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1. **Abstract**

* We are primarily a web-based tool and you can use it to draw UML diagrams, Documents and free hand diagrams online without worrying about installs, downloads or operating systems.
* Drawing UML diagrams with Easy Draw is basically a cakewalk because of its awesome UML features.  You can modify and format various UML objects exactly the way you want them. You can easily download these professionally designed templates, Projects and tutorials. We have templates, Projects and tutorials for many**UML diagram types** including class diagrams, sequence diagrams, use case diagrams and many more.
* We have separate libraries for many UML diagram types so you can draw your preferred UML diagram without cluttering the drawing interface. User can also send messages and share attachments to another user and can easily edit their profile.
* Admin can view and delete user lists, feedback and advertisements and can also post advertisements.

1. **Acknowledgement**

* This Project is based on the Subject **Online UML Diagram Tool** in Mini Project (sem-v). It was a great experience for us to work on the project. It helped us understand the practical applications of the theory we learned. This project has taught us various things in various ways and has made us attain more knowledge and made us a better person than we were before.
* The success and final outcome of this project required a lot of guidance from many people and we are extremely fortunate to have got this all along the completion of our project work. Whatever we have done is only due to best guidance and we would not forget to thank them.
* We owe our profound gratitude to our Brilliant and excellent project guides ***Ms. Riya Gandhi,*** who took keen interest in our project work and guided us all along, till the completion of our project work by providing all the necessary help and support for developing a good project.
* We are thankful and fortunate enough to get constant encouragement, support and guidance from all ***Teaching staffs*** of Department of Computer Applications which helped us in successfully completing our project work.

1. **Business Problem**

* We wanted to create a website to avoid multiple things like downloading the software, installing it and then figuring out the how to use the complex software.
* No proper website is there to perform such actions for free, every other website charges some premium which you have to pay to get your job done. To overcome this and to make a student’s life more easily and quicker we have developed this website.

1. **Project Charter**
   1. **Project Definition**

* This is web-based tool and you can use it to draw UML diagrams, Documents and free hand diagrams online.
* Drawing UML diagrams with Easy Draw is basically a cakewalk because of its awesome UML features.  You can modify and format various UML objects exactly the way you want them. You can easily download these professionally designed templates, Projects and tutorials. We have templates, Projects and tutorials for many**UML diagram types** including class diagrams, sequence diagrams, use case diagrams and many more.
* We have separate libraries for many UML diagram types so you can draw your preferred UML diagram without cluttering the drawing interface

**4.2 Purpose**

The purpose of this project is to build a website which would help the students and the beginners to draw basic UML Diagrams without spending much time on complex software. Build a system which can be accessible anywhere with the help of a computer with an internet connection. We have also taken care of admin side as he/she can easily manage, update and maintain the website

**4.3 Scope of the Project**

* The main objective of the project is that the students can make UML Diagrams effortlessly and quickly.
* Each type of diagram has different notation and are categorized accordingly in the website thus avoiding mistakes done by students.
* All type of study material is available on the website to be good at UML Diagrams
* User can download the diagram in jpeg format and then share it to anyone he wants to.
* Space for roughly preparing the diagram is given to save paper and share personal ideas about the diagrams.
* The user can have conversation with another user and an also share attachments.
* Users can give their valuable feedback to the administrators for making the websites more use friendly and updated.
* Users can modify the data of their profile if needed.
* Admin plays a very vital part in this website as he receives all the data regarding system updates like user lists, feedback from users, changes in advertisement etc.
* Every project needs a good documentation; therefore, we have developed an industry first feature which works similarly like Microsoft word for ultimate documentation.

**5. Strategies**

* Easy to use website.
* Accessible from anywhere
* Everything related to the subject is available here.
* Targeted towards a specific audience.

**6. Work division**

**6.1 Work division (w.r.t time)**

|  |  |
| --- | --- |
| Work Done | Duration |
| Front end of the website and Testing | 13 July- 31 July |
| UML Diagrams | 1 Aug- 20 Aug |
| Backend and Testing | 21 Aug – 30 Nov |
| UML Tool , Text Editor and Free hand Diagram Tool | 15 Nov- 10 Dec |
| Final Testing | 16 Dec- 20 Dec |

**6.2 Work division (w.r.t team members)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Group**  **Member:** | **Nikhil Dave** | **Himadri**  **Pandya** | **Maulik Pandya** | **Preeti Kumari** |
| **Innovations/ Ideas** |  |  |  |  |
| **Front end** |  |  |  |  |
| **UML Tool** |  |  |  |  |
| **Back end** |  |  |  |  |
| **Documentation** |  |  |  |  |

**7. Hardware and Software Requirements**

**Hardware:**

* RAM-Minimum 512 MB (Recommended 1 GB).
* Hard Disk – Standard Configuration.
* Internet speed – Minimum 1mbps.

**Software:**

* Any OS with a JavaScript enabled web Browser and JRE 1.8 installed.

# 8. Tools and Technologies Used

* + - PHP Framework- CodeIgnitor 2.2.6
* Hosting- 000webhost.com
* Front end- HTML5, CSS3, Bootstrap3, JavaScript, jQuery
* Database- MySQL
* Text editor- Sublime
* Xampp server
* Browser with JavaScript enabled
* Adobe Photoshop

**9. Requirement Analysis**

**9.1 Functional Requirements**

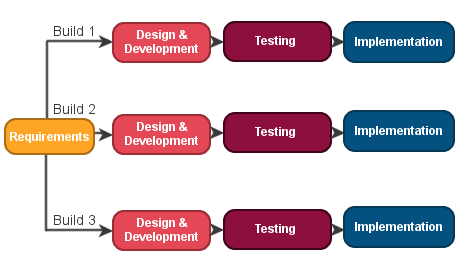
* Proper Authentication
* Registration Form include Full name, email, password, phone number, city and state.
* Administrative Functions include showing registered user’s name, feedbacks and advertisements and admin can also delete them.
* End User Functions include download and share tutorials, Projects and Templates , edit their profile, create UML diagrams, Text editor, free hand Diagrams and also download and share them, message and attachment sending , can give feedback to admin.
* Database has 7 tables: - admin, advertisement, city, state, feedback, message and registration.

**9.2 Nonfunctional requirements**

* Security functions include accepting only verified email ID and password of at least 8 digit characters, session should be there, prevention from SQL injections.
* Performance requirements include the load time for user interface screens shall take no longer than 15 seconds, the log in information shall be verified within 5-10 seconds, and queries shall return results within five seconds.
* Standard Compliance – There should be consistency in variable names within system. The graphical user interface should have consistent look and feel.
* Reliability- Specify the factors required to establish the required reliability of the software system at the time of delivery.
* Availability- The system should be available 24x7.
* Maintainability- The online UML Diagram tool is being developed in PHP. PHP is a widely-used open source general-purpose scripting language that is especially suited for web development and can be embedded into HTML and should be easy to maintain.
* Portability- The Online UML Diagram Tool website should run in any Microsoft Windows environment.

**10. Methodology Used**

* Software Development Life Cycle (SDLC) is extremely vast and full of various development and testing activities, methodologies, techniques, tools, and more. We have taken **Iterative Model** is too a part of Software Development Life Cycle.
* It is a particular implementation of a software development life cycle that focuses on an initial, simplified implementation, which then progressively gains more complexity and a broader feature set until the final system is complete. In short, iterative development is a way of breaking down the software development of a large application into smaller pieces.



Why to use Iterative model?

* Some working functionality can be developed and early in the software development life cycle (SDLC).
* It is easily adaptable to the ever changing needs of the project as well as the client.
* It is best suited for agile organizations.
* It is more cost effective to change the scope or requirements in Iterative model.
* Parallel development can be planned.
* Testing and debugging during smaller iteration is easy.
* Risks are identified and resolved during iteration; and each iteration is an easily managed.
* In iterative model less, time is spent on documenting and more time is given for designing.
* One can get reliable user feedback, when presenting sketches and blueprints of the product to users for their feedback.

**11. System Analysis**

**11.1 Stakeholders**

* **Internal Stakeholders**
* Admin
* Developers
* **Connected Stakeholders**
* Users
* Hosting website

11.2 Actors

* Admin
* User
* System
* Printer

11.3 Modules

* Login/Registration
* Admin
* User
* UML Diagram
* Free hand Diagram
* Text Editor
* Tutorials
* Templates
* Projects
* Feedback
* Advertisement
* Profile Manage
* Message

**12. System Flow**

**12.1 Login/Registration**

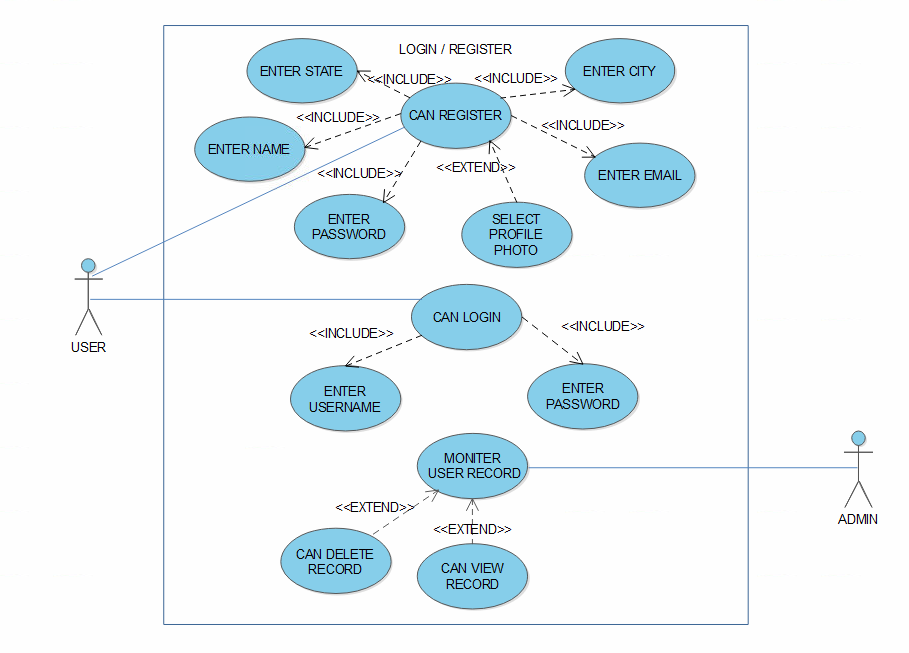
Description

* Unregistered user will fill registration form.
* Registered users can login.
* After login, user can view their profile.

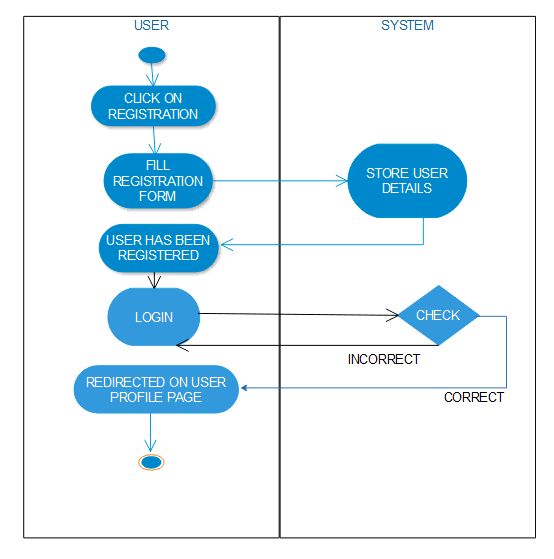
Actors

* User
* System
* Admin

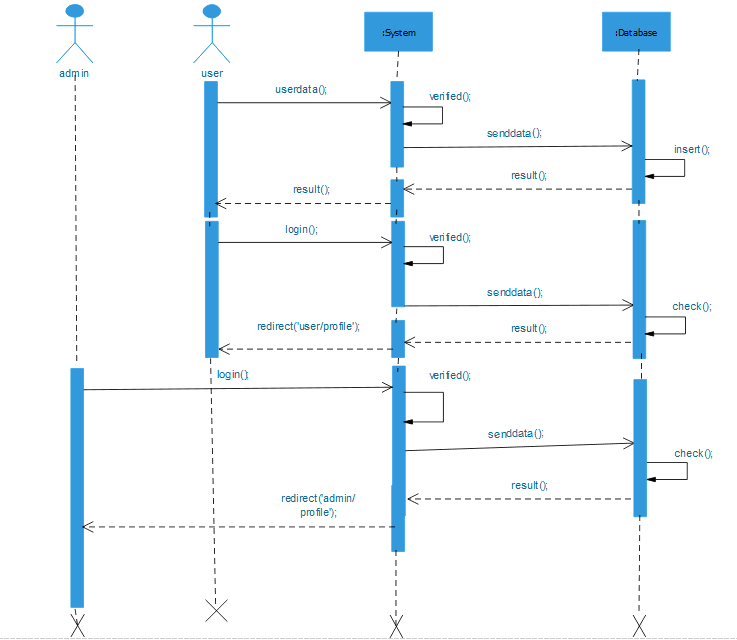
**12.1.1 Use Case Diagram of Login/Registration**

****

**12.1.2 Activity Diagram of Login/Registration**

****

**12.1.3 Sequence Diagram of Login/Registration**

****

**12.2 Admin**

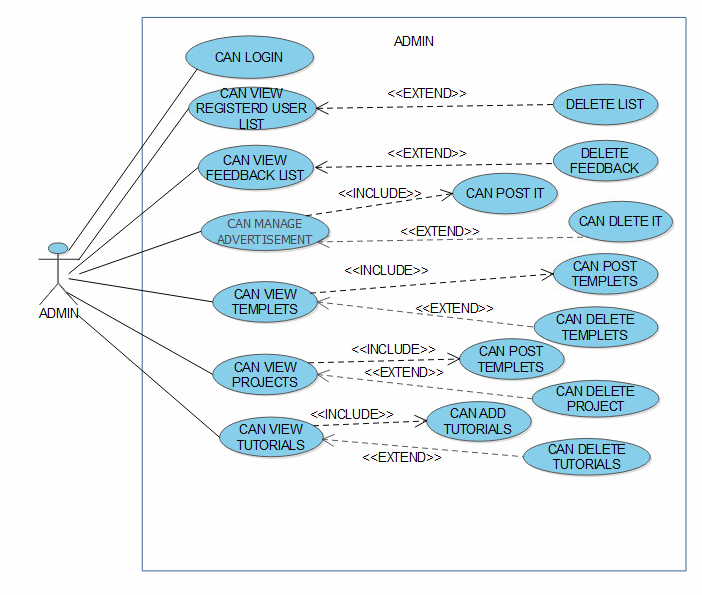
Description

* Admin can login.
* After login, admin can view dashboard.
* Admin can view and remove the records of feedbacks and registrations.
* Admin can also post and remove the advertisements.

