

Software Requirements Specification

Document Information and Approvals:

Version History

Version #	Date	Author	Project Role
V1.0	9/01/2019	Alex	Business Architect

Document Approval

Approver Name	Project Role	Signature/Electronic Approval	Date
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Introduction

Purpose of this Document

The purpose of this document is to provide the detailed description of the requirements for the “Learning Management System” web application. It will explain the purpose and complete declaration for the development of the system. It will also illustrate the system requirement, assumptions, constraints and interfaces.

Scope

The scope of this document is to create the specification requirement document that would be referred by all the stakeholders of the project to ascertain their understanding of the specs requirement

Support Information

For any support, related queries please write into GIC's email ID.

GIC Company Background

GIC was founded in 2003 to provide “Application Management Services”, “Product Development” and other consulting services, which are designed to meet the specific needs of the enterprises with development and support requirements.

GIC works with many enterprises and currently serves customer from its offices in UK and India. GIC and its subsidiaries in Asia provide consulting services for Banking, Education services, Textiles and Healthcare services.

Project Objective

The project will allow the client to run the E-Learning System which would provide them an easy, intuitive, personalized and user customizable web interface for facilitating access to information and services that are of primary relevance and interests to the end users.

Application Modules in scope

- Online e-learning site

Application Modules not in scope

- This iteration would not include module developments like:
 - Discussion Forum
 - Mobile App
 - Online chatting system

Assumptions / Constraints

- Scope: If the project scope changes from the original baselined version then it would be covered in a separate Scope change document along with revision of this document as well. The changes in scope should be agreed and approved by all the stakeholders. Any changes in the scope may affect the project deadline and may incur charges.
- Software usage: The users are required to use the product when the minimum specified specifications are met to avoid any performance degradation to the product

Learning Management System

- Since the application is a web based portal hence there is a need for the browser. It will be assumed that the user possesses decent internet connectivity

Risks

- No known risks at this time

Overall Description

Product Perspective

The product is an e-learning system that the client has requested to be freshly created. This is a new requirement from the client which would need to be prepared from the start and deliver to the client. The client's requirement for preparing the e-learning system is that it could be used as a medium by the students, teachers and faculty alike to find all the services under one hood. The portal that would be developed should cater to the client's requests of having multiple services available to its end users.

Product Features

The client's requirement for the e-learning System (LMS) consisted of some features which have been listed below:

- Online learning
- Blog
- Shop
- Events

User Classes

The target audience that would use this portal are the end users, in this case the end users would be primarily the students that would be using the portal and its services. Also, other members like teachers, professors and public can leverage this tool for checking data like courses.

GIC's technical team would be the creating this portal and any changes in the requirement or next module addition / updates would be performed by the technical team. The client would need to share the requirements and the company would follow the complete set of procedures to ensure that the requirement is realized into actual working module for the end users.

User Documentation

Once the product is developed and fully tested, there would user documentation that would be shared with the client and its end users like user help manual and basic functions of each page. Also, an online help feature will be available in the portal that could be utilized in case any assistance is required for an action. Moreover, a knowledge transfer session would be scheduled for the first-time users of the portal.

Design and Implementation Constraints

The design includes user authentication which is set prior to using the application as the option to create a user and grant them the access to the site is not covered as part of this implementation.

There is a limit to the simultaneous usage of the application even though highest care has been taken that maximum number of users can use the system however it depends on the load balancer to even out the traffic and also user session timeout is set to 10 minutes of inactivity.

Long running queries like empty searches which takes processing time might result in some performance degradation and it can be avoided by providing good number of each criteria so that a section of data is searched through the database to provide the query result.

