PROJECT REPORT
On

EPathShala

IN PARTIAL FULFILLMENT
OF
REQUIREMENT FOR THE DEGREE OF
B.Tech in Computer Science

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Acknowledgement

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We are also thankful to the Lab Assistants for their regular help in completing the project at the time.

Last, but not the least we would like to thank our friends Abhishek Yadav and Abhishek Apperwal for helping us.

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Declaration

We declare that this written submission represents our ideas in our own words and where others' ideas or words have been included, we have adequately cited and referenced the original sources.

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Certificate

This to certify that the **Final Report** of project titled **EPathshala** , which is being submitted is an authentic work carried out by **Anmol Khanna , Atul Bhatt ,Chinmay Agarwal** under the guidance of **Dr. Supriya P.Panda .** They **have** successfully completed the above mentioned project.

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ABSTRACT

Virtual education is an emerging concept. Here the classes are not taken face-to-face in a classroom but through an electronic medium as a substitute. These virtual classrooms are gaining importance everyday and very soon they are going to be an integral part of our world.

Taking up these virtual classes through an electronic medium is termed as E-Learning. Today E-Learning is no more a technical word that only a few people know. It is turning to be a part of everyone's life whether a student, employee or a housewife all tend to use E-Learning in one way or another. Larger organizations are turning towards E-Learning solution for proving training digitally.

As the number of Internet access points are growing rapidly, E-Learning is also gaining a new peak. This electronic medium serves best for dissemination of information. E-Learning is proving itself as a boon for students especially for the disabled who are not able to go and attend the lectures. All these emphasis the need for developing an Open Source software that can be used to generate rich multimedia environment for E-Learning.

Introduction

As computers and the internet become faster and faster, more and more information is transmitted, received, and stored every day. The basic learning essence of the divine nature is updated in the new internet era. Learning is now much easier for a human and understand things much efficient manner through the internet technology.

The E-Learning is a breakthrough fuel towards learning.

The learner always wants its desired content available in one roof in complete manner.

To achieve this objective we have provided a web based solution named "E-Learning" that is based on the internet terminology.

The problems with the existing System:

- The manual system is costly and time consuming.
- Information is not available in methodical manner.
- Sometimes system doesn't provide the updated information.
- It generates more hassle for the learner.
- Searching for the desired content is quite complex.
- Information is in distorted manner.

The purpose of this proposed Open Source software is to enable the creation of rich multimedia content that contains Videos ,Presentations ,Word documents and whole lot of other informational material.

The deliverables of the software should be server that allows user to view the content and enables him to download and add files as per his or her needs. We would also be providing an Android Application where one would be getting all the content on the go and enabling the user to make most of his or her time and never be compromised from the conditions.

The project has a lot of scope for future as one enable the user to make his or her own presentation from the content they like the most and can enable the user with a lot of better features.

Objective Of the Project

The E-Learning is quite simple in nature at a glance. It provides the user a distance learning methodology.

There will be a wide variety of users for this software.

Educational Institutions: Institutions that conduct virtual classes would use this software for generating their e-learning courses.

Large Organizations: Organizations training their employees digitally would use this software for generating their training classes.

Open Source Community: As our product is going to be an Open Source product the Open Source community will use this software and implement additional functionalities to the product. Being an Open Source product this software and its code could be reused either partially or fully by other developers

Any educational institution can fill E-Learning with their contents and it work as a backup aid to their students.
Important reference material, notices, eBooks and other technical touch ups can be geared down here for the students.
Ready to go information prevent loss of contents in any user personal circumstances.

So the Main Objective of our System will be :

1. **CONTROL REDUNDANCY :** The System should identify existence of common data and avoid duplicate recording relationships of pointers should be used to locate data which are used many times selective redundancy is sometimes allowed to improve performance or far better reliability.
2. **DATA INTEGRITY :** Consistency of data values and relationships must be preserved in order to achieve this the system must ensure validity of data by using good editing, synchronize updating and propagating changes to other related data element it also involves maintaining audit trails to enable recovery if errors are deleted.
3. **DATA SECURITY :** This is concerned with protecting access to data protection is needed at many levels for access, modification, deletion or display access restriction may be for individual data items or group of items.
4. **DATABASE PERFORMANCE :** The system should be able to provide timely information as required. The cost of storing and retrieving the data should be commensurate with the value of information provided.

MANAGEMENT CONTROL : As the dependence of an organization on a data base increases positive management controls should be exercised over addition, deletion, changes and disposition of data must be protected to start legal accounting and auditing requirements , shown in Fig.1 below.

