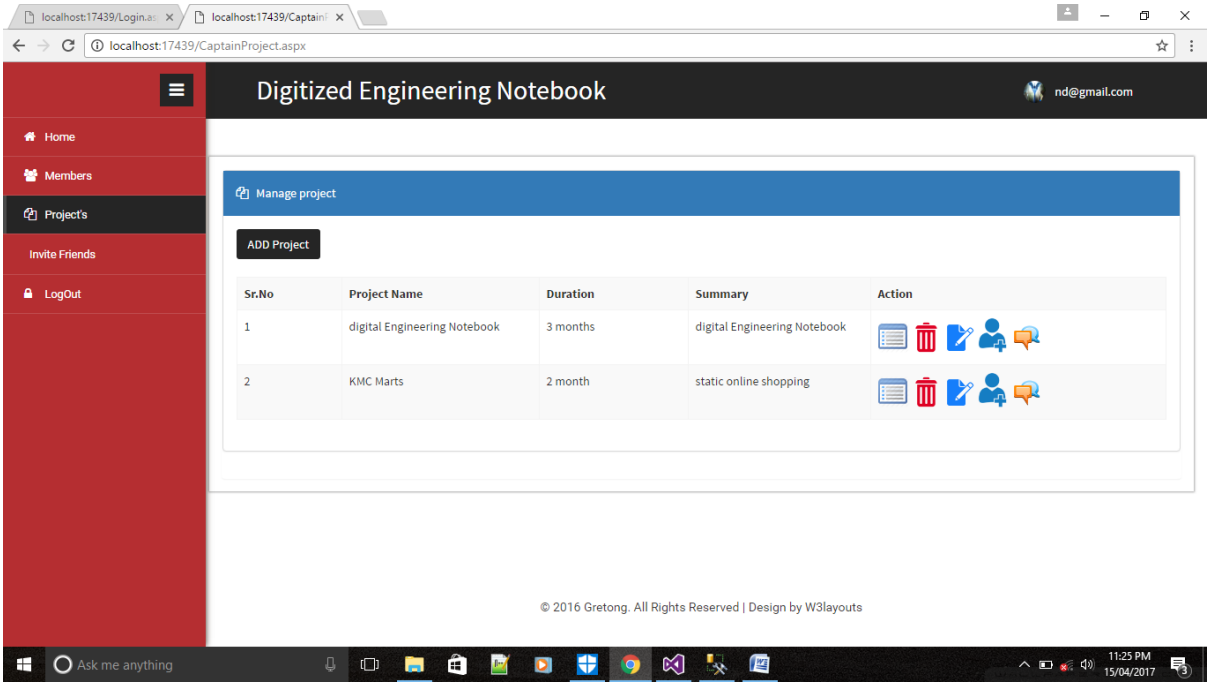
User Registration



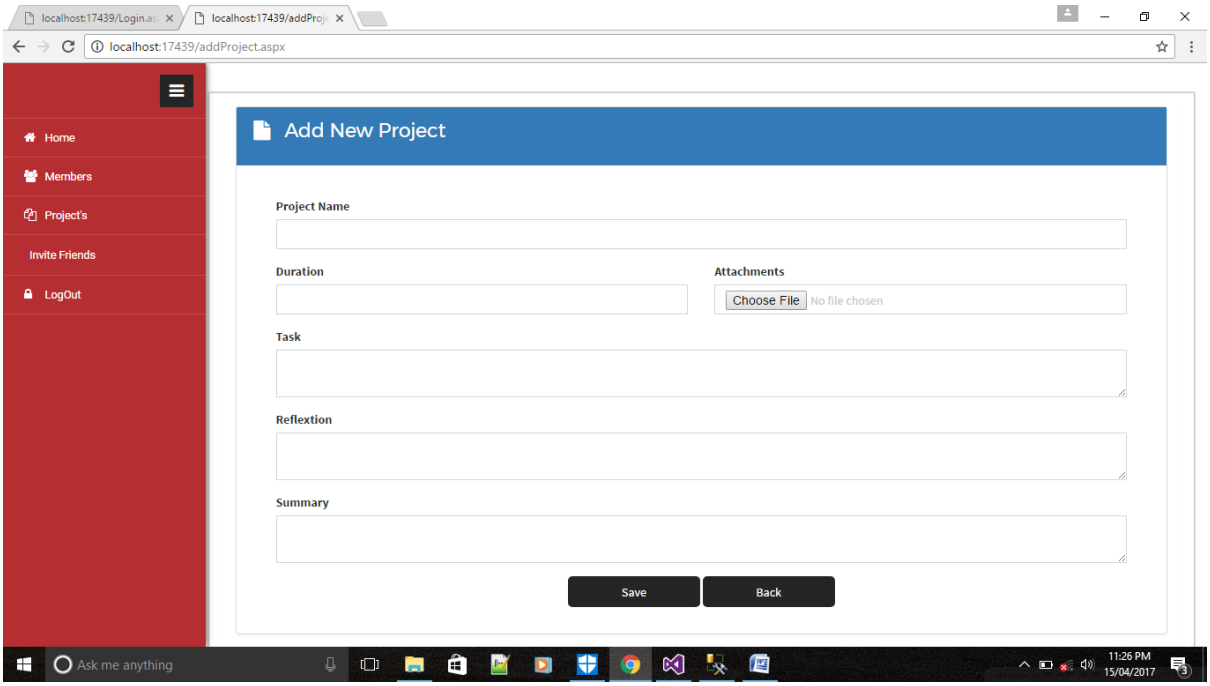
User Login