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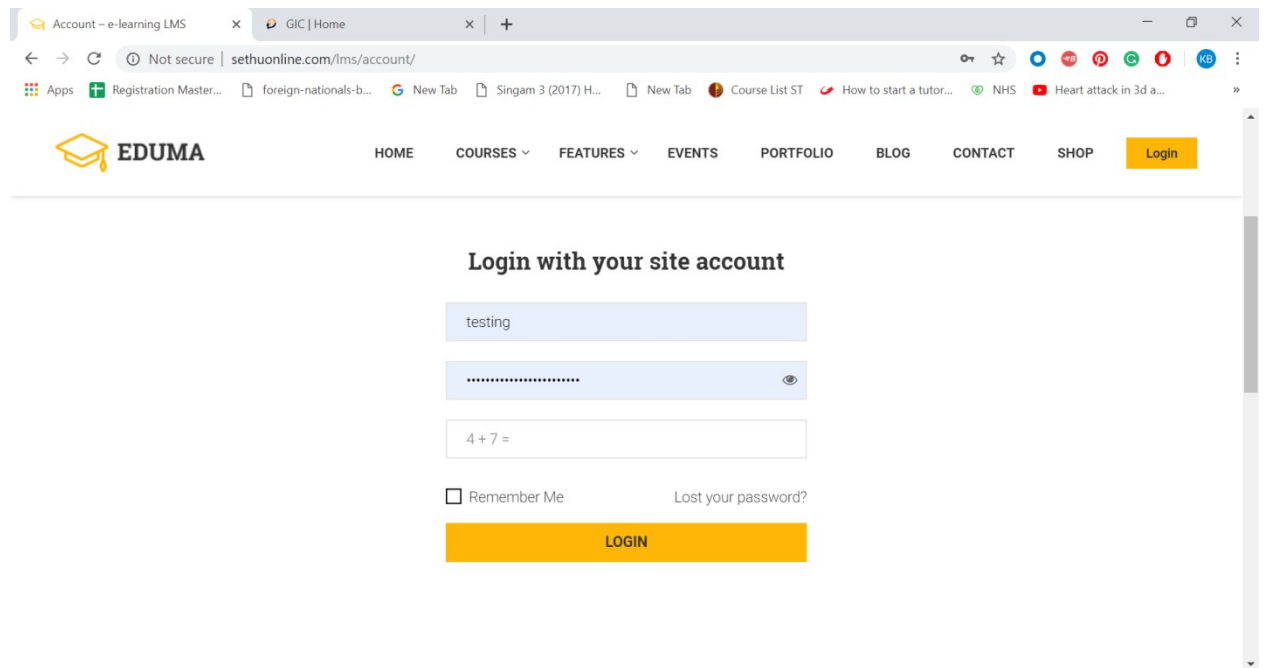
Users are requested to ensure that they log into the portal through a secure network and avoid using the portal from suspicious sources to avoid any security issues that may arise from non-suspecting sources.

Application memory usage is set to minimum however it is recommended that the users accessing the portal should have some free memory in the system through which they would access the portal.

Functional Requirements

a) Login

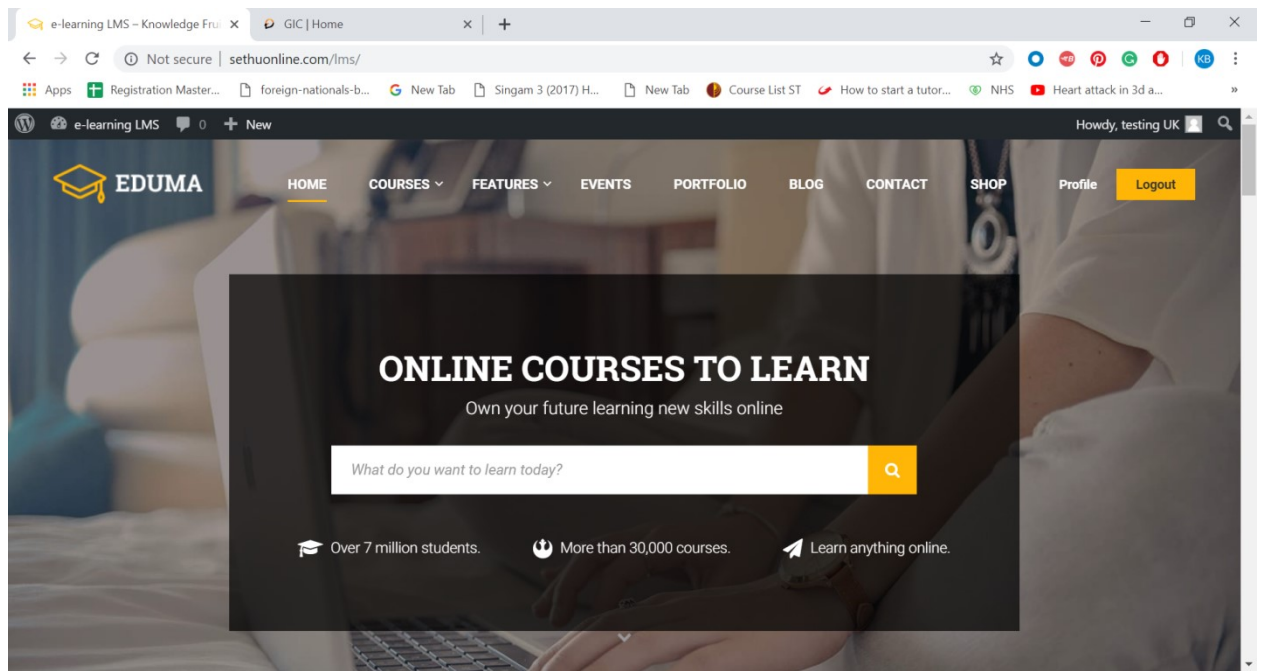
The section provides the functionality to login to the application. If the user has username and password and have been granted access then the user would be successfully able to login to the application. If the user has not been provided the access then the login page would display an error message mentioning the user does not have access. There is a Help menu for the user for reference. Also, a forgot password link is available for the user to reset their passwords.