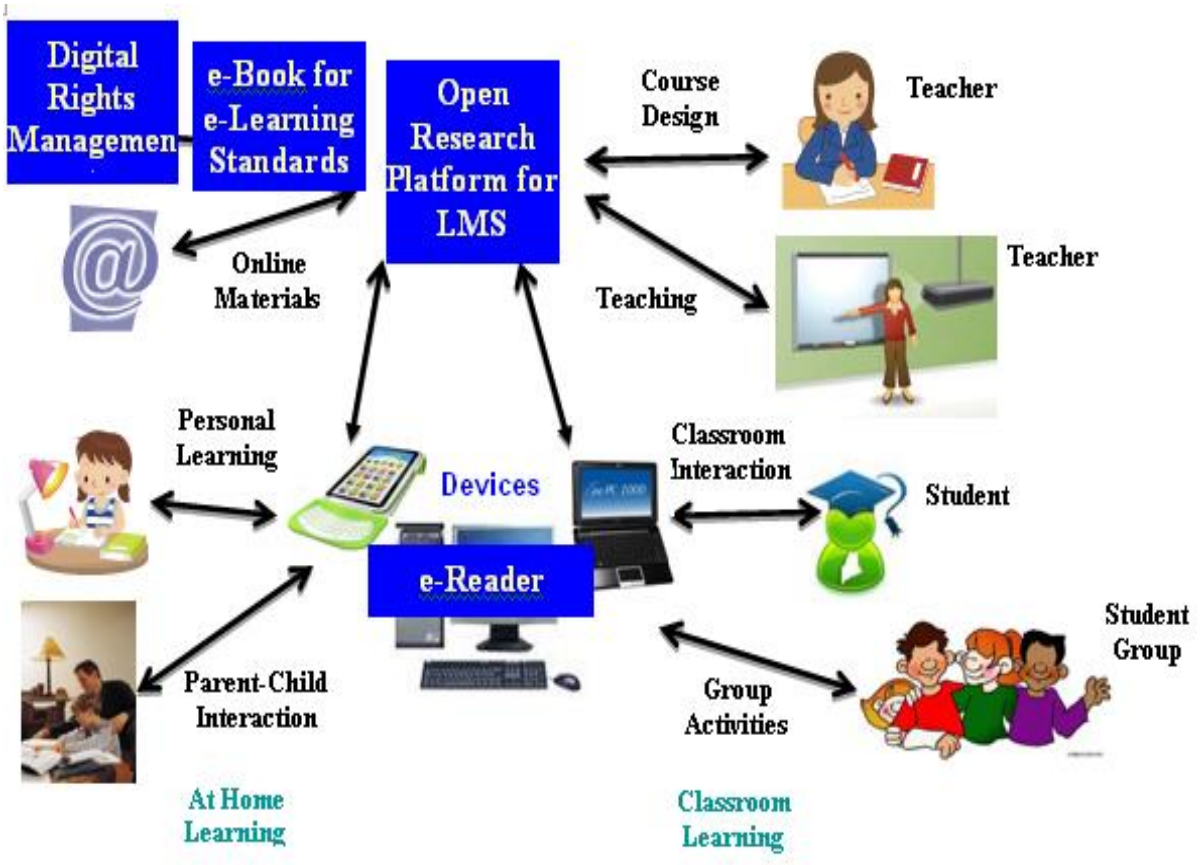

Fig.1: Benefits of the proposed System

Requirements

HARDWARE SPECIFICATION

VIRTUAL MEMEORY

PROCESSOR	: 32 BIT, Pentium – IV
RAM	: 256 MB
HARD DISK	: 40 GB
MONITOR	: SVGA Monitor (800 * 600RESOLUTIONS)
CLOCK SPEED	: 266 MHz
FLOPPYDRIVE	: 1.44 MB

ANDROID ENABLED SMARTPHONE

SOFTWARE SPECIFICATION

OPERATING SYSTEM	: Windows 2000/XP.
FRONT END	: Java, Net beans 6.9,Android SDK
MIDDLEWARE	: J2EE

Technologies To be Used

ORACLE SQL PLUS: It's a database that we would be using in our project for storing the information and users log in information.

APACHE TOMCAT SERVER: It's a central repository that would act as a central storage for all the files and allowing for storing and downloading the files.

Collections (TreeMap, ArrayList): Prior to Java 2, Java provided ad hoc classes such as **Dictionary, Vector, Stack**, and **Properties** to store and manipulate groups of objects. Although these classes were quite useful, they lacked a central, unifying theme. Thus, the way that you used Vector was different from the way that you used Properties.

The collections framework was designed to meet several goals.

- The framework had to be high-performance. The implementations for the fundamental collections (dynamic arrays, linked lists, trees, and hashtables) are highly efficient.
- The framework had to allow different types of collections to work in a similar manner and with a high degree of interoperability.
- Extending and/or adapting a collection had to be easy.

Towards this end, the entire collections framework is designed around a set of standard interfaces. Several standard implementations such as **LinkedList, HashSet,** and **TreeSet**, of these interfaces are provided that you may use as-is and you may also implement your own collection

JSP (Java Server Pages): JavaServer Pages (JSP) is a technology for developing web pages that support dynamic content which helps developers insert java code in HTML pages by making use of special JSP tags, most of which start with <% and end with %>.

A JavaServer Pages component is a type of Java servlet that is designed to fulfill the role of a user interface for a Java web application. Web developers write JSPs as text files that combine HTML or XHTML code, XML elements, and embedded JSP actions and commands.

Using JSP, you can collect input from users through web page forms, present records from a database or another source, and create web pages dynamically.

JSP tags can be used for a variety of purposes, such as retrieving information from a database or registering user preferences, accessing JavaBeans components, passing control between pages and sharing information between requests, pages etc.

Servlet: Java Servlets are programs that run on a Web or Application server and act as a middle layer between a requests coming from a Web browser or other HTTP client and databases or applications on the HTTP server.

Using Servlets, you can collect input from users through web page forms, present records from a database or another source, and create web pages dynamically.

Java Servlets often serve the same purpose as programs implemented using the Common Gateway Interface (CGI)

CSS (Cascading Style Sheet): **Cascading Style Sheets** (**CSS**) is a style sheet language used for describing the look and formatting of a document written in a markup language. While most often used to change the style of web pages and user interfaces written in HTML and XHTML, the language can be applied to any kind of XML document, including plain XML, SVG and XUL. Along with HTML and JavaScript, CSS is a cornerstone technology used by most websites to create visually engaging web pages, user interfaces for web applications, and user interfaces for many mobile application, shown in Fig. 2 below.

