

L&D (Learning & Development Portal) -The Platform where Students can Learn and Instructors can teach through Technology

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Abstract- A software programme used for managing and delivering educational courses is known as a learning & Development system, or L&D. It is a client-server system that is often web-based and used to manage student enrollment, course content distribution, test and assignment administration, and associated record keeping. A L&D is especially helpful for training or course delivery that is conducted entirely online. This essay has two goals in mind. We start by providing a general overview of learning & Development systems, including things like their architecture and other features. This new L&D, also known as the Learning & Development Portal (L&D), implements the identified demands. Conversation, course registration, course building, quiz generating, and download capabilities are among L&D's primary features. The messaging system used by L&D makes it possible for students and instructors to communicate quickly. The system features an assessment engine that generates quizzes, Login.

Keywords—*website, L&D, students, Instructors, Courses.*

i.INTRODUCTION

The "learning and development system" was created in order to fix the issues with the practising manual system. The challenges that our existing system faces are intended to be overcome or, in some cases, at least somewhat lessened by this curriculum. This system is also designed to suit the demands of the company for effective and efficient operation.

The programme is kept as simply as possible to minimise data entry errors. Additionally, an error message is shown when you submit erroneous data. The user doesn't require any special training to use this system. This merely demonstrates how approachable it is. An e-learning management system can produce a free of errors, reliable, dependable, and rapid management system, as was before said. It might help the user focus on other tasks rather than keeping records. As a result, it will assist companies in making better use of their resources.

Managing student, assignment, quiz, class, and question data is a difficulty for every organisation, regardless of size. Because each e-learning

management system has a different set of assignment requirements, we developed special staff management solutions that are suited to your managerial needs. With the help of this, you can ensure that your business has the right amount of information and specifics for your long-term goals. This is meant to assist with strategic planning. Our systems are perfect for busy executives who are frequently on the road since they contain remote access features that will let you manage your workforce anytime you need to. These methods will ultimately help you manage resources with greater skill.

ii. Technologies used.

- i. **visual studio:** You may conveniently complete the full development process in one location with Visual Studio's all-inclusive solution. Coding changes, problem-solving, testing, using version control, and cloud application deployment are all included in this. Visual Studio gives you the tools and programming languages you need to advance from learning the basics of coding to working on a variety of projects.
- ii. **C#:** C# (pronounced "C Sharp") is a modern, object-oriented, and type-safe programming language. Programmers can make a variety of safe and dependable .NET-compatible apps with C#. Because C# has its roots in the C family of languages, programmers who are familiar with C, C++, Java, and JavaScript will feel right at home using it.
- iii. **SSMS:** Microsoft created the SQL Server Management Studio (SSMS) software programme, which is used for configuring, maintaining, and overseeing every component of Microsoft SQL server. It was introduced with the release of Microsoft SQL Server 2005 and is the replacement for the Enterprise Manager in SQL 2000 or before. The tool works with the server's assets and features and contains both script editors and graphical capabilities.
- iv. **MS SQL:** A relational database management system (RDBMS) called Microsoft SQL Server serves a wide range of business intelligence, analytics, and transaction processing applications in corporate IT environments.
- v. **Dev express:** DevExpress creates fully functional Presentation Controls, IDE Productivity Tools, Business Application Frameworks, and Reporting / Dashboard Systems for iOS and Android development.
- vi. **ASP.Net Framework:** An open-source framework for server-side web applications called ASP.NET is used in web development to create dynamic web pages. It was developed by Microsoft to let programmers to create dynamic web pages, applications, and services. The technology is known as Active Server Pages Network Enabled Technologies. Using HTML, CSS, and JavaScript, ASP.NET is a free online framework for creating outstanding websites and web apps. Additionally, real-time technologies like Web Sockets and Web APIs can be developed.
- vii. **Microsoft SQL Server Express** is a free to download, share, and use version of Microsoft's SQL Server relational database management system. It involves a database specifically targeted for embedded and smaller

scale applications. The product traces its roots to the Microsoft Database Engine (MSDE) product, which was shipped with SQL Server 2000. The "Express" branding has been used since the release of SQL Server 2005.

iii. Features in L&D

Scalability: This speaks to the flexibility with which computing techniques can be applied. A strong L&D system should be able to manage multiple users and large amounts of data at once. An online learning system needs to be expandable to accommodate the need for additional users.

Cost Efficiency: Cost efficiency is described as total estimated rate of e-Learning earnings. Managing course content, distributing instructional materials, completing quizzes, assignments, and assessments all help to lower the cost of learning.