A screenshot of a web browser displaying the login page of the EDUMA Learning Management System. The browser's address bar shows the URL 'sethuonline.com/lms/account/'. The page features a navigation bar with links for HOME, COURSES, FEATURES, EVENTS, PORTFOLIO, BLOG, CONTACT, and SHOP, along with a 'Login' button. The main content area is titled 'Login with your site account' and contains a login form. The form includes a username field with the text 'testing', a password field with masked characters and a toggle for visibility, a CAPTCHA field with the equation '4 + 7 =', and a 'Remember Me' checkbox. A 'Lost your password?' link is also present. At the bottom of the form is a prominent orange 'LOGIN' button.

b) Home Screen

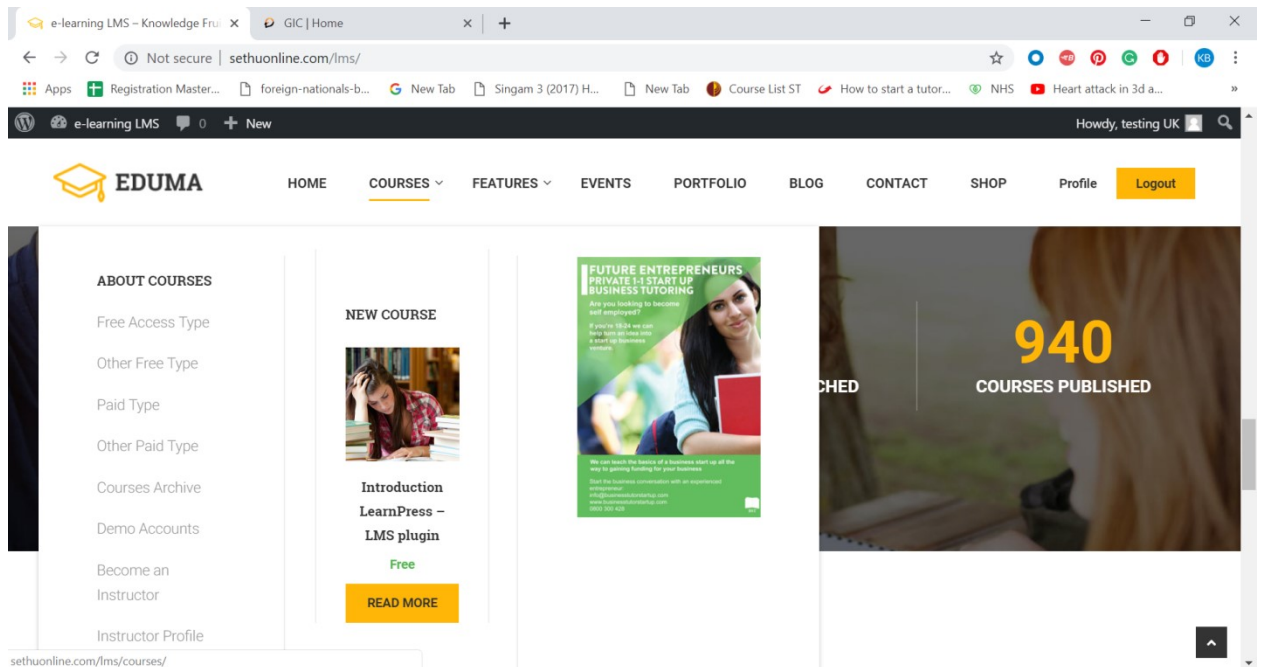
In this section, once the user is successfully authenticated via the login page they would be landing to the home page of the application. Here the user would have option to choose between the available menus on the left side of the screen. The user name, login date time and the logout option would also be visible to the user on the top right side of the screen.