Android Application Developement

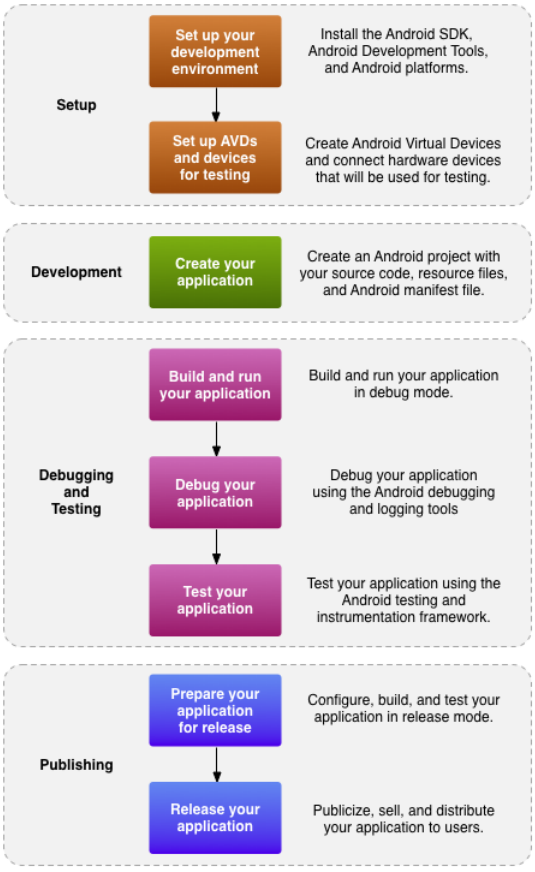

Fig. 2

PROBLEM STATEMENT

The main problem is to automate the whole learning process and ensuring that the performance of the project is up to the standard and also ensure that the database and the server are able to handle heavy user traffic.

To meet our Problem Statement we would be doing the following:

- There would be an Admin who would be responsible for our whole validation process and ensuring no unauthorized action takes place harming the entire system.
- To use the system User would also need to have an account to login and make use of the facilities.
- There would be a home screen where the user would have the option of choosing the menu option and proceed.
- Whole process of Content upload and download would be under the eye of administrator who would ensure that no unacceptable format is loaded by the user and also no wrong action is taken by the user.
- Apart from it we would also be providing an Android Application to provide Learning on the Go.

PROJECT DESIGNING AND ARCHITECTURE

DATA FLOW DIAGRAMS:

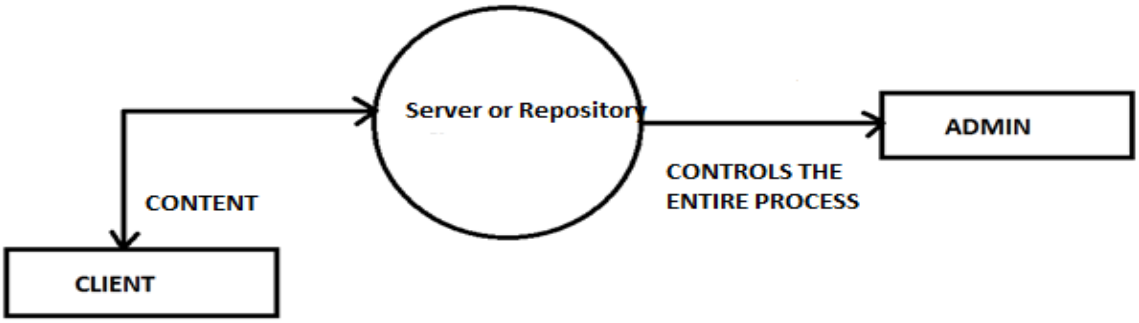

Fig. 3

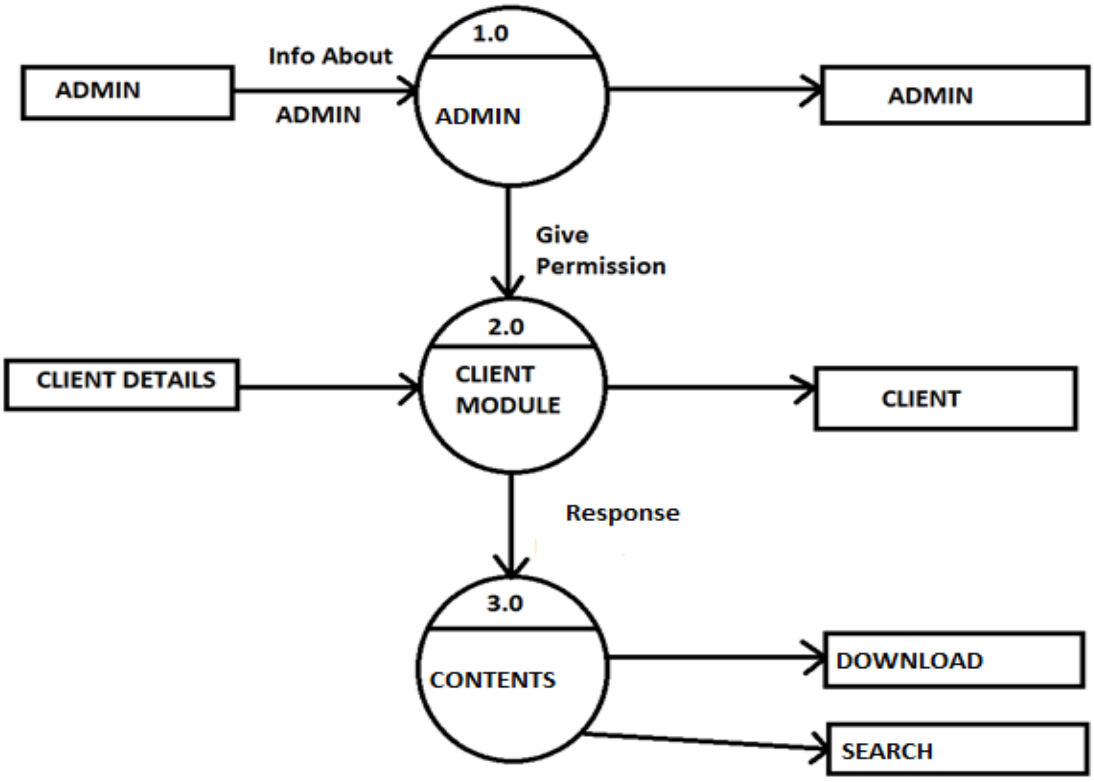
ADMIN
Info About
ADMIN
1.0
ADMIN
ADMIN
Give
Permission
CLIENT DETAILS
2.0
CLIENT
MODULE
CLIENT
Response
3.0
CONTENTS
DOWNLOAD
SEARCH