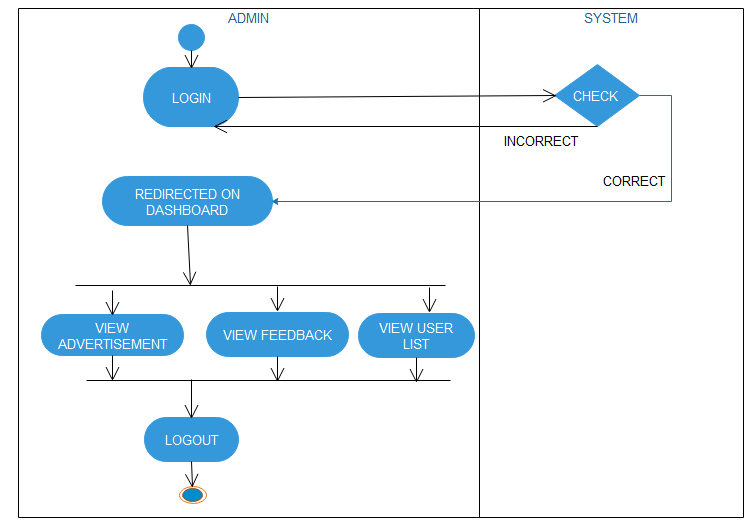
Actors

* Admin
* System

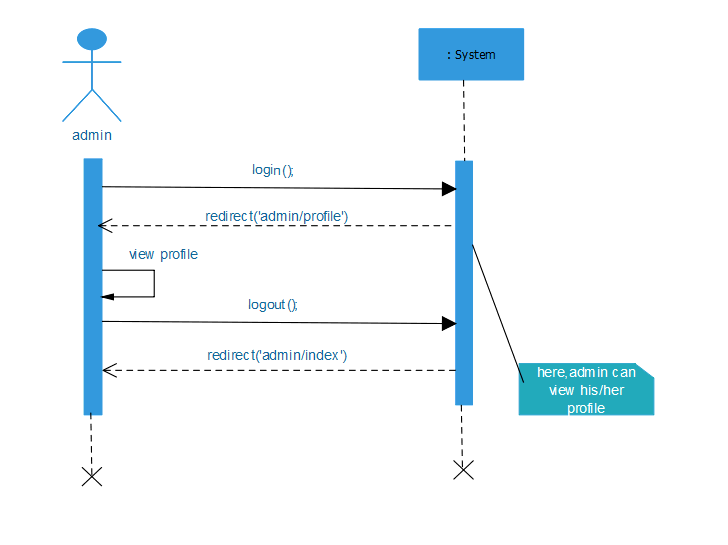
**12.2.1 Use Case Diagram of Admin**

****

**12.2.2 Activity Diagram of Admin**

****

**12.2.3 Sequence Diagram of Admin**



**12.3 User**

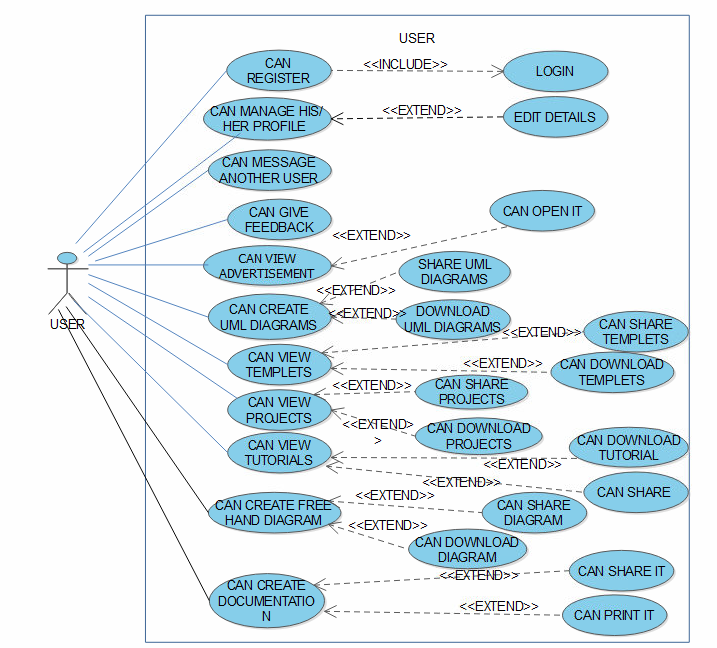
Description

* User can register/login.
* Can view their profile.
* Can view Projects, Templates and Tutorials and can also download them.
* Can make diagrams, create documents, download and share them.
* Can change their profile details and also give feedbacks to admin.

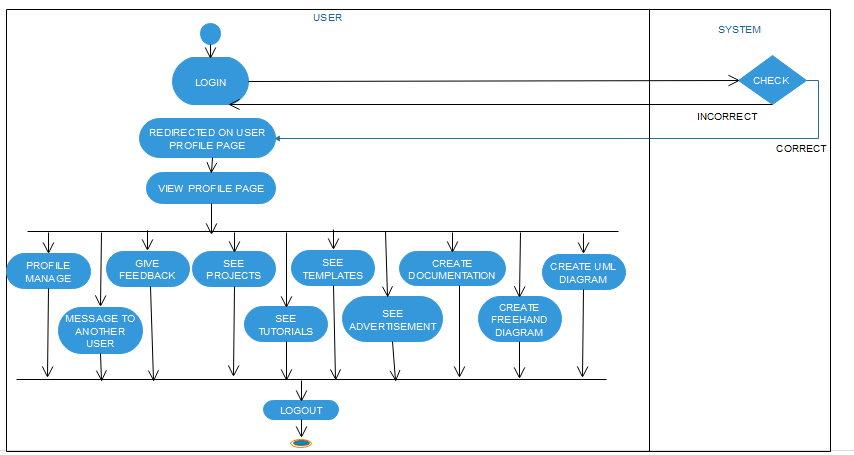
Actors

* User
* System

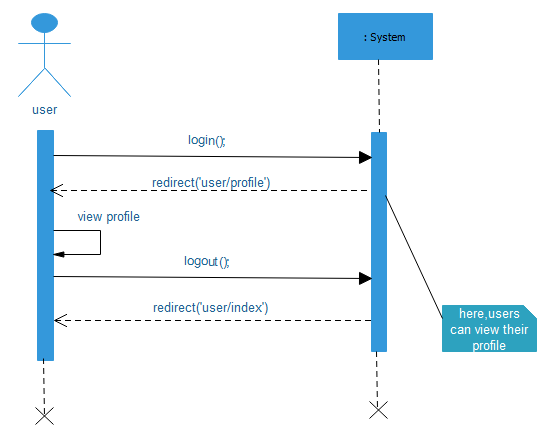
**12.3.1 Use Case Diagram of User**

****

**12.3.2 Activity Diagram of User**

****

**12.3.3 Sequence Diagram of User**

****

**12.4 UML Diagrams**

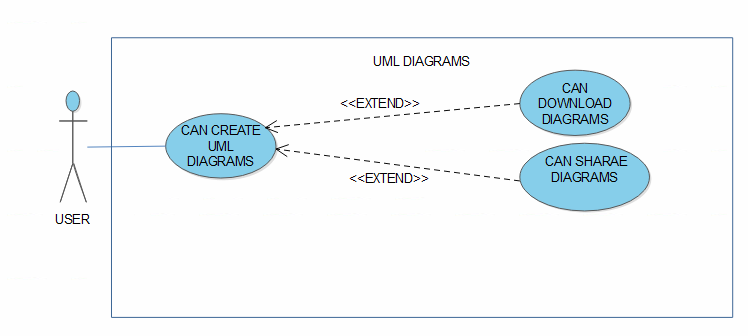
Description

* User can create different types of UML diagrams just by dragging and dropping the shapes like class, sequence, use case and many more.
* User can share and download diagrams.
* User can format the diagrams in a way they want.

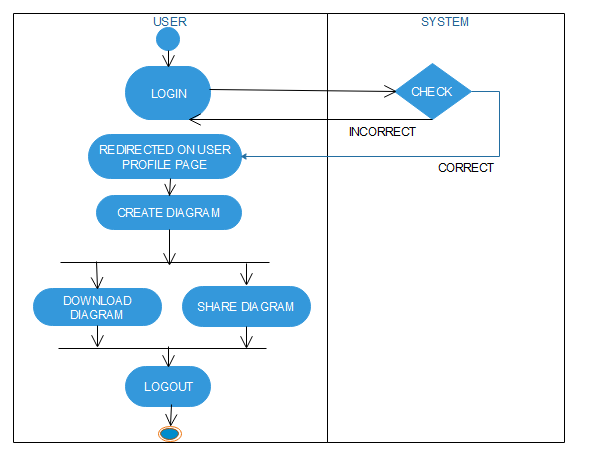
Actors

* User
* System

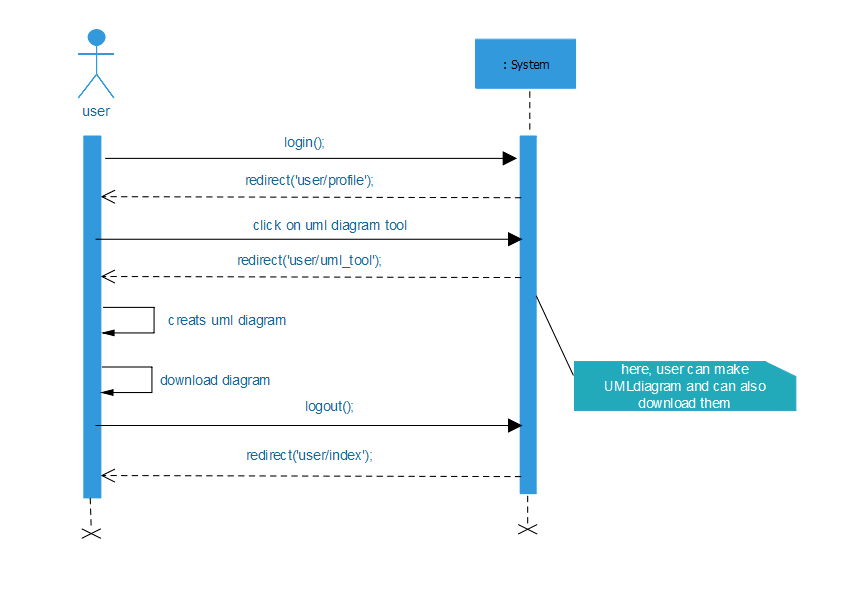
**13.4.1 Use Case Diagram of UML Diagrams**

****

**12.4.2 Activity Diagram of UML Diagrams**

****

**12.4.3 Sequence Diagram of UML Diagrams**

****

12.5 Free Hand Diagram

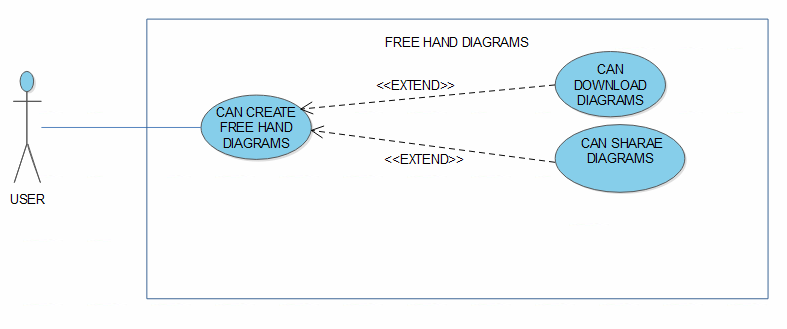
Description

* User can create free hand diagrams.
* User can download and share free hand diagrams.