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c) Courses

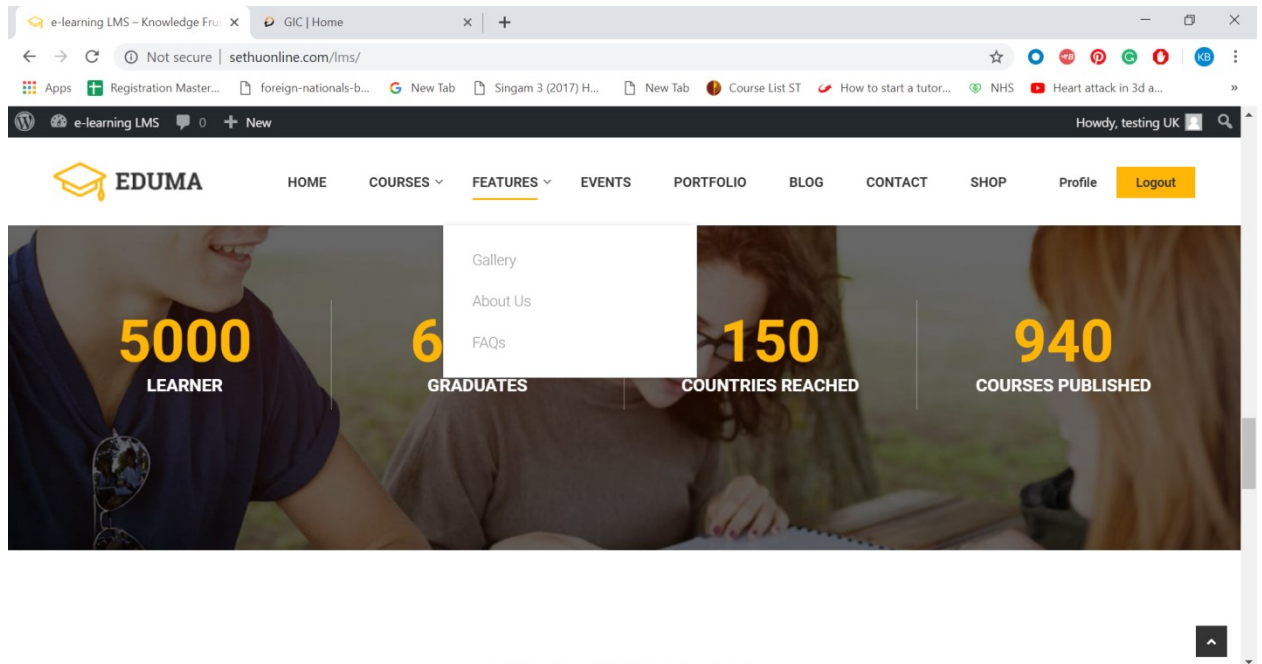
This section contains the details of the Courses available in the system. There is an option to check the available free, paid all types of courses (any subjects) and the subsequent grade received for it.



d) Features

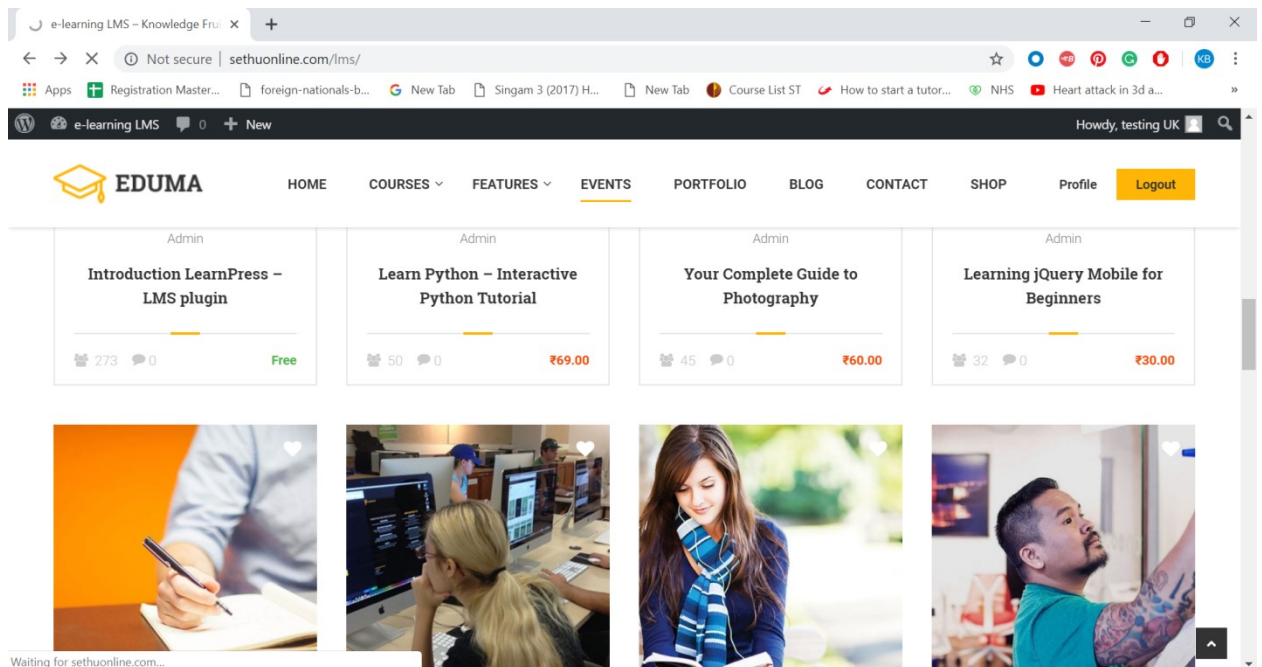
Learning Management System

This section displays all the important announcements, reminders, upcoming events, Any promotional offers, Frequently asked questions about the course. It has hyperlinks, messages notification panels, tickers running to display all the important and essential information for the users.