Fig. 4

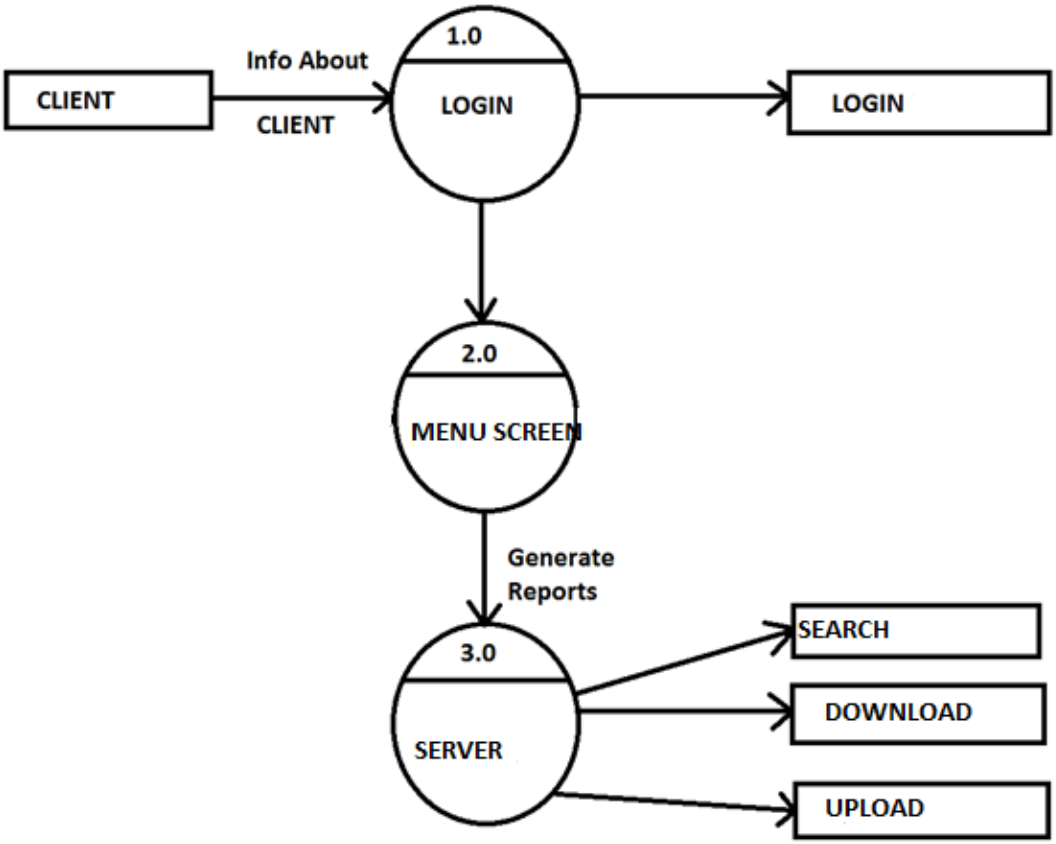
CLIENT
Info About
CLIENT
1.0
LOGIN
LOGIN
2.0
MENU SCREEN
Generate
Reports
3.0
SERVER
SEARCH
DOWNLOAD
UPLOAD