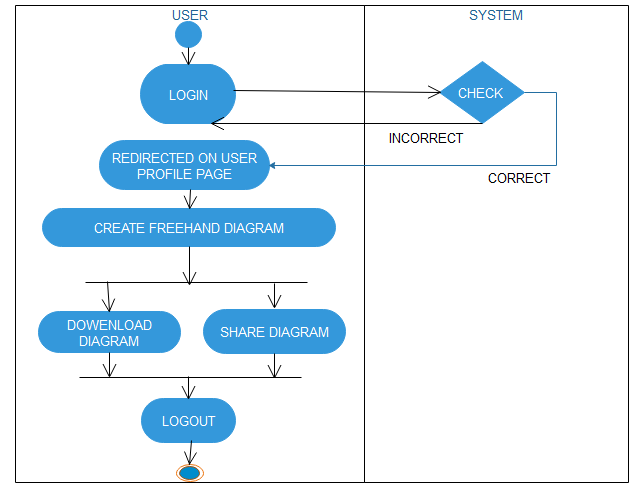
Actors

* User
* System

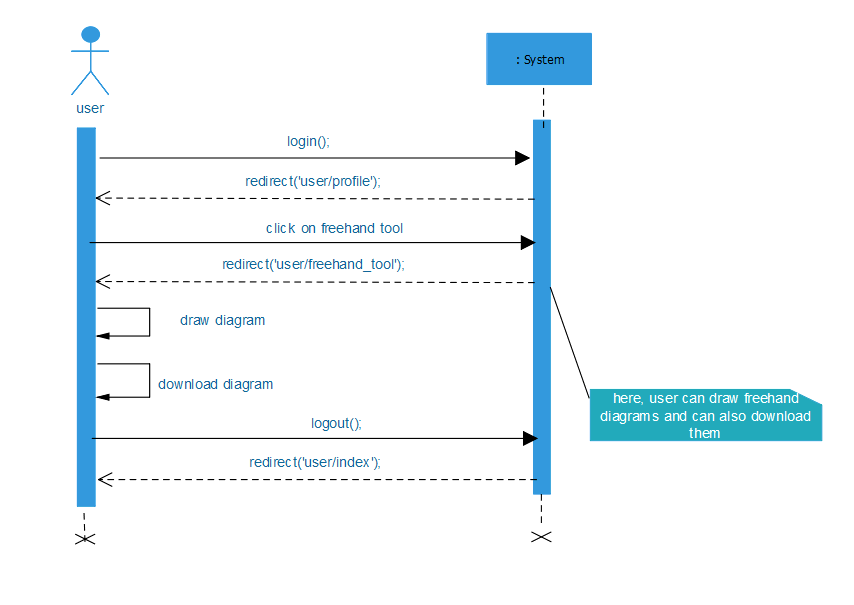
**12.5.1 Use Case Diagram of Free Hand Diagram**

****

**12.5.2 Activity Diagram of Free Hand Diagram**

****

**12.5.3 Sequence Diagram of Free Hand Diagram**

****

**12.6 Text Editor**

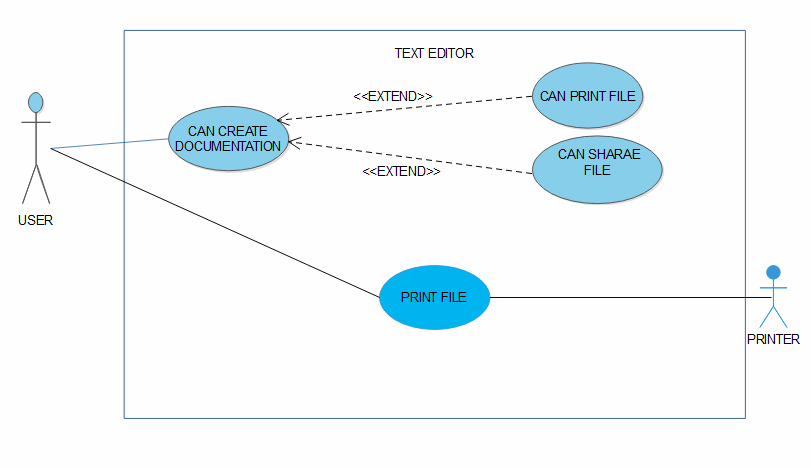
Description

* User can write and format the texts in text editor.
* User also can share and print documents that created in text editor.

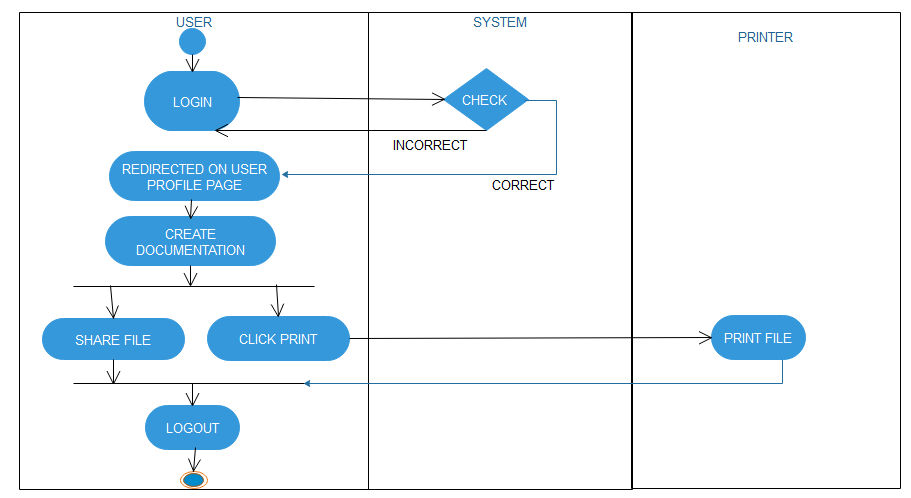
Actors

* User
* Printer
* System

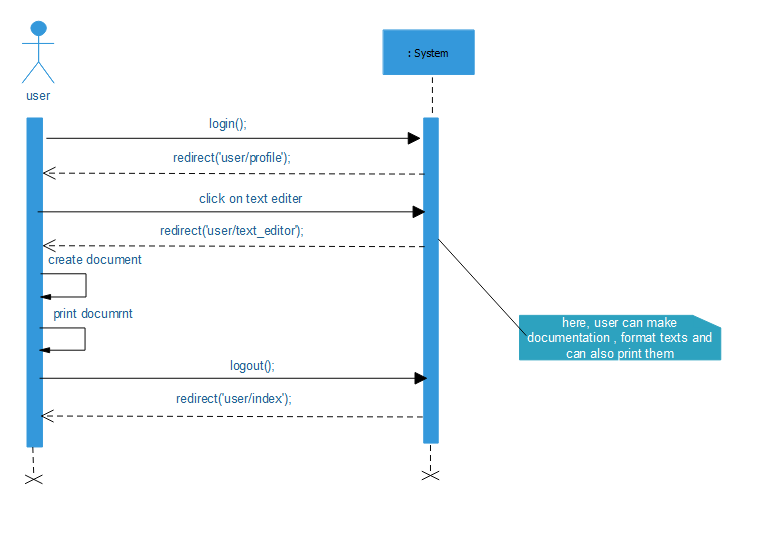
**12.6.1 Use Case Diagram of Text Editor**

****

**12.6.2 Activity Diagram of Text Editor**

****

**12.6.3 Sequence Diagram of Text Editor**

****

**12.7 Tutorials**

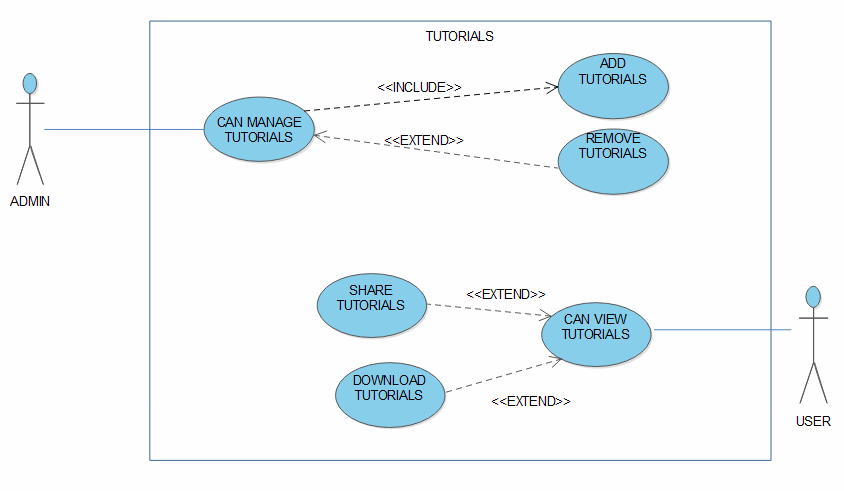
Description

* User can view tutorials.
* .User can share and download tutorials.

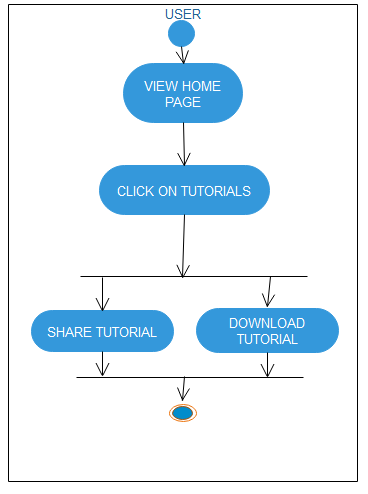
Actors

* User
* Admin
* System

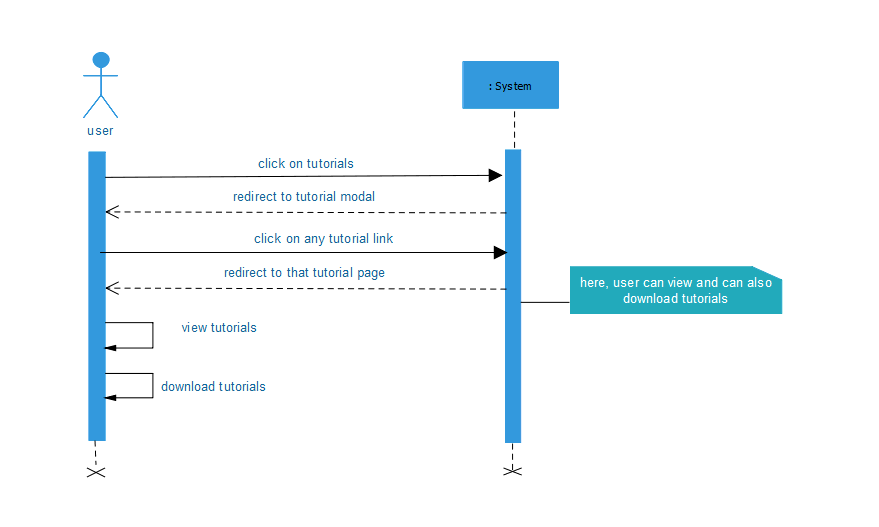
**12.7.1 Use Case Diagram of Tutorials**

****

**12.7.2 Activity Diagram of Tutorials**



12.7.3 Sequence Diagram of Tutorials



**12.8 Templates**

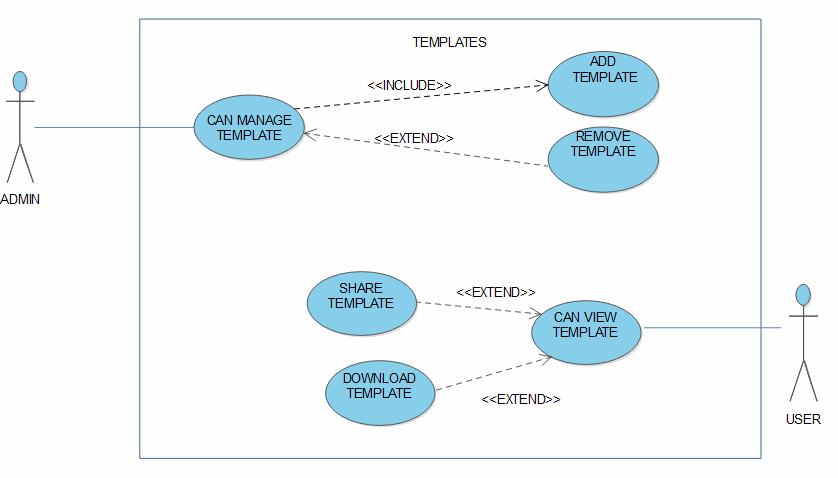
Description

* User can view templates.
* User can share and download templates.
* Admin can manage template.

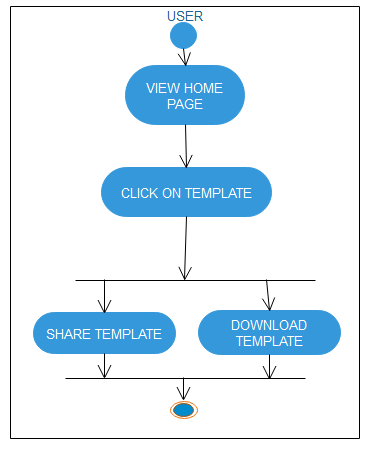
Actors

* User
* Admin
* System

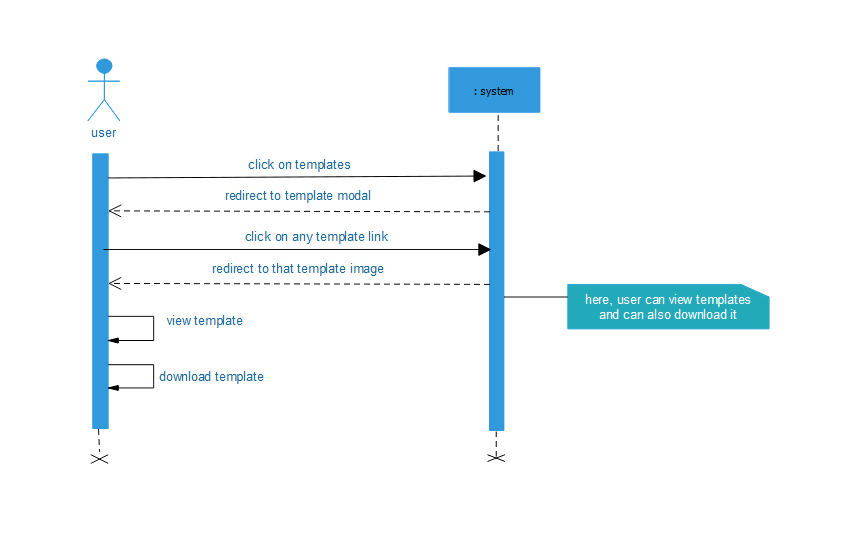
**12.8.1 Use Case Diagram Of Templates**

****

**12.8.2 Activity Diagram of Templates**



**12.8.3 Sequence Diagram Of Templates**

****

**12.9 Projects**

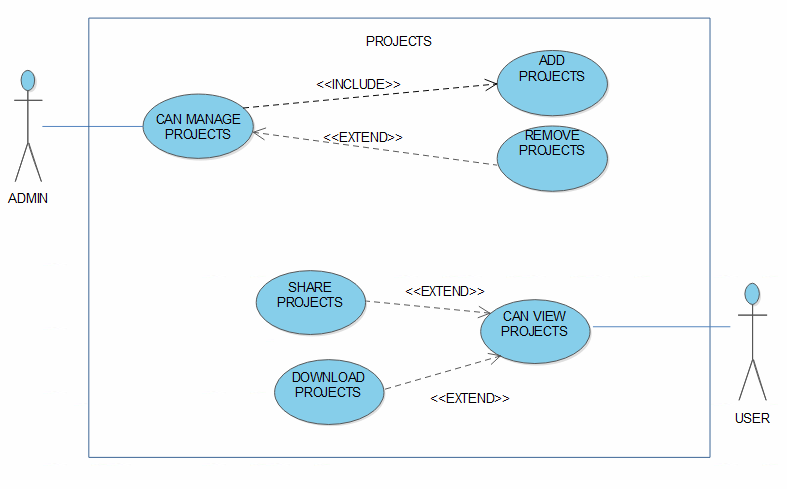
Description

* User can view Projects.
* User can share and download Projects.
* Admin can manage projects.