e) Events

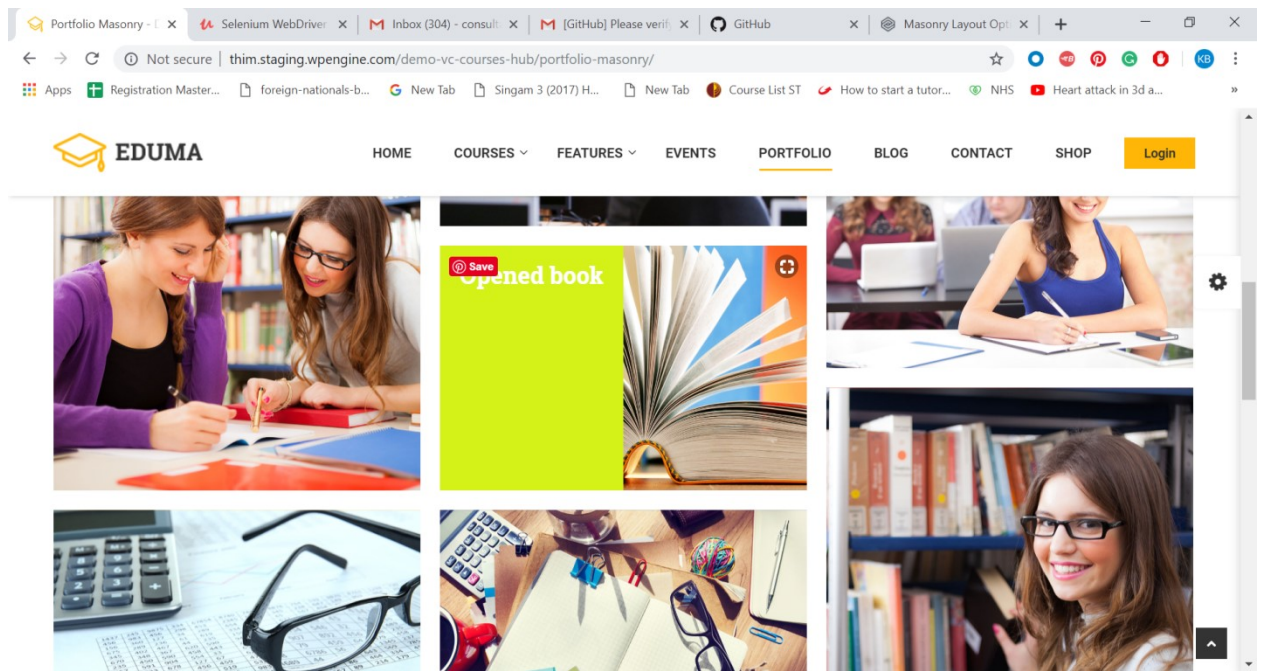
This section has the option to see the list of Events happening all over the time. There are three Features are available Upcoming, Happening, Expired.



f) Portfolio

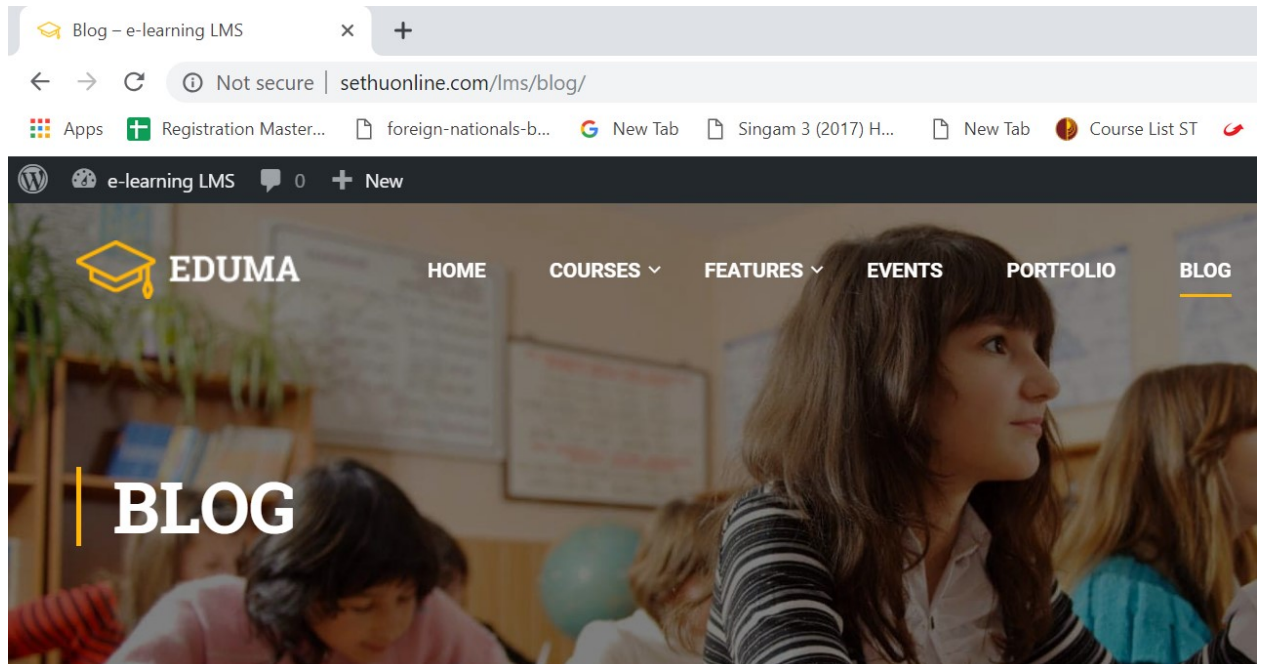
This section has the masonry option of setting your themes for your blog layout