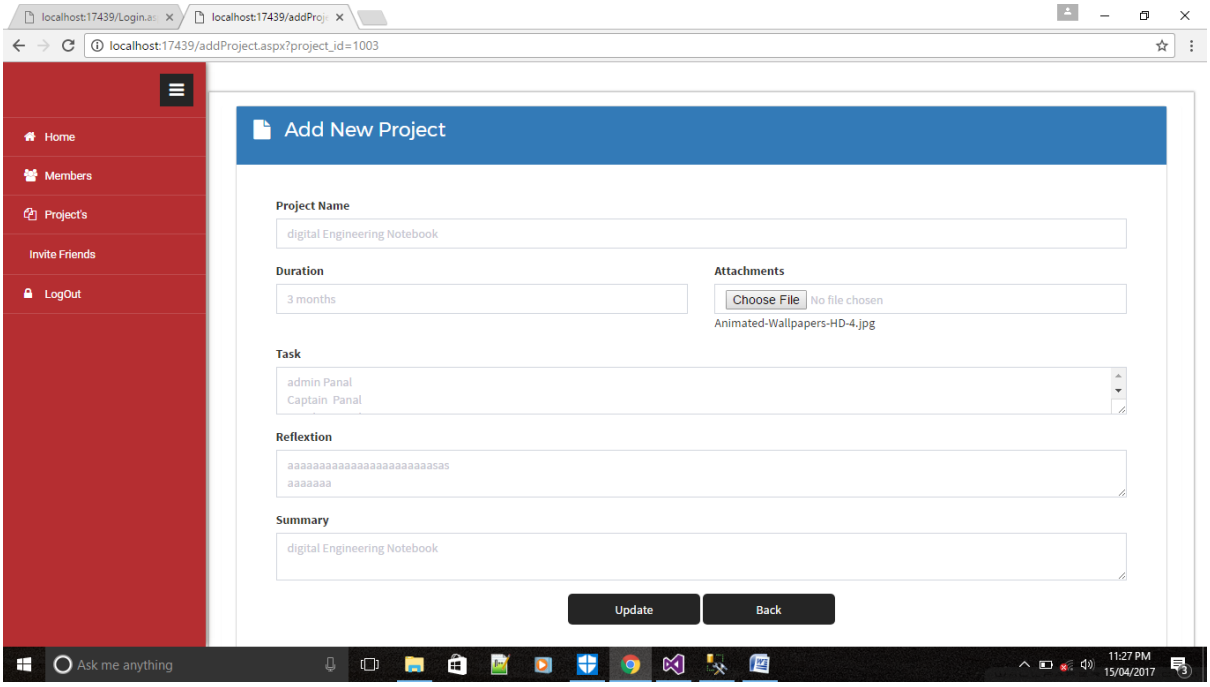
Add Project



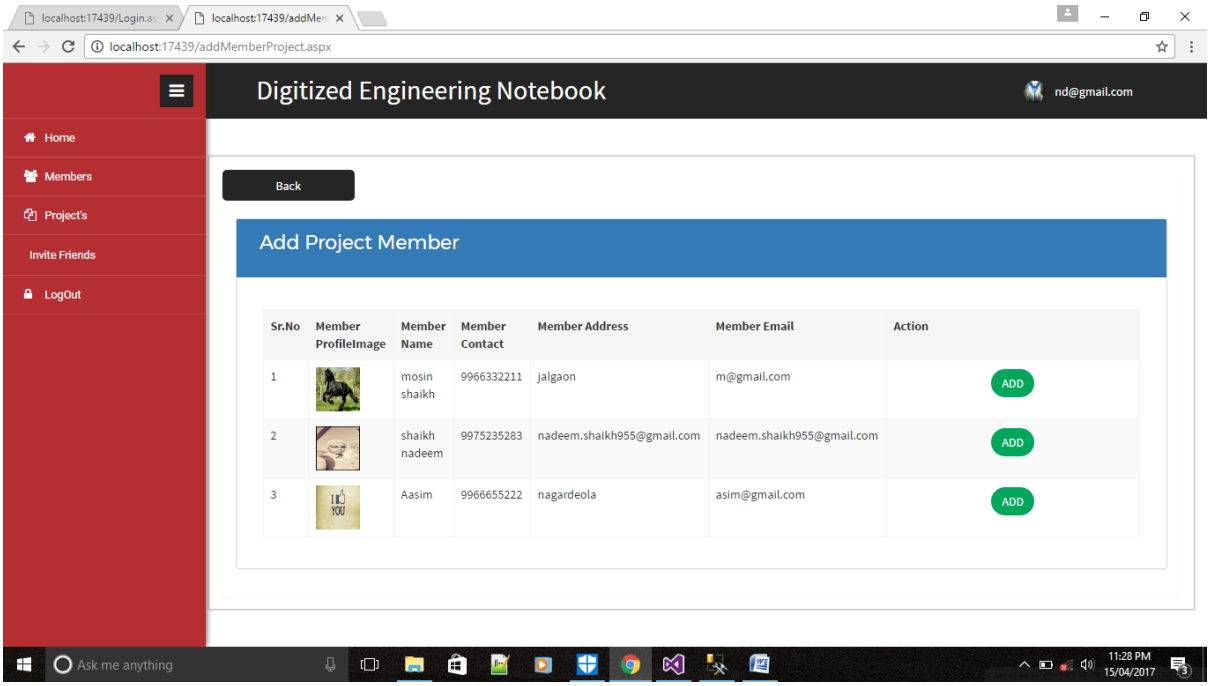