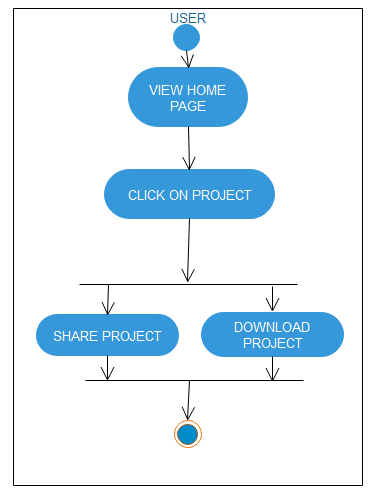
Actors

* User
* Admin
* System

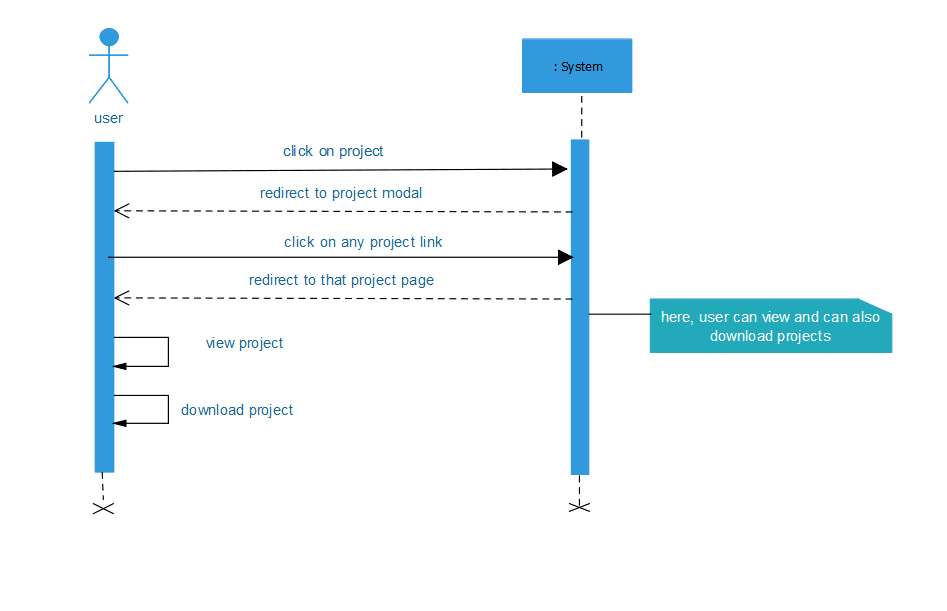
**12.9.1 Use Case Diagram of Projects**

****

**12.9.2 Activity Diagram of Projects**

****

**12.9.3 Sequence Diagram of Projects**

****

**12.10 Feedback**

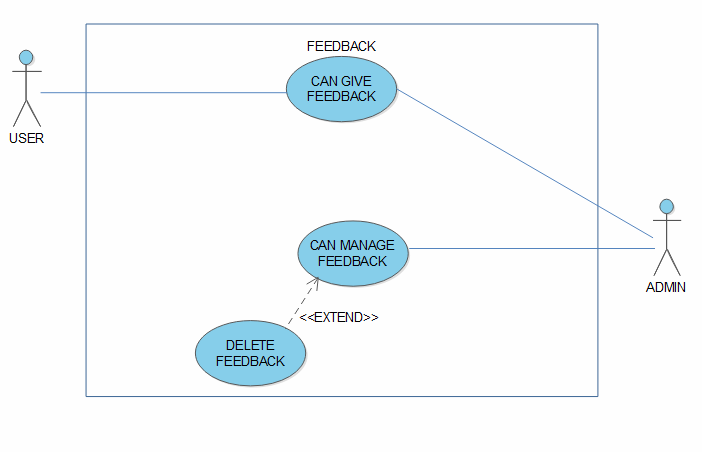
Description

* User can give feedbacks to admin.

**Actors**

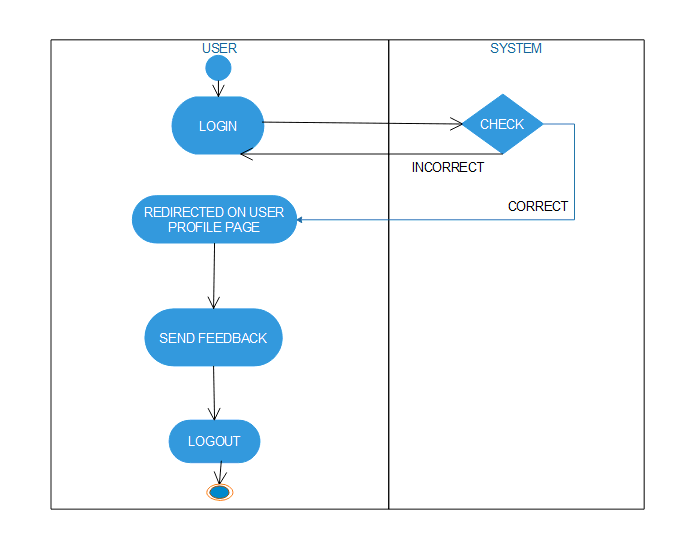
* User
* Admin
* System

**12.10.1 Use Case Diagram of Feedback**

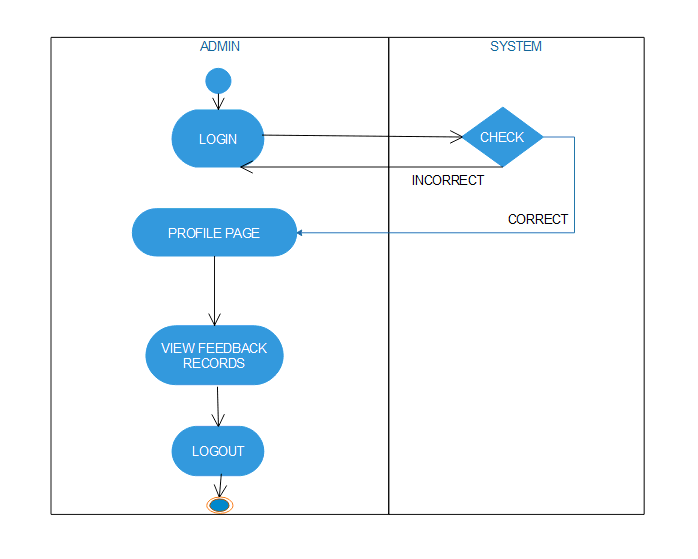
****

**12.10.2 Activity Diagram of Feedback**

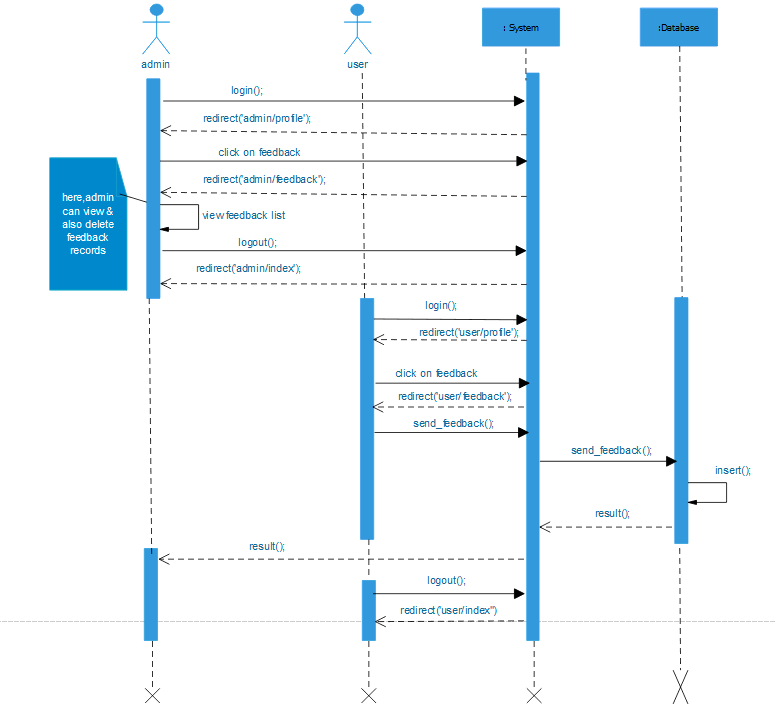
**1)User- Activity Diagram of Feedback**

****

**2)Admin- Activity Diagram of Feedback**

****

**12.10.3 Sequence Diagram of Feedback**

****

**12.11 Advertisements**

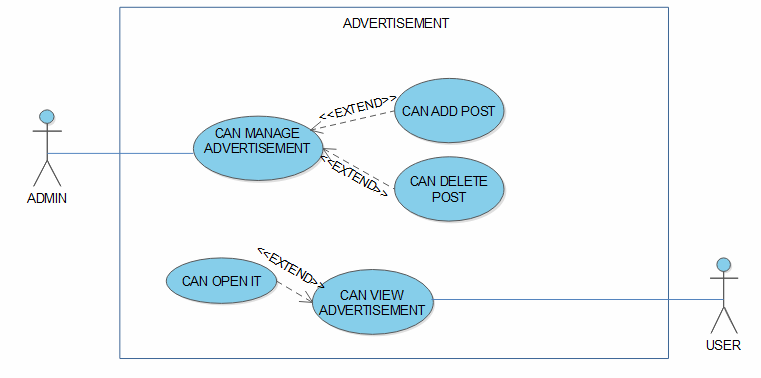
**Description:**

* Admin can post , view and delete the advertisements
* User can see the advertisement.

Actor:

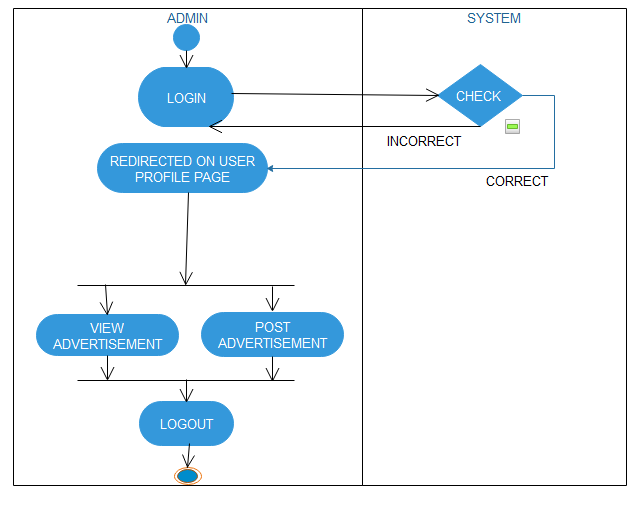
* + User
  + Admin
  + System

12.11.1 Use Case Diagram of Advertisements

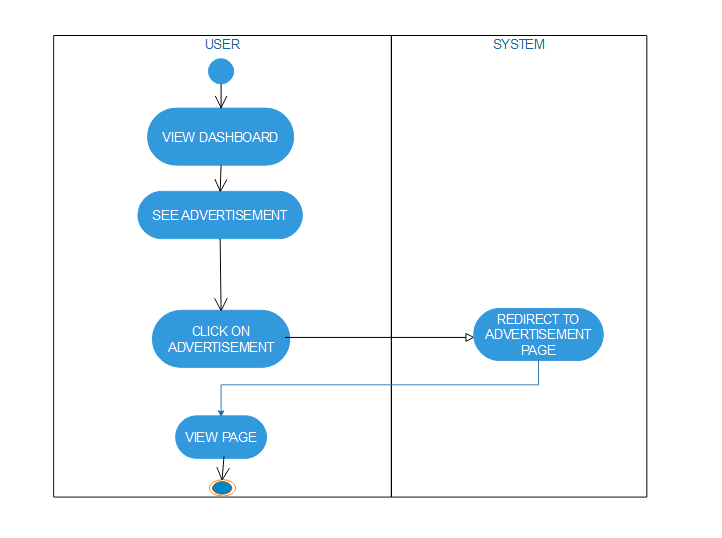


12.11.2 Activity Diagram of Advertisements

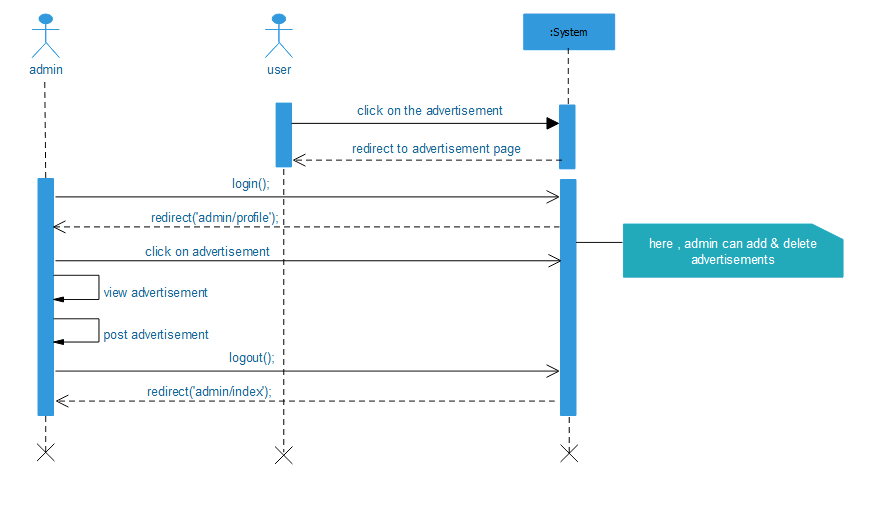
1)Admin-Activity Diagram of Advertisement