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g) Blog

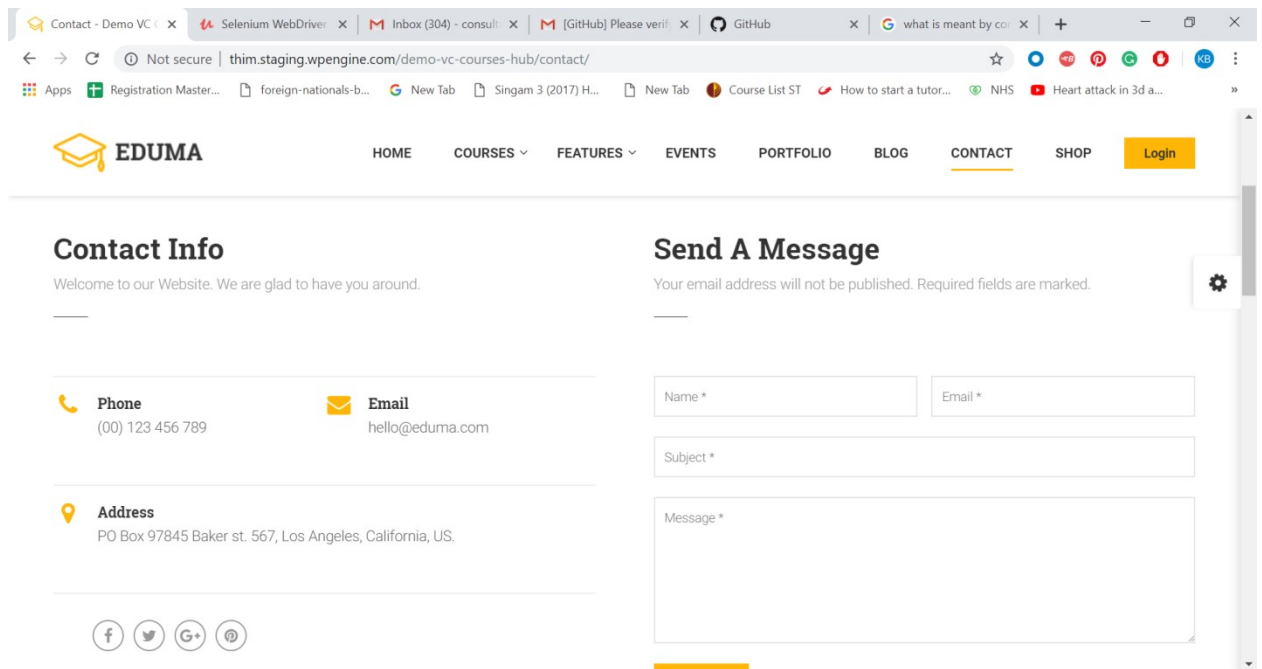
This section displays all the users' blogs. They can create their own blog to share their ideas, start writing, and posting their content. Easily share your posts on this site. Write, edit, and organize your blog.



h) Contact

This section displays the contact information like phone number, email, and address. Also, you can send a message.

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The screenshot shows the 'Contact' page of the EDUMA Learning Management System. The page has a navigation bar with links to HOME, COURSES, FEATURES, EVENTS, PORTFOLIO, BLOG, CONTACT (highlighted), and SHOP. A 'Login' button is also present. The main content area is divided into two sections: 'Contact Info' and 'Send A Message'.

Contact Info
Welcome to our Website. We are glad to have you around.