Fig.5

USE CASE DIAGRAMS

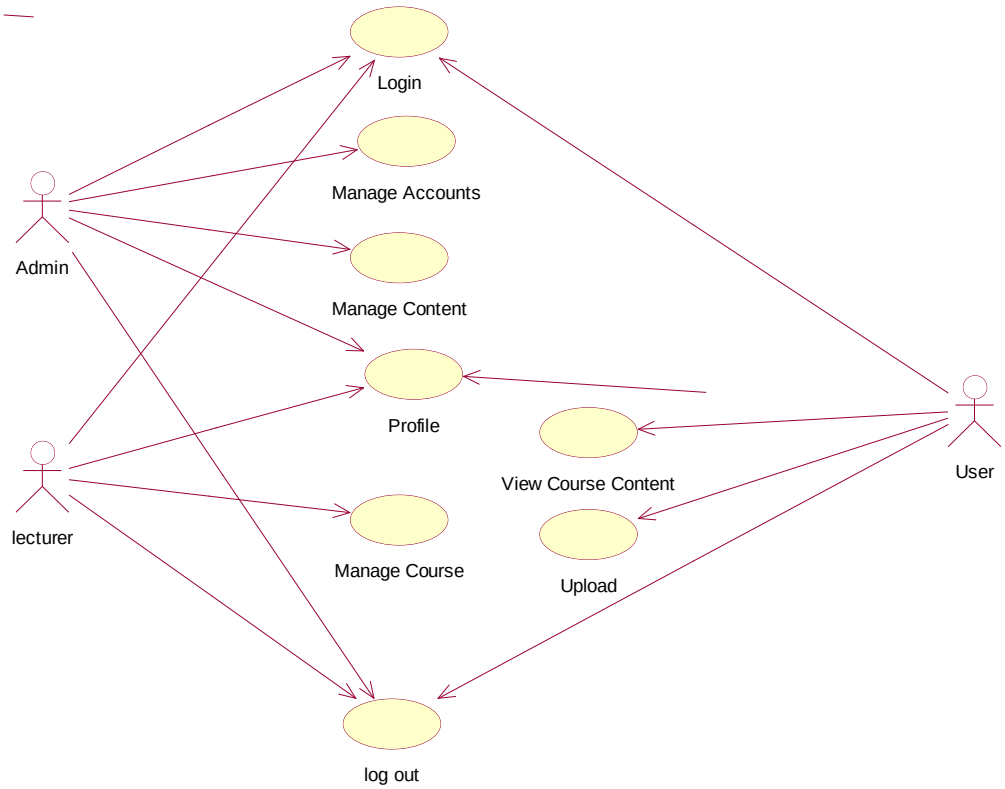

Fig.6

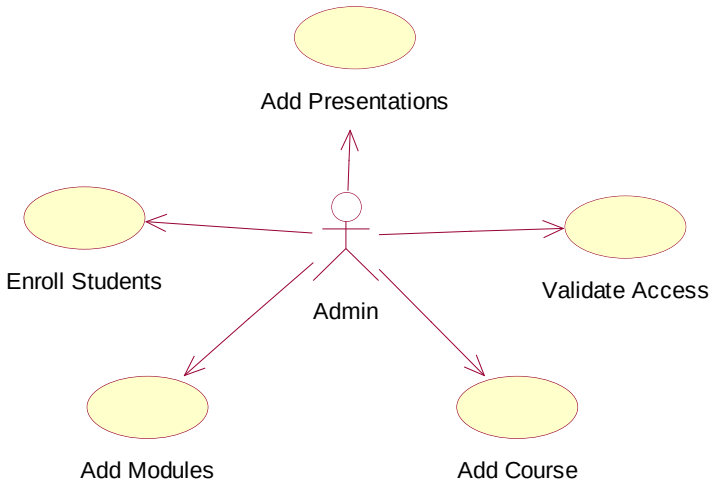

Fig. 7

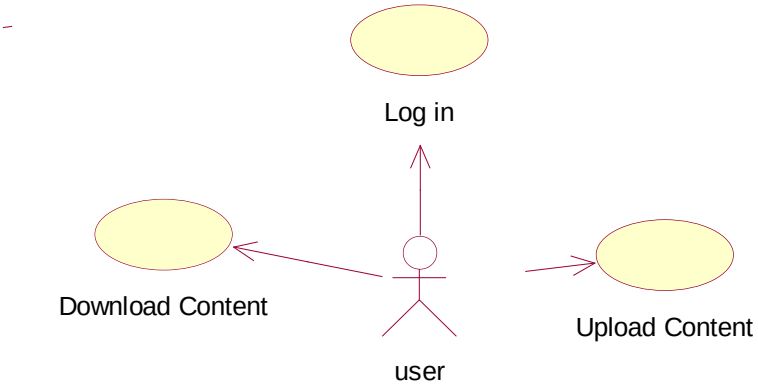
Log in
Download Content
Upload Content
user

Fig.8

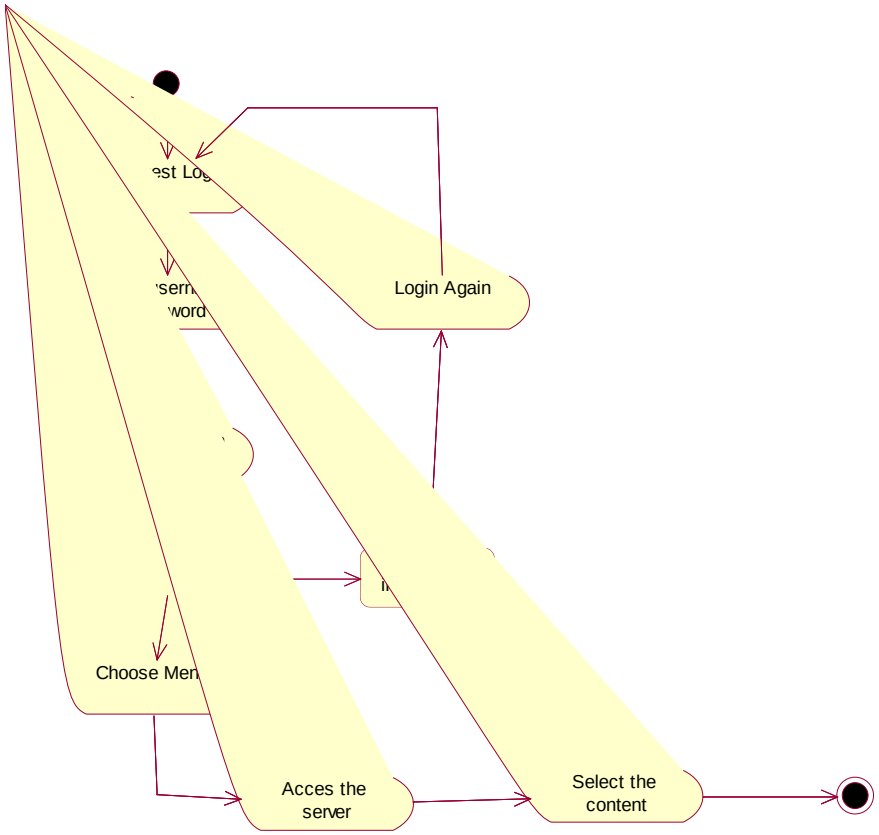
Login Again
Choose Men
Acces the server
Select the content