Ease of Use: A good L&D system should make it possible for the user to enjoy using it. The system should be simple for the user to learn how to utilize. To improve user experience, the L&D interface needs to be effective.

Integration: In order for students to benefit the most from L&D, it needs to be able to share data. The L&D department should be able to connect to systems like talent management, workforce management, systems for managing client relationships, human resource information systems & safety portals in the organization. The same ought to be connected with the registration and admissions processes at universities.

Content Management: A decent learning management system ought to be able to handle content. The system should be able to link students to web information that is located on other systems and support the most recent standards for online education. The technology should

13 also make it possible to share learning resources across courses and organize learning into an efficient path.

Mobile Learning Support: Learning & Development systems should be supported with a mobile learning system. Content could be accessible to students via a tablet or smartphone. Therefore, the L&D should be created with movable screens that can accommodate various devices. By interacting more in online forums, users of mobile learning will be able to improve their social involvement.

Hybrid Education: Both learning techniques should be supported by L&D. The administration should be able to enroll students on their behalf or through self-registration. There should be a link between a learning path and offline learning.

Screening and Analysis: To provide flexible screening and evaluation, L&D should support pre-tests and post-tests. On the system, test banks should be accessible, and it should be possible to randomize numerous questions. Assessment portfolios with student responses should be kept in the system for however long is necessary.

Monitoring and Reporting: Report makes it possible for monitoring student progress. As a result, the system ought to be able to offer information on learning paths, test results, and, e-commerce reports in the case of businesses.

Security measures: An online learning management system must be safe to prevent hackers from breaking in and stealing any data. Data must be safeguarded, and permissions must be properly managed. By using secure sign-on methods, data integrity must be preserved and student privacy is protected.

Customization: An effective L&D framework makes it possible for the organization to brand itself. This makes

it easier to effectively interact with kids who wish to sign up for the systems.

E-Commerce: Those registering in the L&D should be able to use payment mechanisms supported by the LMS. These payments must be tracked and recorded by the system, and email notifications must be enabled.

Manageability: This is the capacity to strengthen the framework while maintaining a predictable level of learning. It calls for addressing the rising demands of students, expanding infrastructure requirements, financial limits, workforce development, and preparing personnel for both present and future issues.

Maintenance and Support: Universities may be more open to the introduction of complex LMS features if sufficient support and maintenance are provided. Maintenance through quick corrections and updating in "day in and day out" help for the workers, staff, and students are two criteria that guarantee the success of any L&D.

iv. Design.

Quiz Generation

The "Quiz Generator" tab of the quiz module can only be used to generate quizzes for a single course, which is available to instructors. The questions must be chosen by the instructor from the course's question bank.

`InstructorController = QuizGenerator()`, `SelectQuestions()` is the action function for the teacher. Exam scores are displayed at the conclusion of each quiz that students might take for the courses in which they have registered.

`StartQuiz()` is an action method in `StudentController`'s `Quiz()` action method.

Course Registration

Facilitators can view all courses from the database by choosing the 'courses list' link in the instructor module's navigation bar. `InstructionController = ShowAllCourses()` is the action method for this functionality. The instructors are manually assigned courses. By selecting "My Courses" on the left sidebar, the allocated courses are available to the instructor to view. The action method is defined in `InstructorController = ShowMyCourses()`. A course's questions can be shown, and new questions with alternatives can be added by the instructor. By selecting "Courses List" from the navigation bar, Additionally, students can view every course in the database. Selecting "My Courses" in the left menu will also display all of the student's previous courses. By selecting "My Courses" from the left sidebar, students can access all of the courses they have taken. Due to the drop-down list on the page, which users can select from, the student may also enrol in courses that he has not yet taken.

Login Information

Both teachers and students can access the system using the provided usernames and passwords. Each user has a unique username and password that they are free to change whenever they see fit. However, a user can only access the L&D after successfully registering.

Database Tables

Course assignment modules from the instructor and students are contained in the databases. The tables also include databanks of questions that are utilised for assessment as well as course information modules that students may need. Users' information, including names, registration numbers, passwords, and courses taken, is also stored in the database tables.