2)User-Activity Diagram of Advertisement



12.11.3 Sequence Diagram of Advertisements



12.12 Message

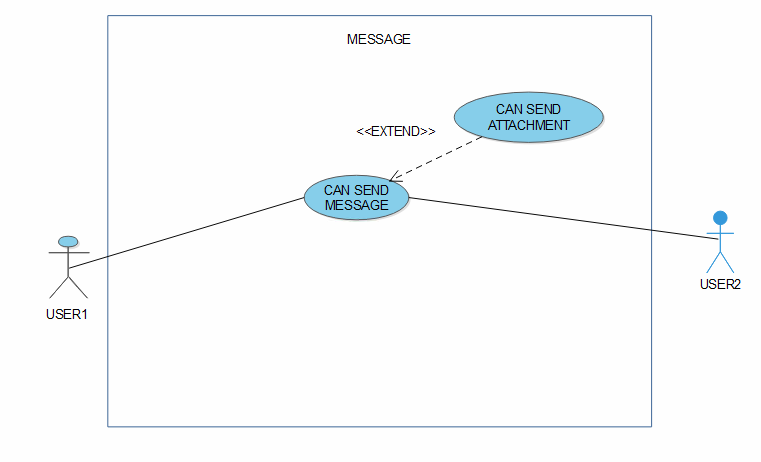
Description

* One user chat with another user.

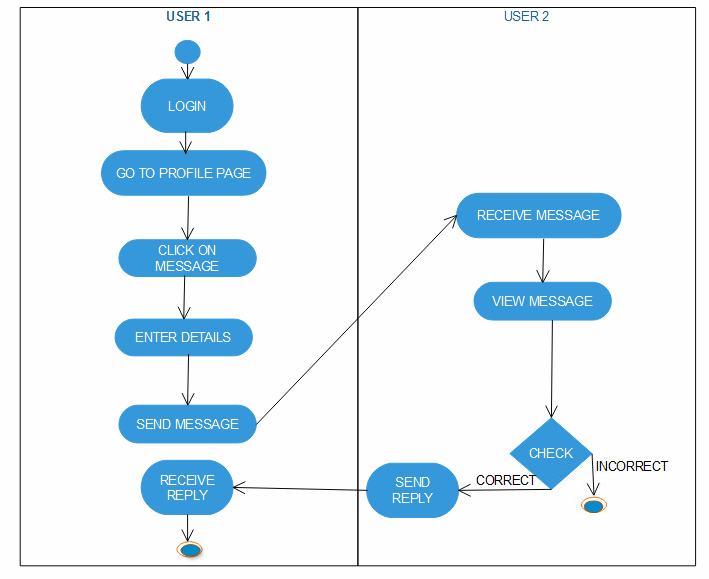
Actor

* User
* System

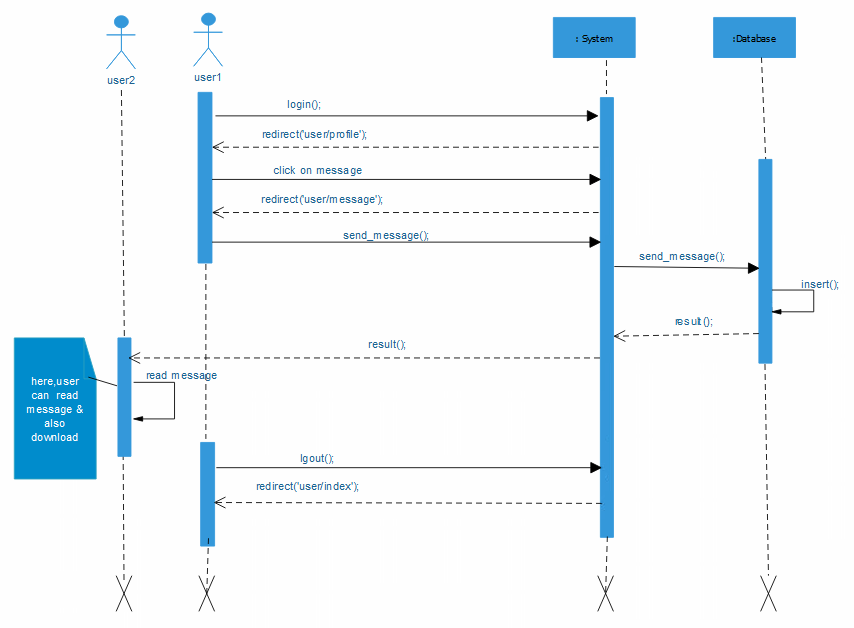
12.12.1 Use Case Diagram of Message



12.12.2 Activity Diagram of Message



12.12.3 Sequence Diagram of Message



12.13 Profile Manage

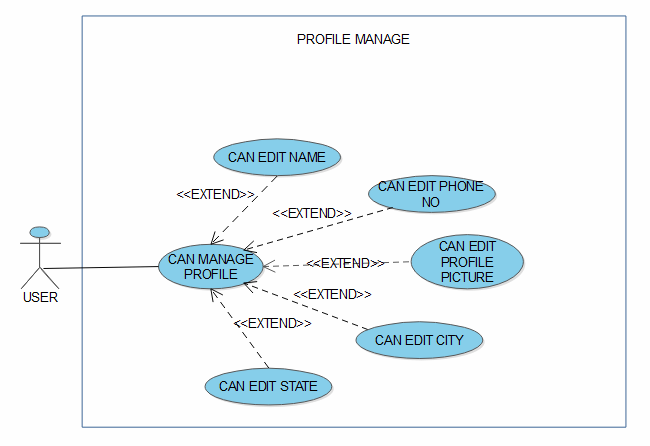
Description

* User can manage his/her profile.

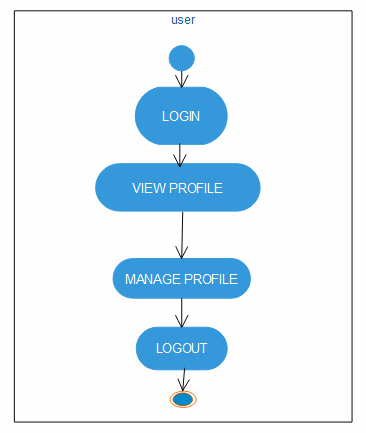
Actor

* User
* System

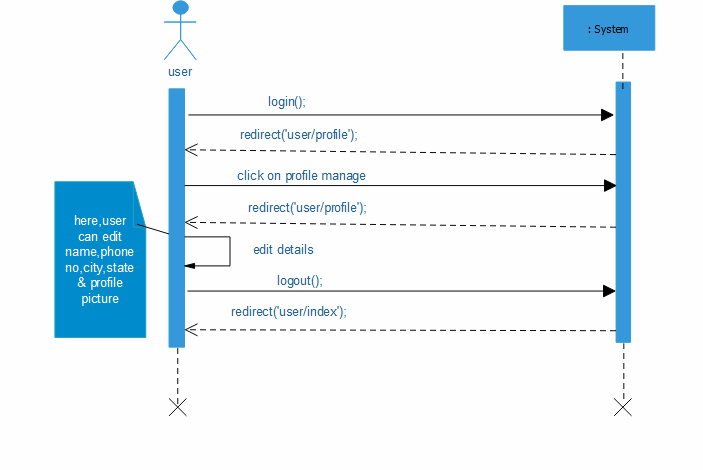
12.13.1 Use Case Diagram of Profile manage



12.13.2 Activity Diagram of Profile manage



12.13.3 Sequence Diagram of Profile Manage



13. Data Modelling

13.1 Data Dictionary

Tables

* Admin
* Registration
* city
* Feedback
* Message
* State
* Advertisement

Data dictionary tables:

**1: Admin**

|  |  |  |
| --- | --- | --- |
| **Fields** | **Datatype(Length)** | **Constraints** |
| Admin\_id | Int(11) | Primary key |
| Admin\_name | Varchar(255) |  |
| Admin\_email | Varchar(255) |  |
| Admin\_password | Varchar(255) |  |

**2: Advertisement**

|  |  |  |
| --- | --- | --- |
| **Fields** | **Datatype(Length)** | **Constraints** |
| Add\_id | Int(11) | Primary |
| Add\_image | Text |  |
| Add\_title | Varchar(255) |  |

**3: Registration**

|  |  |  |
| --- | --- | --- |
| **Fields** | **Datatype(Length)** | **Constraints** |
| Reg\_id | Int(11) | Primary |
| Reg\_name | Varchar(255) |  |
| Reg\_mobile | Varchar(255) |  |
| Reg\_email | Varchar(255) |  |
| Reg\_password | Varchar(255) |  |
| Image | Text |  |
| State\_fk | Int(11) | Foreign |
| City\_fk | Int(11) | Foreign |
| Varified\_at | Enum(‘0’,’1’) |  |

**4: City**

|  |  |  |
| --- | --- | --- |
| **Fields** | **Datatype(length)** | **Constraints** |
| City\_id | Int(11) | Primary |
| City\_name | Varchar(255) |  |
| State\_fk | Int(11) | Foreign |

**5: Feedback**

|  |  |  |
| --- | --- | --- |
| **Fields** | **Datatype(Length)** | **Constraints** |
| F\_id | Int(11) | Primary |
| Feedback\_message | Varchar(255) |  |
| User\_id | Int(11) | Foreign |
| Created\_at | Varchar(255) |  |

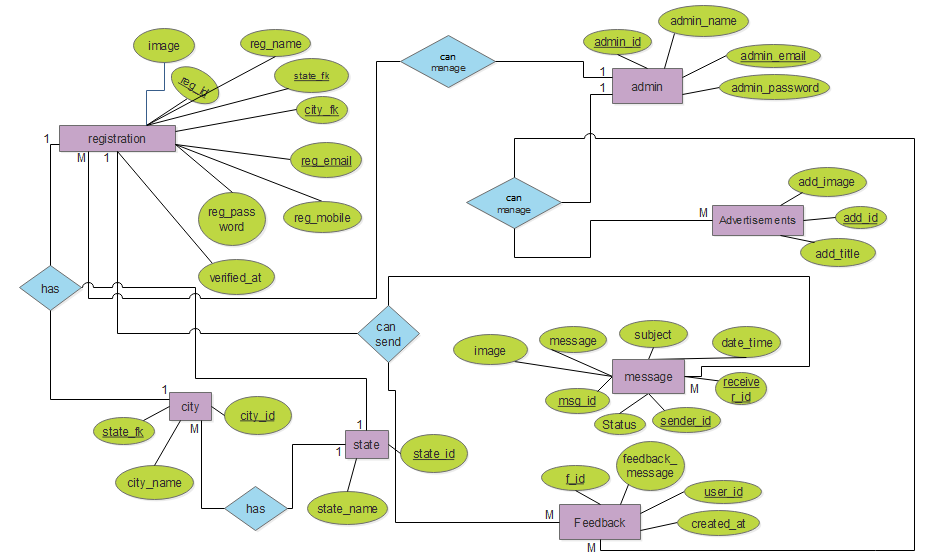
**6:**  **Message**

|  |  |  |
| --- | --- | --- |
| **Fields** | **Datatype(Length)** | **Constraints** |
| Msg\_id | Int(11) | Primary |
| Sender\_id | Varchar(255) | Foreign |
| Receiver\_id | Varchar(255) | Foreign |
| Message | Varchar(255) |  |
| Status | Enum(‘0’,’1’) |  |
| Date\_time | Varchar(255) |  |
| subject | Varchar(255) |  |

**7: State**

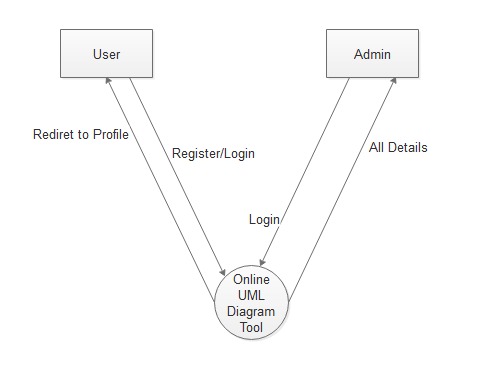
|  |  |  |
| --- | --- | --- |
| **Fields** | **Datatype(length)** | **Constraints** |
| State\_id | Int(11) | Primary |
| State\_name | Varchar(255) |  |