Add New Project



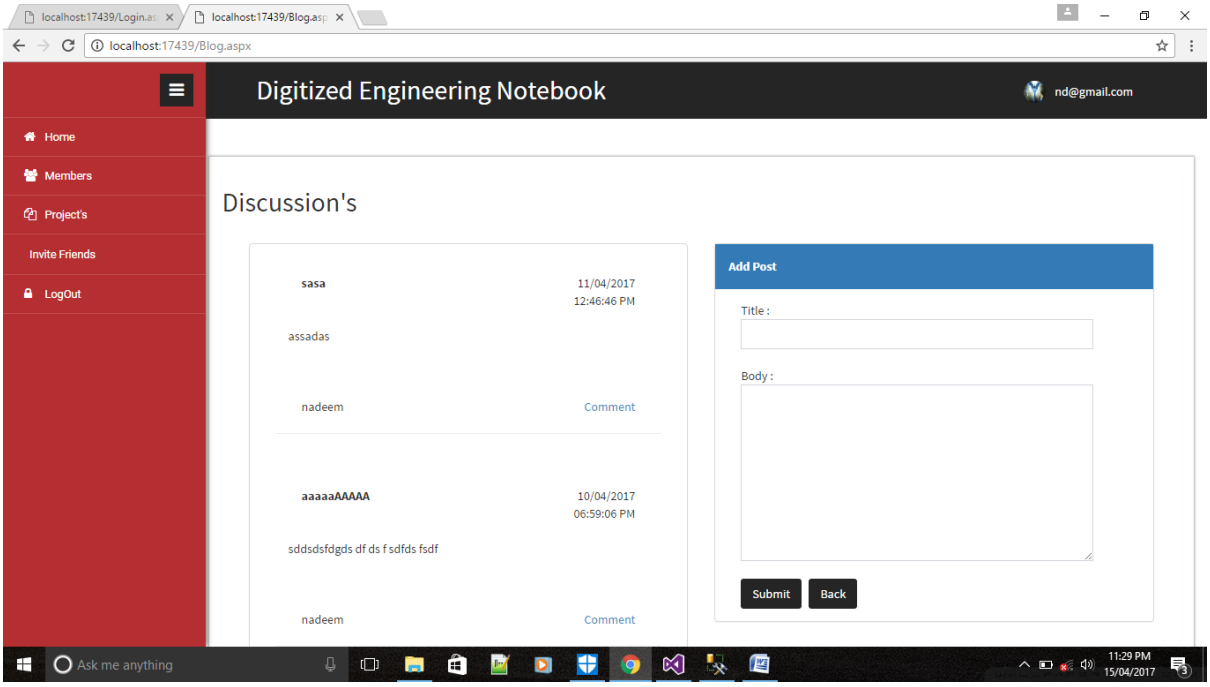
Edit Project Details



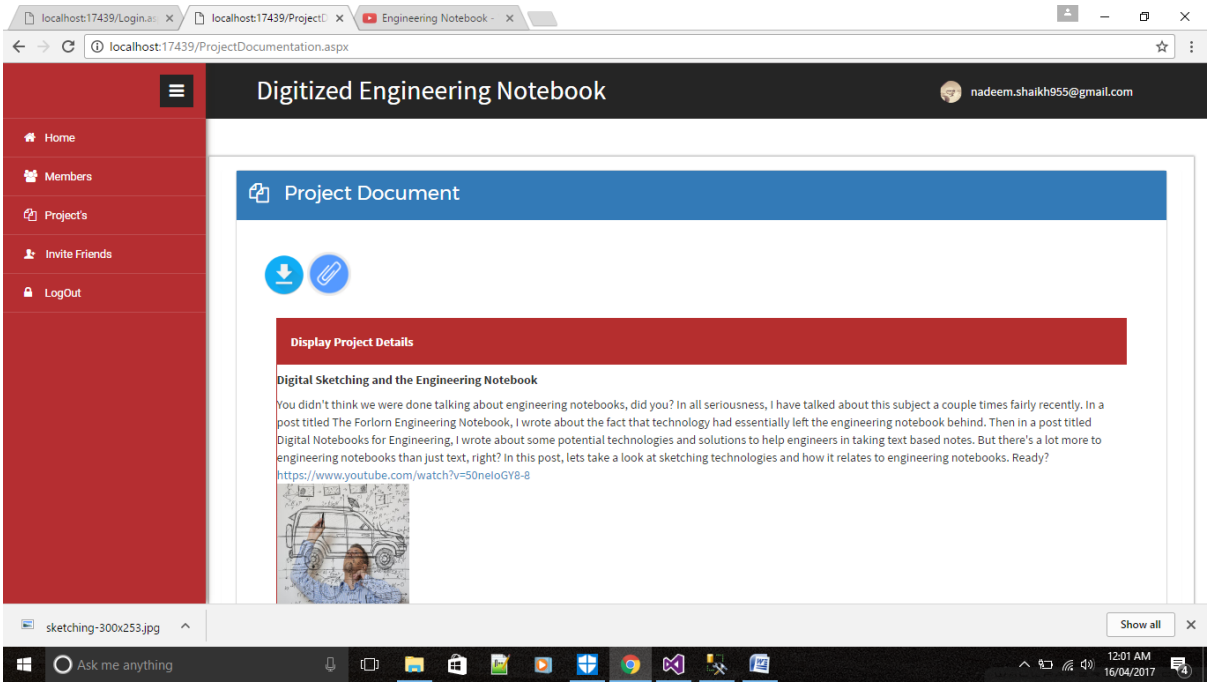
Add Project Members



Project Discussion



Project Details and Download



Invite friends in project