Phone
(00) 123 456 789

Email
hello@eduma.com

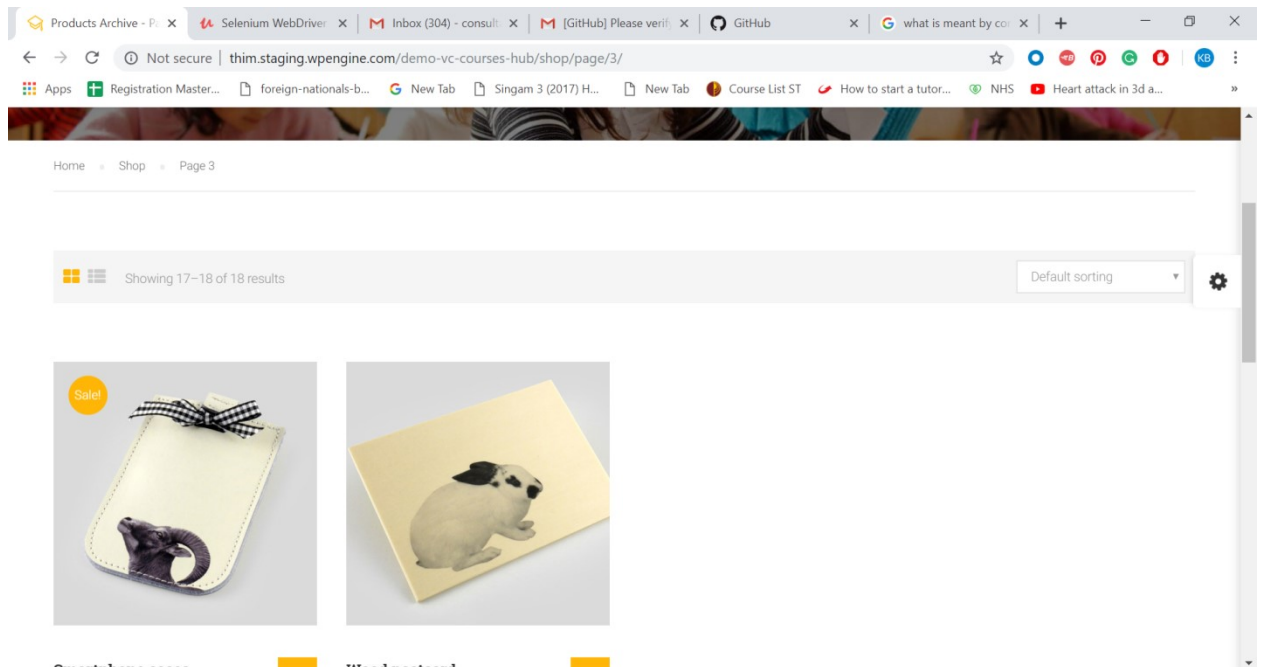
Address
PO Box 97845 Baker st. 567, Los Angeles, California, US.

Social media icons for Facebook, Twitter, Google+, and Pinterest are displayed at the bottom of the contact info section.

Send A Message
Your email address will not be published. Required fields are marked.

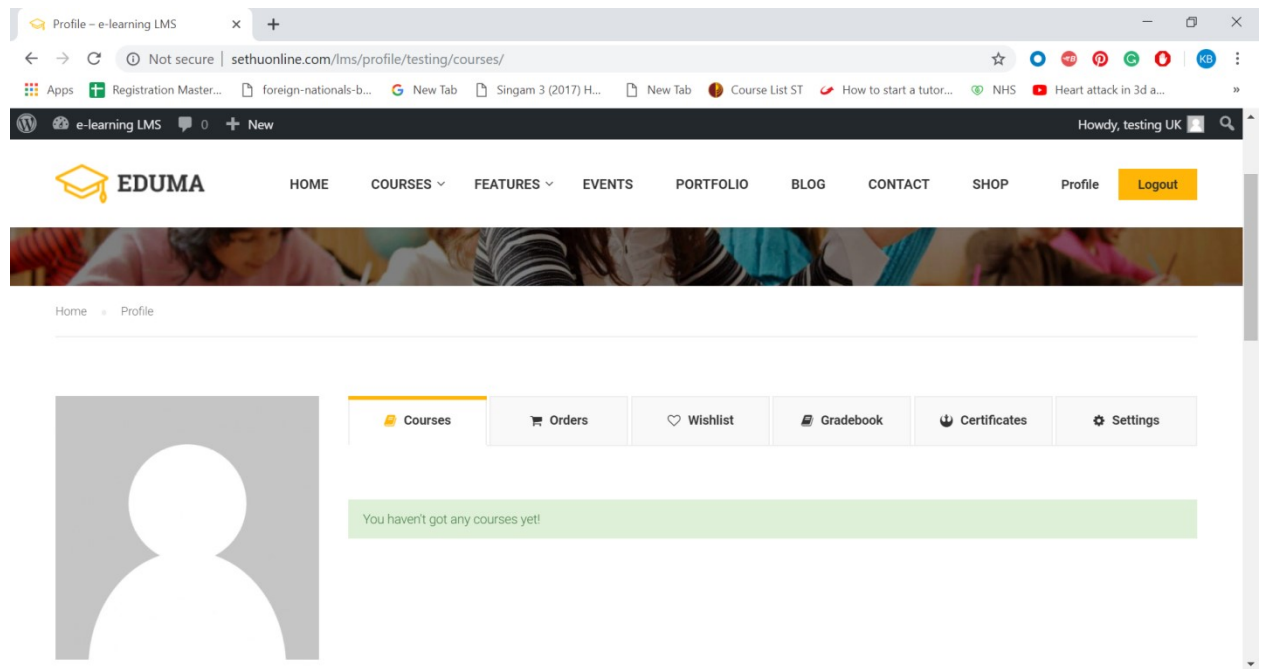
Form fields for 'Name *', 'Email *', 'Subject *', and 'Message *' are provided.