**13.2 E-R Diagram**

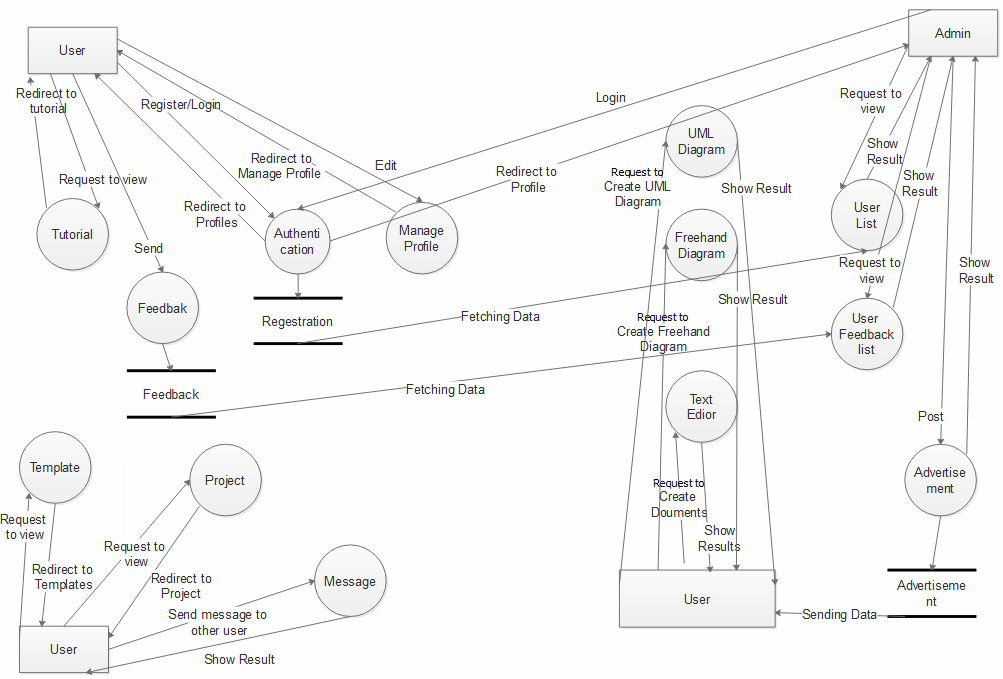
****

**13.3 DFD**

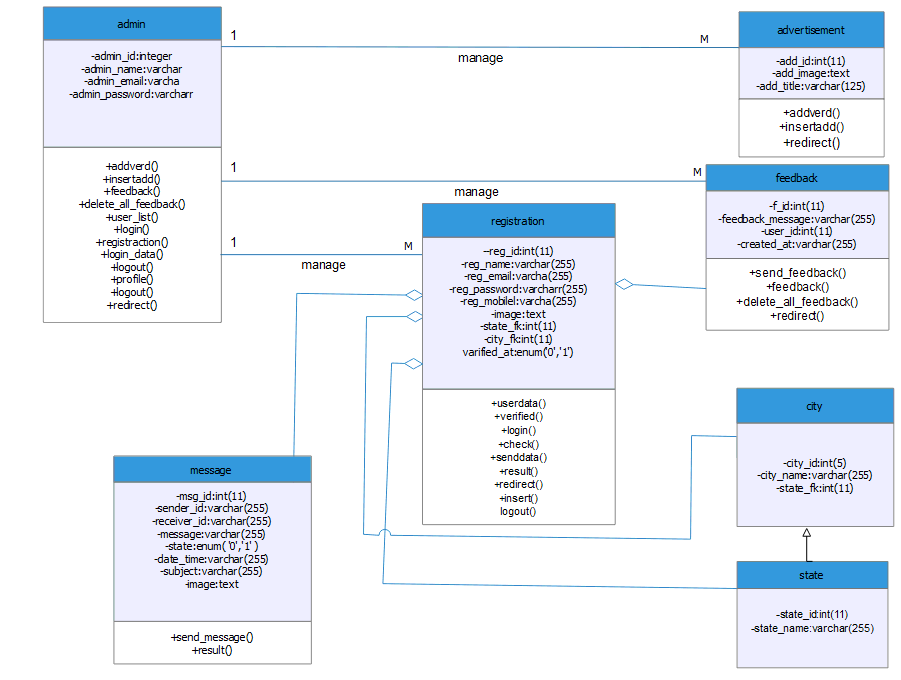
**1) Level 0 DFD**

****

**2) Level 1 DFD**

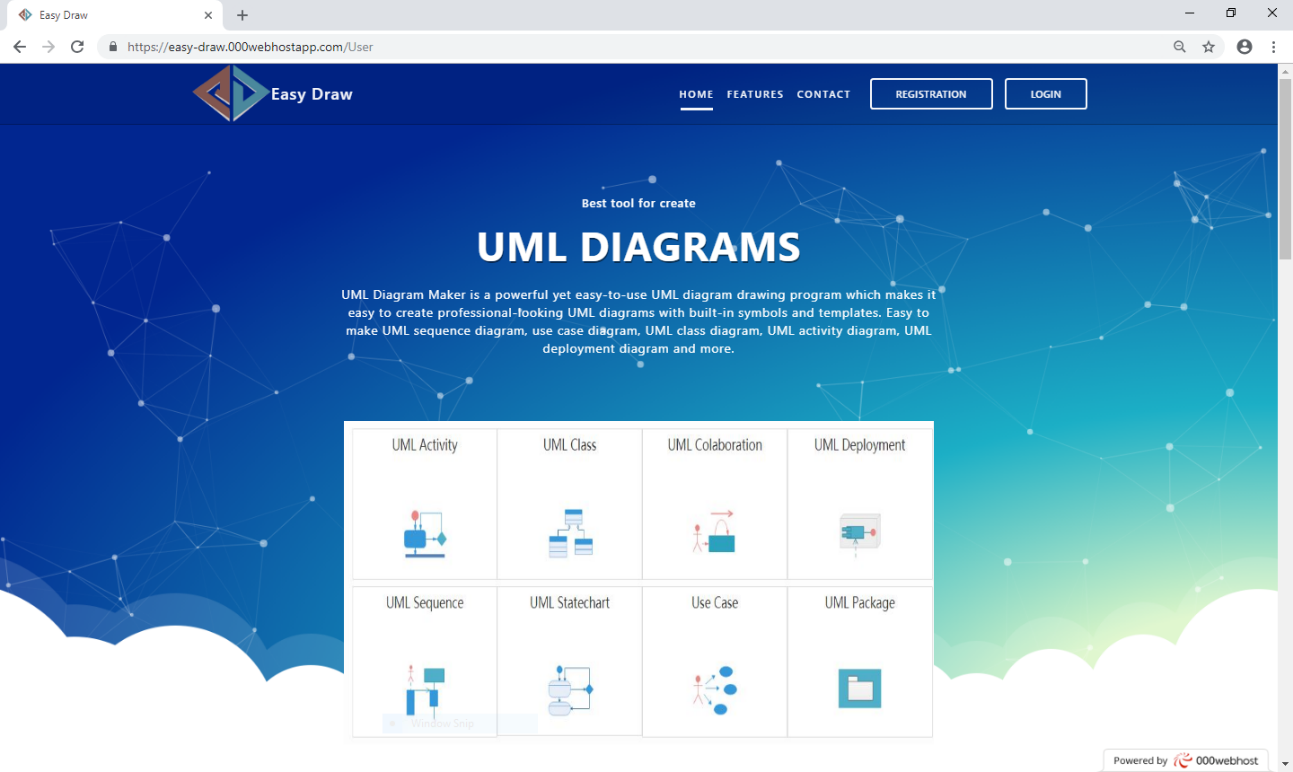
****

**13.4 Class Diagram**

****

**14. Screenshots and Explanations**

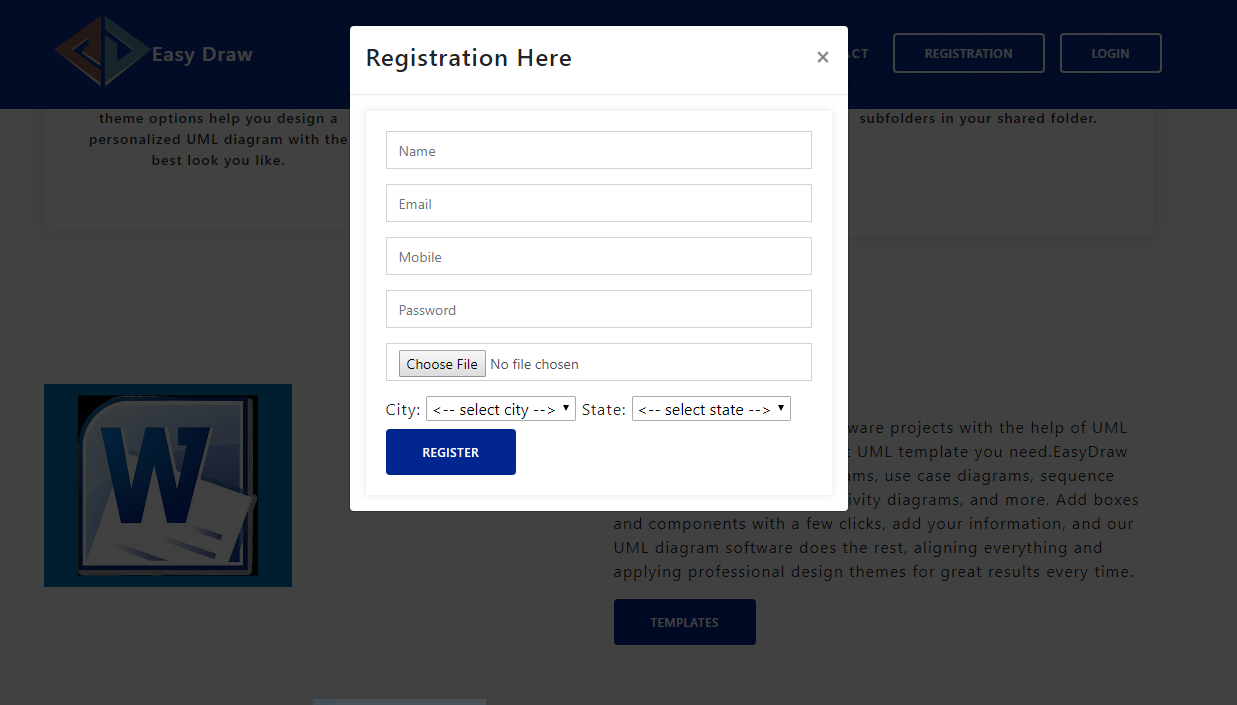
**1. Main home page of the website.**



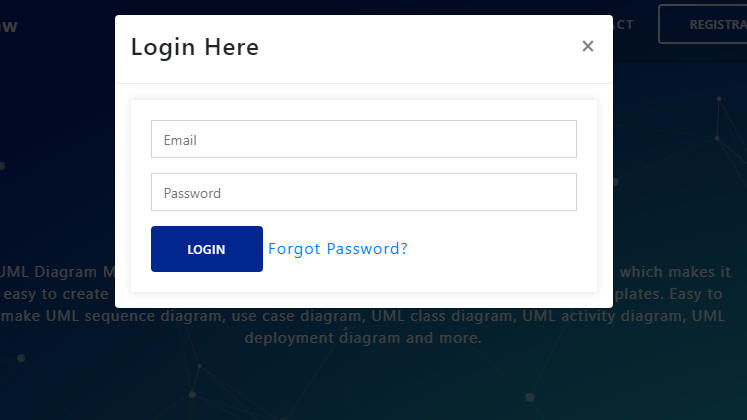
**2.Home page with varieties of Project, Tutorials and Templates**



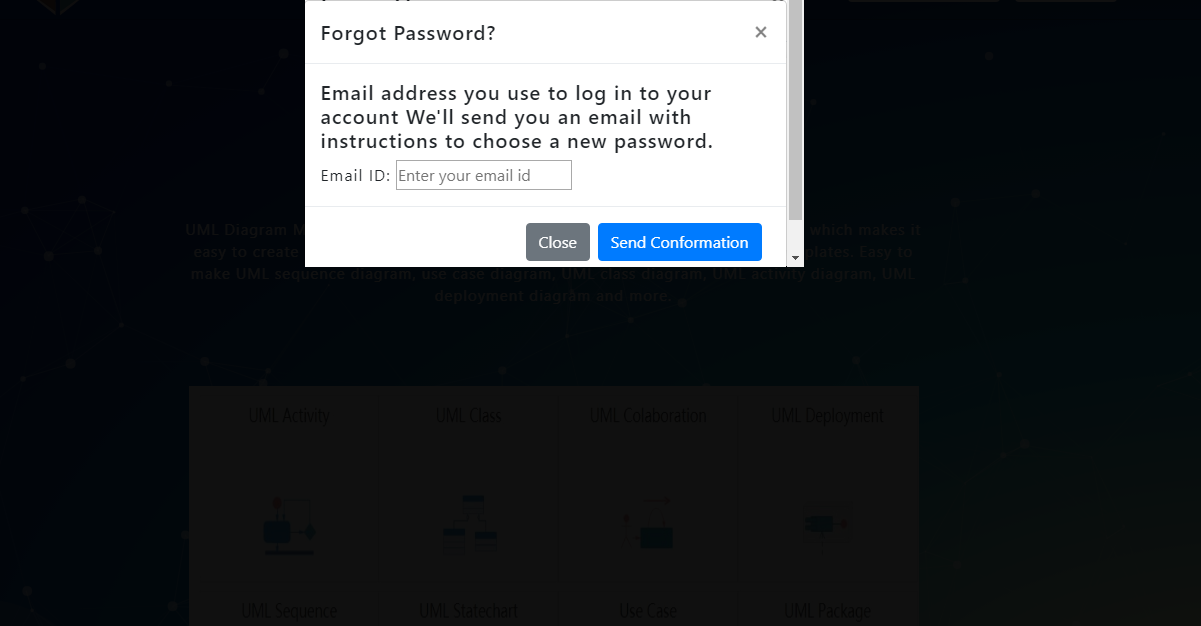
3.User Registration modal.