Fig.9

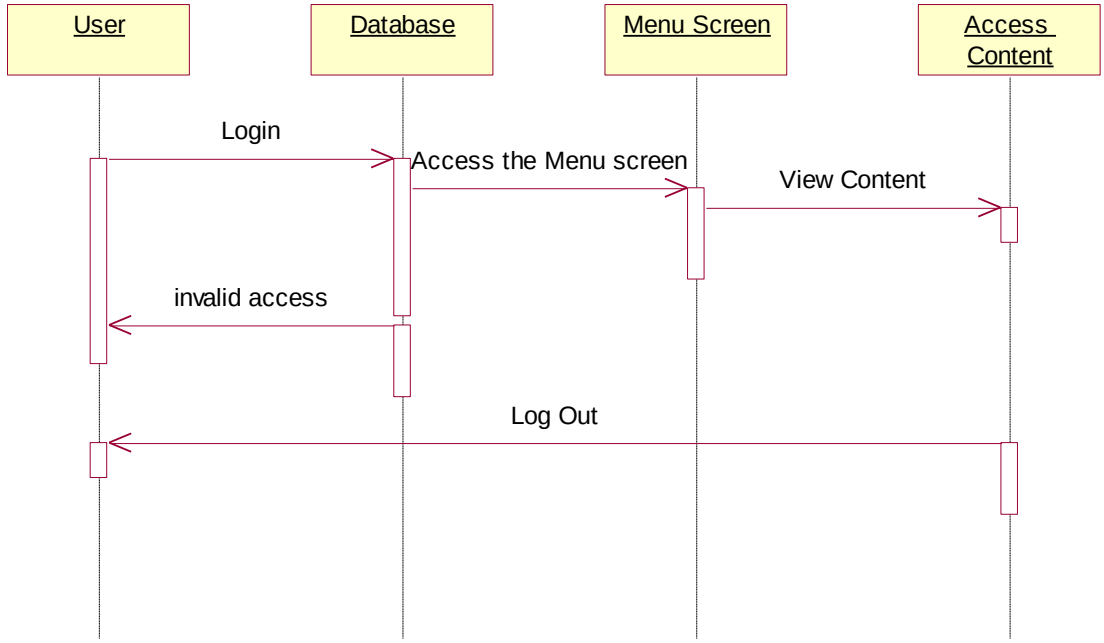
User
Database
Menu Screen
Access Content
Login
Access the Menu screen
View Content
invalid access
Log Out

Fig.10

TIMELINE

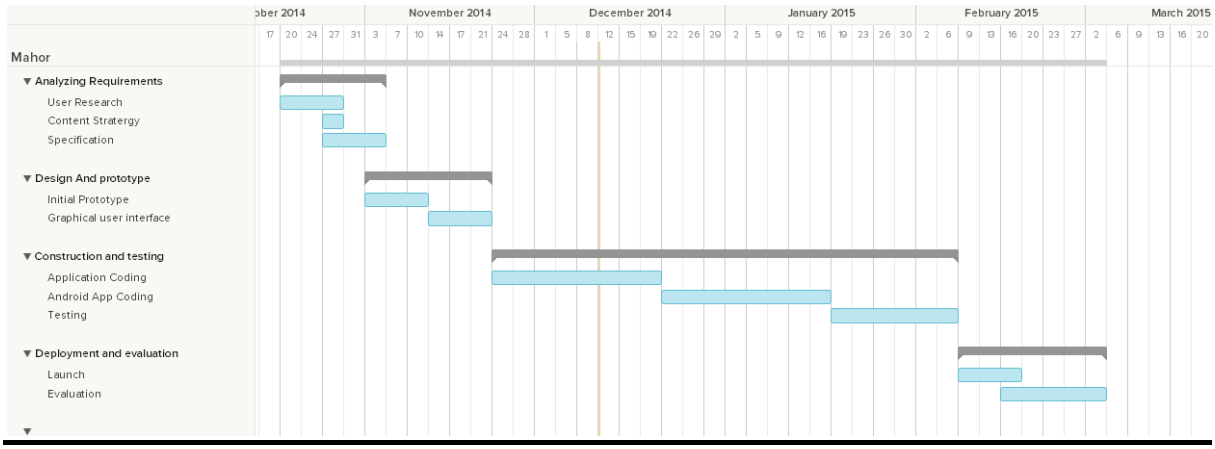

Fig. 11

We as a team are following the Gantt chart and are building the project module wise, one module at a time so as to focus on its functionality and not miss out on any feature and ensure its performing up to its full capability.

So **deliverables** from our side at this juncture are a few modules. Following are the snapshots of the modules

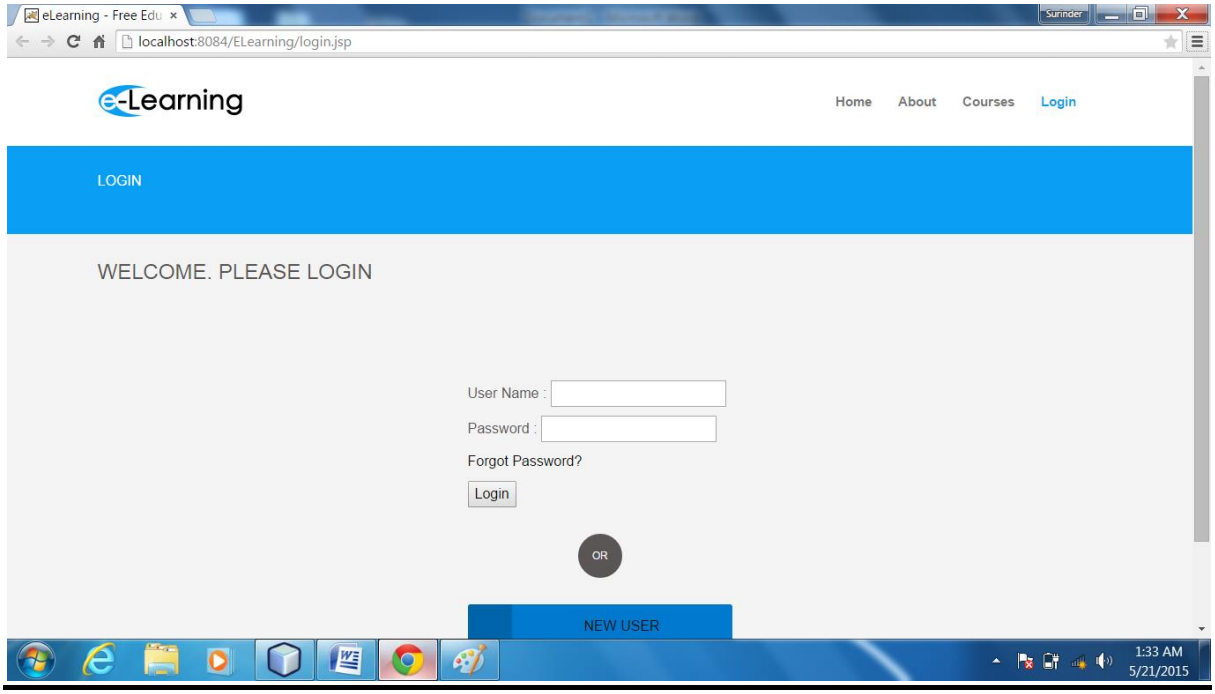
eLearning - Free Edu
localhost:8084/ELearning/login.jsp
e-Learning
Home
About
Courses
Login
LOGIN
WELCOME. PLEASE LOGIN
User Name :
Password :
Forgot Password?
Login
OR
NEW USER
1:33 AM
5/21/2015