- i) **Shop**
This section has the option to Shop and add to the cart.



- j) **Profile**
This section has the option to see and update the profile details of the user.

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Non-Functional Requirements

The non- functional requirements include the following:

- a) Availability
The portal should be available or online without any issues 24*7 and should be down in the defined and agreed downtime period for maintenance activities
- b) Scalability
The Portal should have scalability so that any changes that might come in future are incorporated into the portal
- c) Reliability
The portal should be reliable in providing correct and precise information at any given time

Technical Requirements

The technical requirements are listed below:

- a) Security
The portal should have security features which include user authentication so that ay unauthorized access to the portal is avoided. Only those users that have access to the portal can login. This would be handled when developing the Login functionality
- b) Network
The portal would be available through internet and would have specific ports opened so that it is accessible to intranet of the institute where it would be hosted and used. This would ensure that adequate security protocols are adhered and avoid any case of unauthorized usage.
This would be handled when the servers are provisioned and the Network team or the technical team would be responsible to ensuring correct configurations are maintained. Traffic would be handled via the load balancers.
- c) Environment
There would be 3 different environments available for testing purposes which include – Development (DEV), Quality (QA) and Production (PR)
- d) Logging
User and system logging option would be available and the log purging duration would be set to 90 days. Logging would be essentials in maintaining, housekeeping and troubleshooting.

System Architecture

The portal would follow n-tier architecture and would mostly comprising of the following:

- User Access Layer**
This would be the UI or the front end which would be available to the end user to interact with the portal
- Business Process Layer**
This would comprise of writing the business logic so that the user defined actions are processed with the help of the code
- Data Access layer**
This would be responsible to taking the actions requested by the user and passing the parameters to the database to submit and / or fetch the data from the database and pass it to the user interface for the end user to see.
- Database**
The database would have the schema that would ensure that all the fields mentioned in the UI are mapped to its subsequent fields in database to maintain the data.

Architecture Diagrams

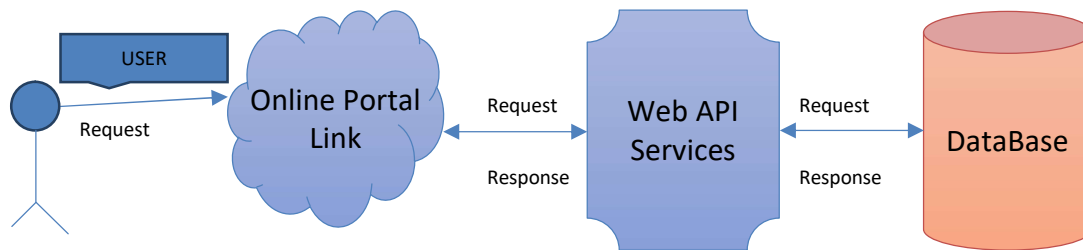


Fig I – Service Request Flow

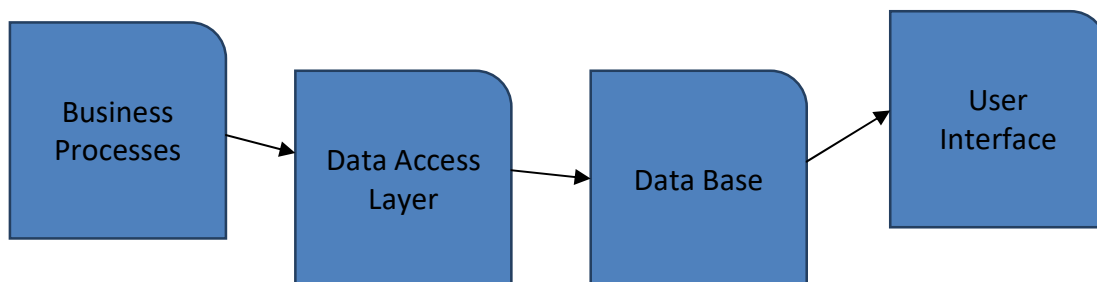


Fig II – N- tier Architecture diagram

Infrastructure Details

- Front End: HTML5/Angular JS
- Back End: Microsoft SQL Server 2016
- Middleware: Groovy Tomcat
- Servers: Windows Server 2016 or AWS
- Target Browsers: Internet Explorer, Chrome, Safari, Firefox
- Source Repository: GitHub

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Performance Specifications

- This application should be available online and be used using web browsers
- Since the application has graphs and data grid tables hence the response time for a particular data display should not be greater than 3-4 seconds for a good internet connection.
- The database should be scalable and must have the capability to hold more information in future as the data would be incremental. SQL server is scalable enough to meet this requirement.
- The number of connections to the system should not slow down the performance
- Error handling should be implemented and the system should be able to handle all the run time errors.