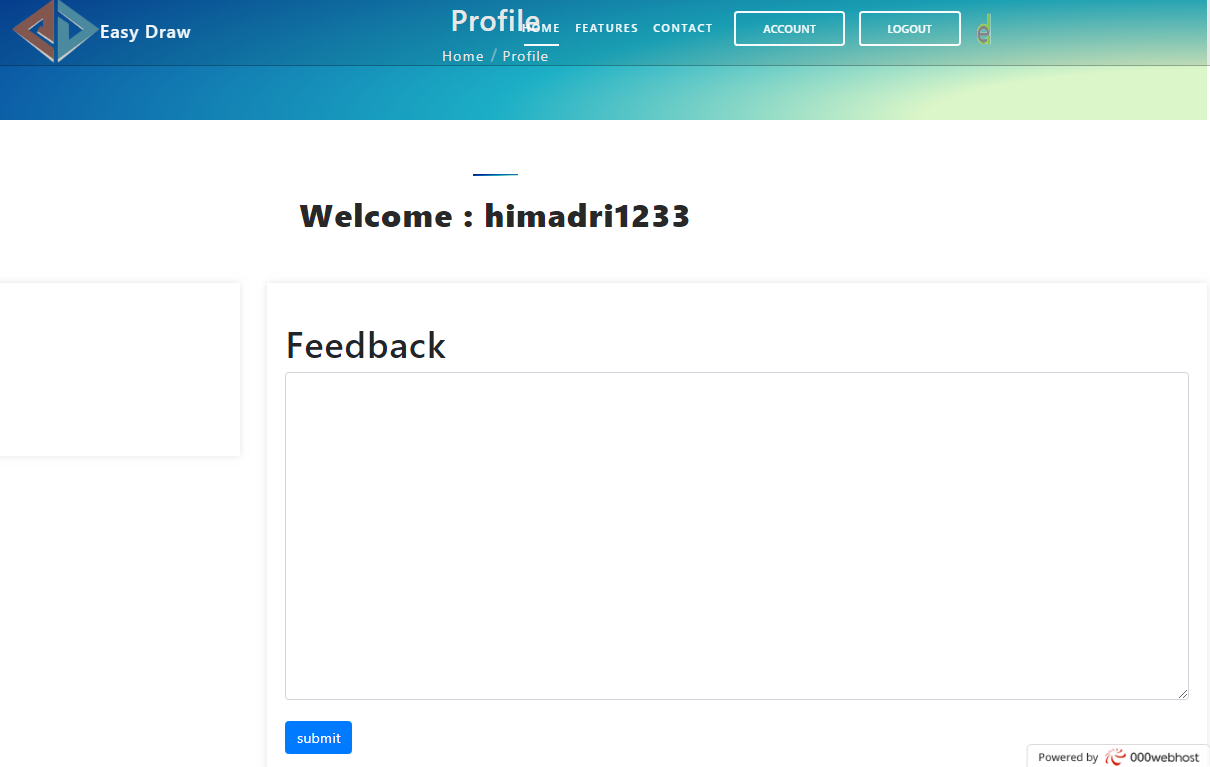
4. User Login modal



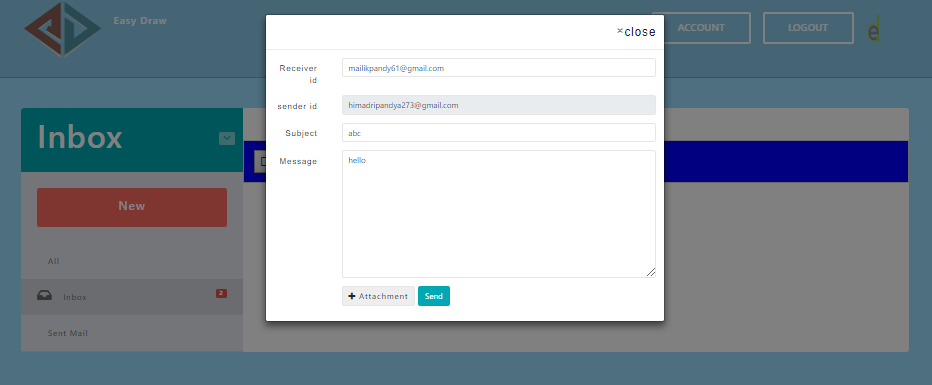
5. Forgot password modal where user need to enter their registered email id , after that user will receive reset link and cab easily reset his/her password.



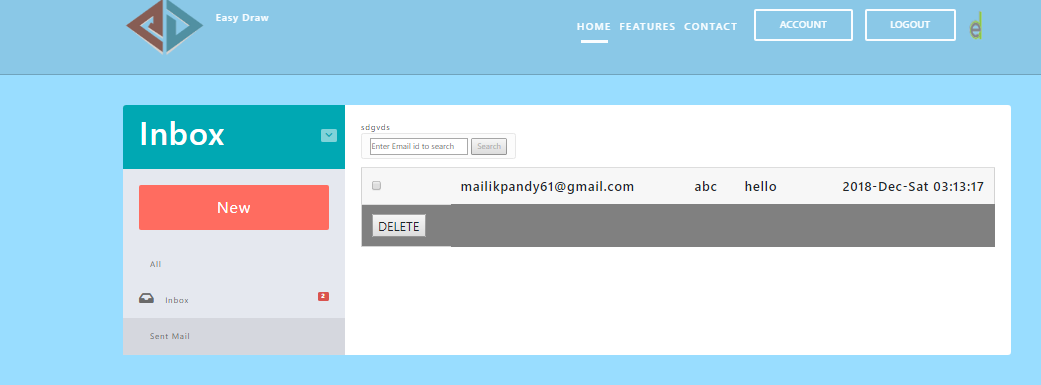
6. User feedback page, where user can directly send feedback to admin.



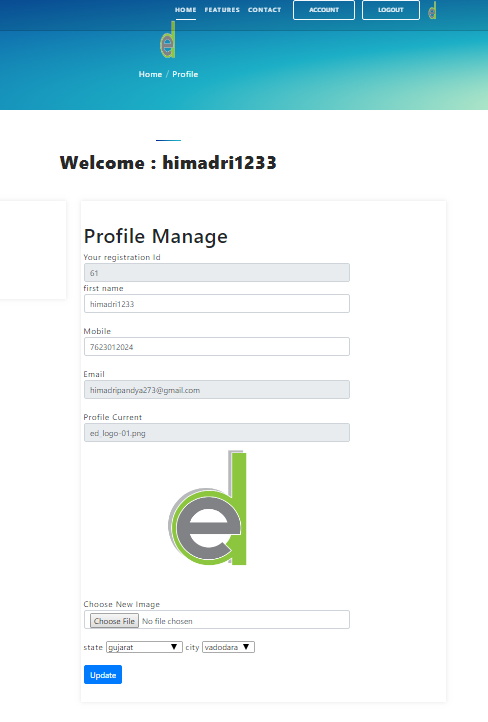
7. User message page , where user can send messages and attachments to another user .



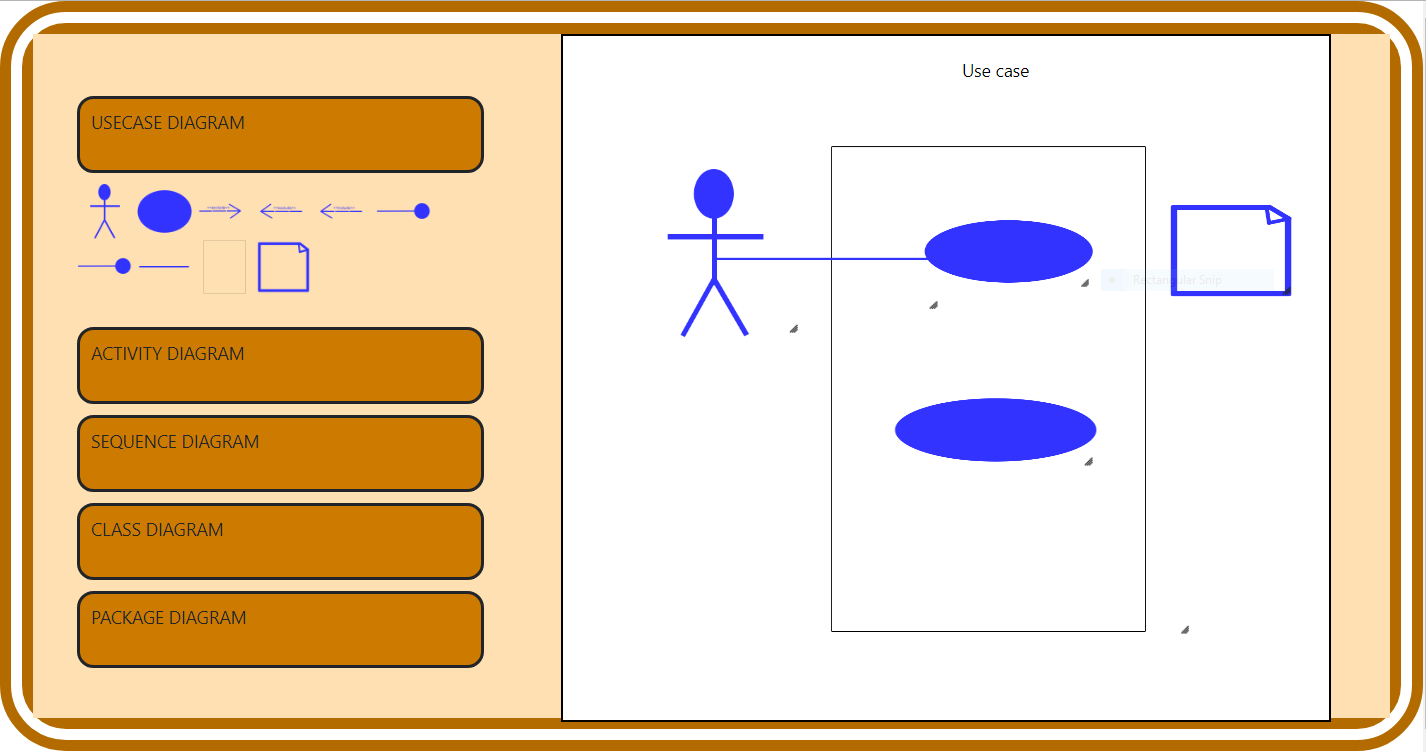
8. User message page , where user can see the sent box and inbox and also can delete messages.



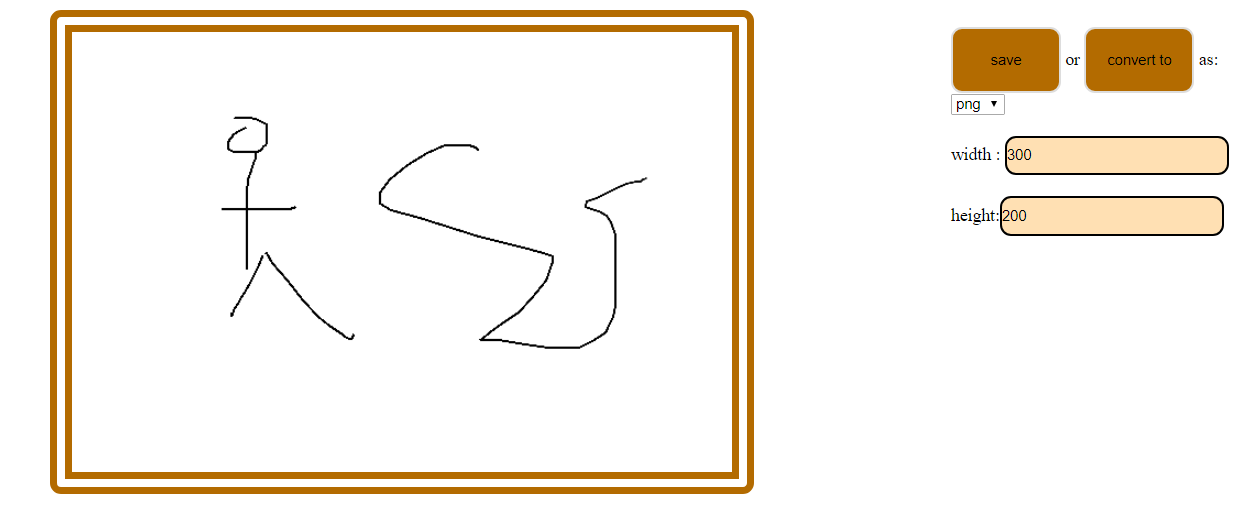
9.User Profile manage page, where User can edit his/her profile details.



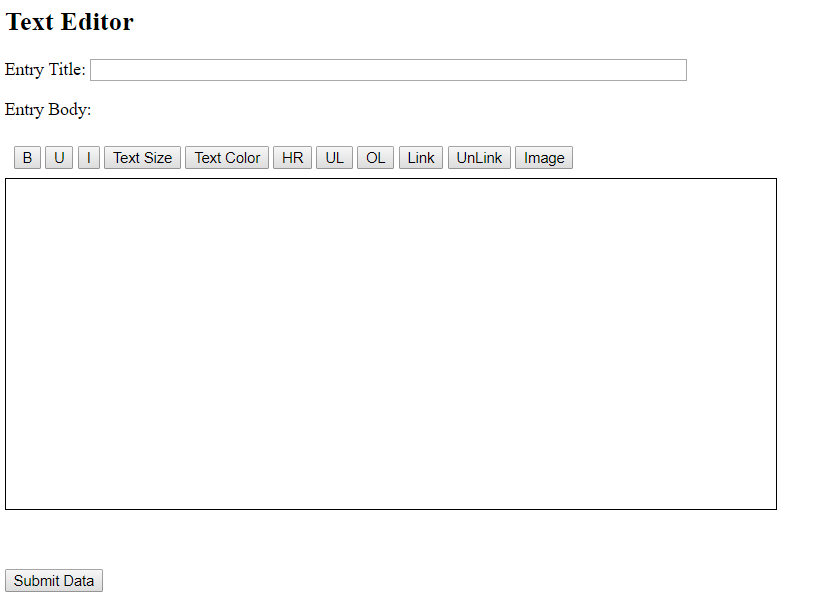
10.UML Tool , user can create their different types of UML diagrams and can also download them.