Fig.12

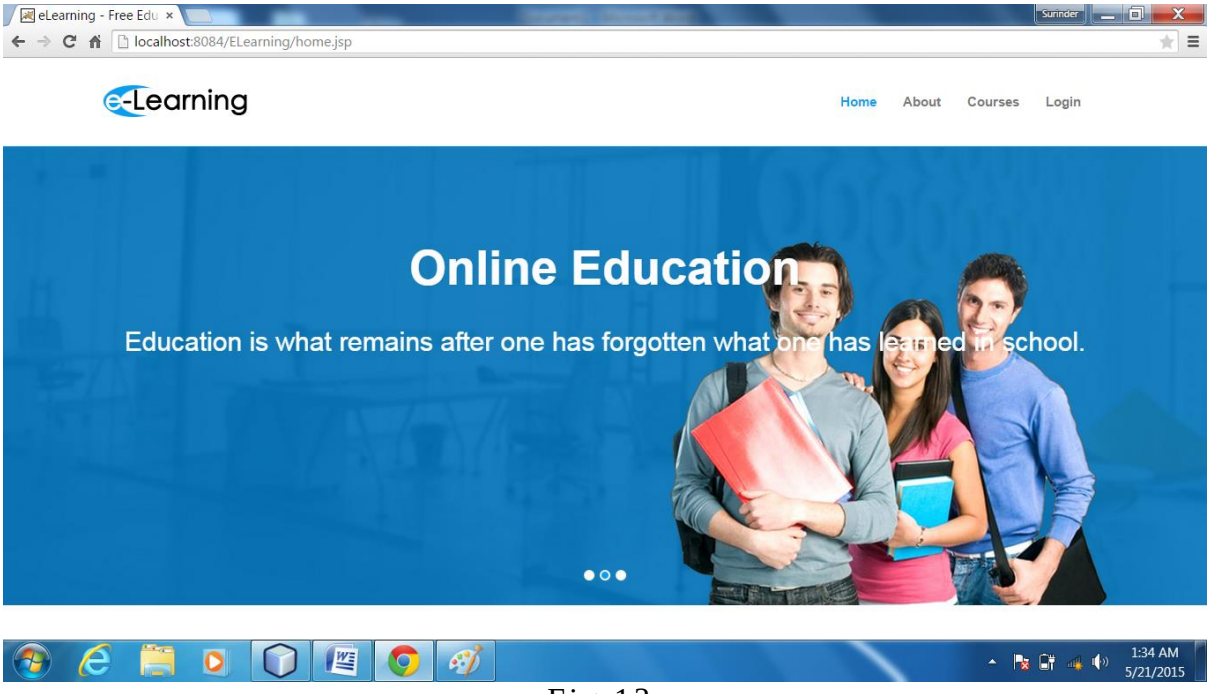
eLearning - Free Edu
localhost:8084/ELearning/home.jsp
e-Learning
Home
About
Courses
Login
Online Education
Education is what remains after one has forgotten what one has learned in school.
1:34 AM
5/21/2015

Fig 13

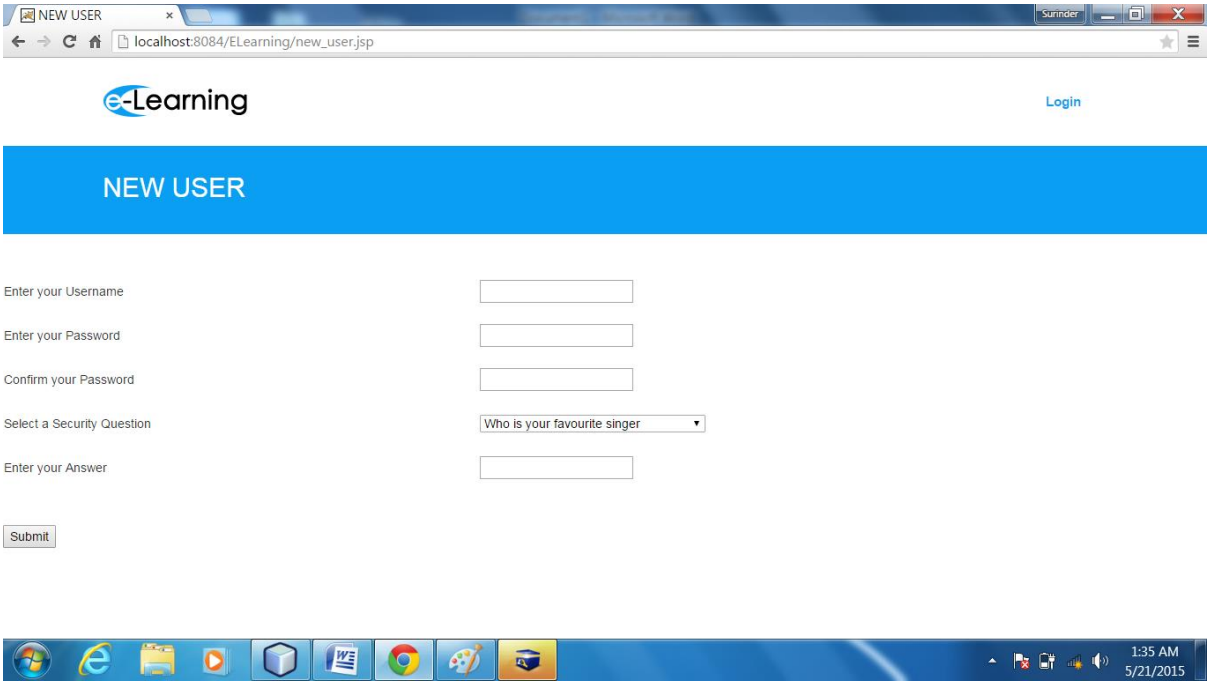
NEW USER
localhost:8084/ELearning/new_user.jsp
e-Learning
Login
NEW USER
Enter your Username
Enter your Password
Confirm your Password
Select a Security Question
Who is your favourite singer
Enter your Answer
Submit
1:35 AM
5/21/2015