Design Details

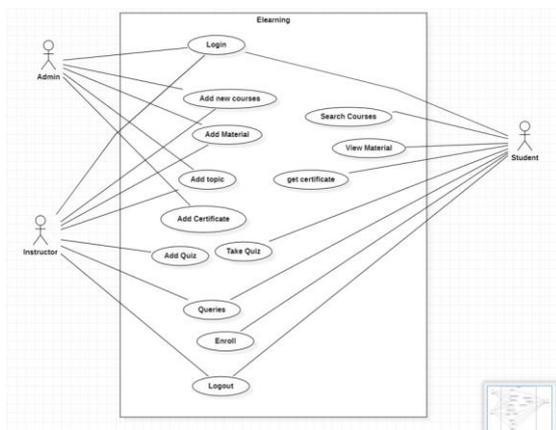
L&D portal was created using ASP.Net. It offered services that made it possible to build and run different web apps for learning and development (L&D) utilising server-side technologies.

The user interface was created using web form controls. The L&D portal's database was created using a SQL server.

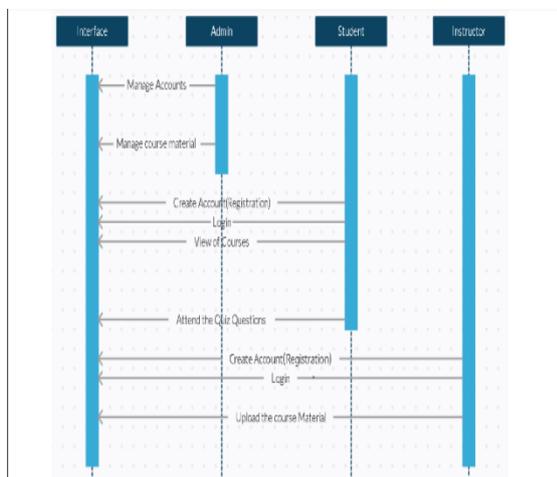
The database contains other helper objects in addition to tables that store the data's structure. The SQL server performs a number of tasks that improve the L&D portal's speed.

v. Implementation

USE CASE DIAGRAM

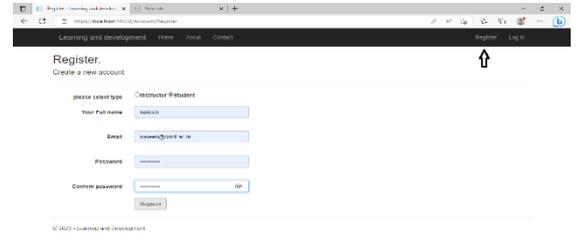


SEQUENCE DIAGRAM

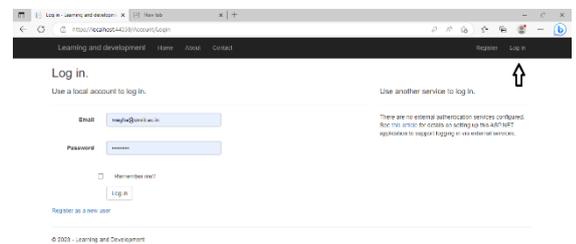


vi. OUTCOME

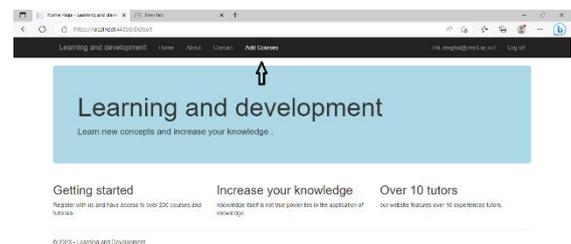
Register Page



Login Page



Home Page



vii. CONCLUSION

Our review of learning Development systems made it easier for us to pinpoint the software specs needed for a new L&D. These specifications cover creating a back-end system with SQL server and ASP.Net. As performance is improved through early binding, just-in-time functions, caching, and native optimisation, ASP.Net offers a number of benefits. Additionally, it simplifies straightforward processes like client identification and form submission.

We put the stated needs into practice with a fresh L&D called Learning & Development(L&D). We went into great detail on L&D's structure and features. The first benefit of our L&D is the existence of a course module and the fact that both the teacher and the student have access to all courses, including those that have not yet been finished. It also has a quizzes tool that lets the teacher make tests and the pupils see their outcomes.

The file upload and download modules provide for access to a range of file kinds, while the message module improves communication between the student and the instructor.

Finally, we determined key areas where L&D might be strengthened. These included adding forums, interacting with social media, enhancing L&D's security capabilities, and offering notifications or message alerts. Other recommendations for development included the inclusion of gamification, Hybrid Education, and video conferencing.

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