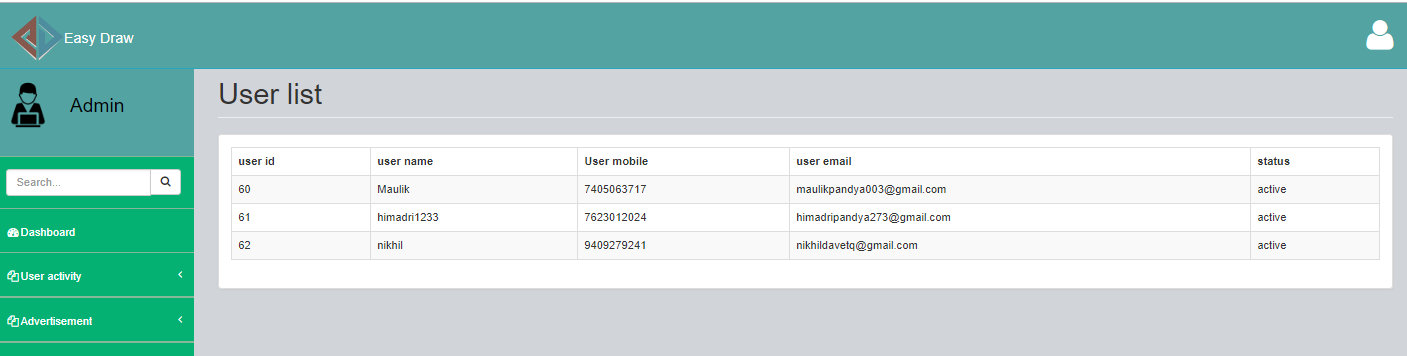
11.Free hand Diagram Tool, where user can create any diagrams and can also download them.



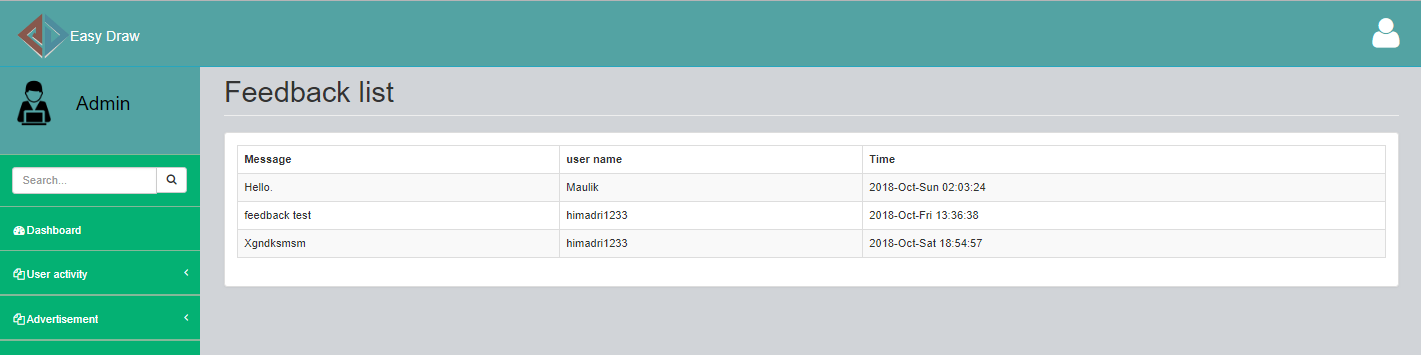
12.This is Text editor, where user can prepare their documents , format texts and can also print them.



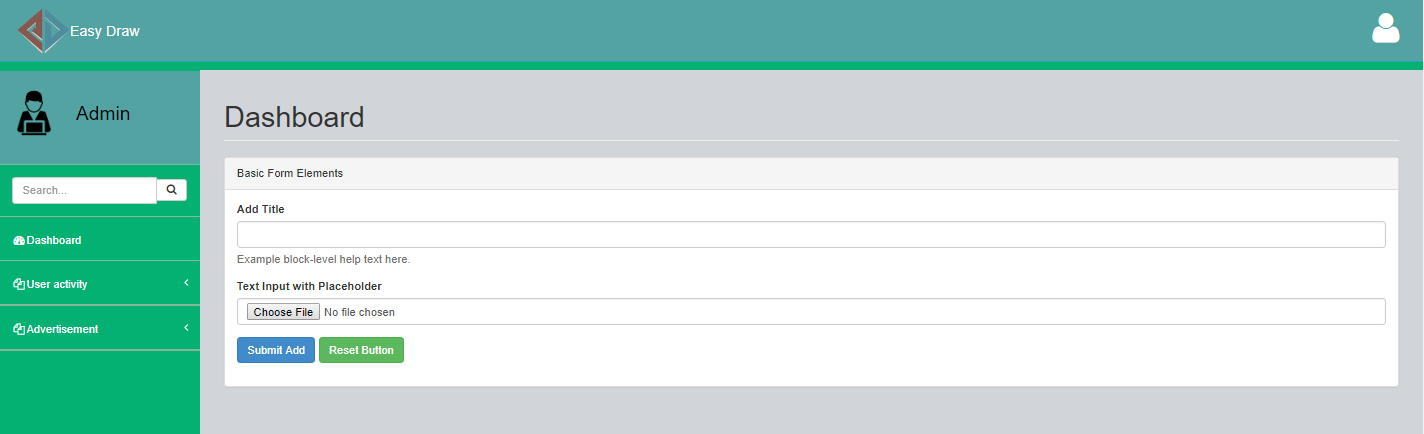
13.Admin’s Userlist, were admin can see and delete the records of registered user list.



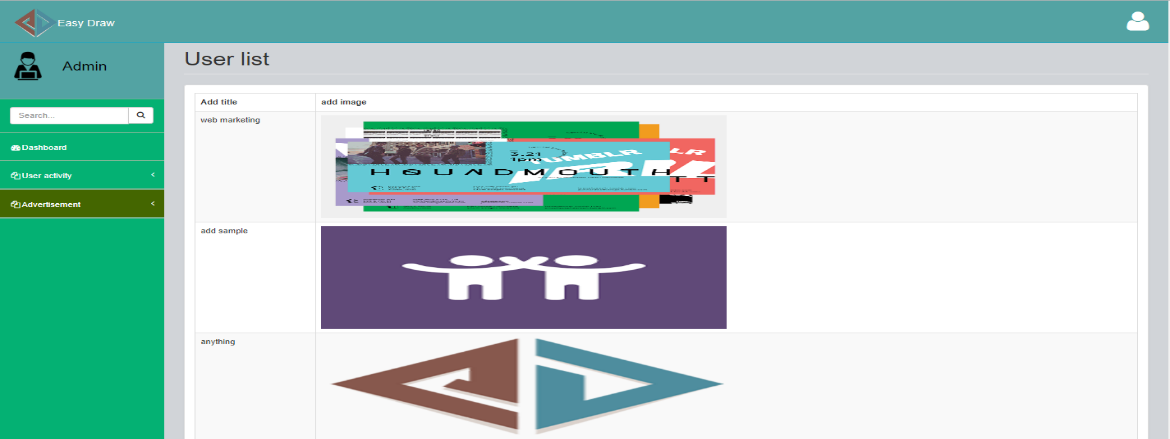
14. Admin’s feedback lists, where admin can view and delete the records of feedbacks sent by users.



15. Here admin can post advertisements.



16. Admin’s advertisement’s lists, where admin view and delete records of advertisement.



15. Testing

* The first step to testing is known as BLACK BOX TESTING and the second is known as WHITE BOX TESTING.
* Black box testing is a testing technique in which functionality of the website under test (SUT) is tested without looking at the internal code structure, implementation details and knowledge of internal paths of the software.
* A Black box testing attempts to find errors in the following categories:

1. Incorrect or missing functions.

2. Interface errors.

3. Errors in data structures or external database access.

4. Behavior or performance errors, and

5. Initialization and termination errors.

* White box testing is a [testing method](http://softwaretestingfundamentals.com/software-testing-methods/) in which the internal structure/design/implementation of the item being tested is known to the tester. The tester chooses inputs to exercise paths through the code and determines the appropriate outputs.
* White box testing involves the testing of the website code for the following:

1. Internal security holes
2. Broken or poorly structured paths in the coding processes
3. The flow of specific inputs through the code
4. Expected output
5. The functionality of conditional loops
6. Testing of each statement, object and function on an individual basis

**15.1 Testing Method**

Black box testing:

* Our project is web based application, we had to take care of concurrent database access and updates. We used 000webhost website for hosting, which would cater to all the needs of the application access and MySQL dbms. We found that concurrent database access and updates worked fine.
* Each function was tested to acquire the expected results.
* The interfaces were verified with the end users and some changes in the representation of input mechanisms were made.
* The database connections were checked and each time the database connection was opened it was ensured that the connection was closed to optimize the database performance.

White box Testing Phase:

* Each path and link was checked for any dead links.
* The password authentication gives proper response to correct and incorrect passwords.
* One user cannot see other user’s accounts.

**15.2 Test Cases**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Test case | Pre-Conditions | Test steps | Test data | Expected result | Actual result | Pass /Fail |
| Check response on entering valid user details | Valid email ID should be there like Gmail ID, yahoo mail ID etc. | 1. open website easy-draw.000webhostapp.com.  2. Enter name, email, mobile no., password, profile picture, city and state.  3. Click on register. | Name: Himadripandya  Email: himadripandya273@gmail.com  Mobile: 8567800670  Password: himadri123  Profile pic: any png , jpg or gif image  City: Vadodara  State: Gujarat | Registration must be successful. | Successful Registration. | Pass |
| Check response on entering valid email Id and password | Registered email id and password should be there | 1. open a website  2. Enter email id and password  3.Click on login. | Email: himadripandya273@gmail.com  Password: himadri123 | Login must be successful | Successful login | Pass |
| Check whether the user can edit their profile or not | Successful login must be there | 1.login into the website  2.go to profile manage  3.edit name, password, mobile no., profile pic, city and state.  4. click on submit. | Name: Himadriii  Password: himadri12345  Mobile no.:97845457678  Profile pic: any png, jpg or gif image  City: Mumbai  State: Maharashtra | Editing of user details must be successful. | Edited successfully | Pass |
| Check whether feedback submitted successfully or not | Successful login must be there | 1.login into the website  2.go to feedback  3.write feedback  4.click on submit | Feedback: “good work” | Submission must be successful | Submitted successfully | Pass |
| Check whether message and attachment send successfully from one user to another or not | Successful login must be there | 1.login into the website  2.go to message  3. Write receiver’s registered email id, subject,message and attach any file or picture.  4.click on submit | Receiver’s email id: Kpriti99@ gmail.com  Subject: testing  Message: “testing message”  Attachment: any pdf,zip,doc,png,jpg or gif iamge. | Message sending must be successful | Sent successfully. | Pass |
| Check whether  Diagram downloadedsuccessfully or not | Successful login must be there | 1.login into the website  2.go to UML diagram.  3.Drag and drop the shapes  4.click on download | Drag and drop the shapes on canvas | Diagram download must be successful. | Diagram downloaded successfully | Pass |
| Check whether admin post advertisements successfully or not | Successful admin login must be there | 1. login to the admin panel  2. go to post ad  3. write title and attach any image.  4. click on submit. | Title: “marketing website”  Attachment: any png, jpg or gif image. | Posting of ad must be successful. | Post successfully. | Pass |

**16. Security Features**

* Prevented from cross site scripting.
* Proper authentication and session management is there.
* Password hashing by using MD5.
* JS validation on client side and server side.
* Accepting only verified email ID and password of minimum 8 digit characters.
* No insecure direct object references-access denied in writing full path.
* Prevented from Cross-site request forgery (CSRF).
* Profile details cannot be seen by another user.

**17. Coding Standard Followed**

* We have used CodeIgnitor2.2.6 ,  is an open-source software rapid development web framework, for use in building dynamic web sites with PHP. CodeIgniter is loosely based on the popular [model–view–controller](https://en.wikipedia.org/wiki/Model%E2%80%93view%E2%80%93controller) (MVC) development pattern. While controller classes are a necessary part of development under CodeIgniter, models and views are optional. Codeigniter can be also modified to use Hierarchical Model View Controller (HMVC) which allows us to maintain modular grouping of Controller, Models and View arranged in a sub-directory format.
* In order to make this as simple as possible, we used tabs, not spaces.
* All variable names are in lowercase, with words separated by an underscore. And they descriptive and concise. Example: $data etc.
* Loopin Indices: The only situation where a one-character variable name is allowed is when it's the index for some looping construct. In this case, the index of the outer loop are in $i. If there's a loop inside that loop, its index are in $j, followed by $k, and so on.Example;
* for ($i = 0; $i< $outer\_size; $i++)  
  {  
       for ($j = 0; $j < $inner\_size; $j++)  
       {  
            foo($i, $j);  
       }  
  }
* Functionsnames are named descriptively. For example userdata() etc.
* We have used necessary comments to make the code more understandable.
* All accounts protected by user id and password.
* Validations are applied whenever necessary.
* The database uses tables in which they have only the necessary fields.

18. Limitations and Future Enhancements

* Adding more features to UML tool like styling of labelling texts and payment gateway.
* Adding more shapes of different types of UML diagrams.
* Adding more projects ,templates and tutorials.

19. Experience and Learning

* We can now understand the elements and activities of the **Online UML Diagram Tool** , how its various modules are maintained , the role of persons associated with the this and the flow of activities which are carried on for the management of different modules.
* We learned CodeIgnitor and various languages to build responsive website.
* Team work.
* Appropriate word distribution amongst team members.

20. References

* Presentations and lectures taught in college
* Wikipedia for definitions.
* Various websites such as:
  + - [www.tutorialspoint.com](http://www.tutorialspoint.com)
    - [www.smartdraw.com](http://www.smartdraw.com)
    - [www.w3schools.com](http://www.w3schools.com)
    - tallyfy.com
    - stackoverflow.com