Fig.14

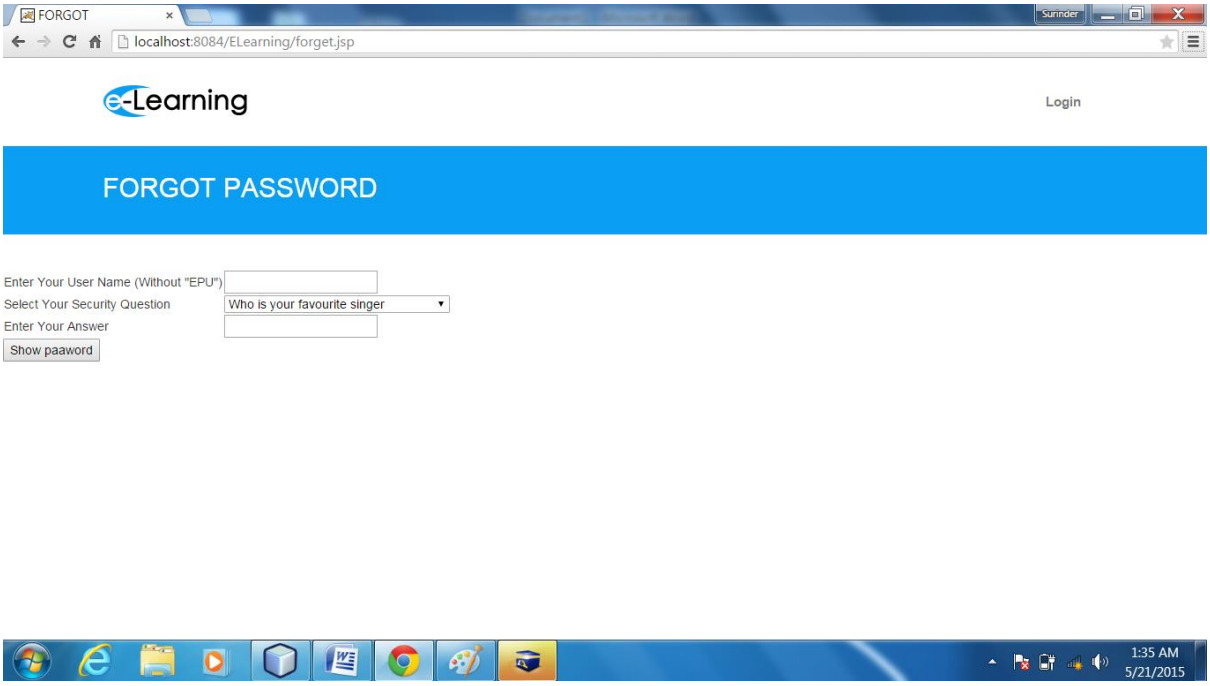
FORGOT
localhost:8084/ELearning/forget.jsp
e-Learning
Login
FORGOT PASSWORD
Enter Your User Name (Without "EPU")
Select Your Security Question
Who is your favourite singer
Enter Your Answer
Show paaword
1:35 AM
5/21/2015

Fig.15

DELIVERABLES

Project plan (Phase- I)

- Project purpose and scope.
- All steps/tasks, review and revision time frames for documentation including system documentation, technology research and infrastructure preparation.
- Estimated number of hours of work required from partner staff.
- Project GANTT charts to reflect project status.

Requirement specification document (Phase- II)

- System Description including functional requirements including system features accompanied by various requirement models to be used for detailed design (UML diagrams).
- Non-functional or technical requirements including interface requirements, performance, scalability and usability.

Executable code module (Phase- III)

- Transform the design of a system into code in a high level language.
- Code review after successful compilation and elimination of all syntax errors.
- Code walk through and code inspection.
- Providing internal documentation in the source code and stating assumptions specific to each testing phase are documented.

The Alpha Release (Phase- IV)

- Identifying defects through functional as well as structural testing.
- All System Integration Test Plans executed through successful completion.
- All User Acceptance Test Plans executed through successful completion.
- Unit Test Log free of errors.
- System Integration Test Log free of errors.
- User Acceptance Test Log free of errors.
- Unit Test Evaluation complete.
- System Integration Authorization is approved.

User Manuals (Phase -V)

- Providing external documentation through end user training documents.
- Detailed training plan and user training sessions.

Project Closeout Report (Phase -VI)

- Intended to provide an objective assessment of how the project evolved and assist future project team with learned lessons.
- It documents the favourable and unfavourable aspects of the project.
- It provides summary of the project team and the roles they played on the project.
- Quality Evaluation of criteria versus results.
- Maintaining test scripts that could ease and speed some repetitive testing effort and activities and releasing future versions of the product.

Release to Manufacturing (RTM) (Phase -VII)

- The software product ready to be delivered or provided to the customer for installation or distribution to the related hardware end user computers or machines.

List Of figures

REFERENCES

ONLINE RESOURCES

- **http://developer.android.com/develop/index.html-**Referred for learning about android app development.
- **http://slidenerd.com/category/android/: Reffered** for learning about database in android.
- **http://www.coreservlets.com/Apache-Tomcat-Tutorial/:For** learning about Apache TomCat server

OFFLINE RESOURCES

- Arora , Sumita, *Informatic Practises,Dhanpat Rai and co.,india, 2013*