

# **A Project Report On**

## **Virtual-Study (E-Learning Management System)**

SUBMITTED IN THE PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF THE DEGREE

OF

**BACHELOR OF TECHNOLOGY**

IN

**COMPUTER SCIENCE & ENGINEERING**

Batch

(2022-2026)



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**JAN-JUNE, 2025**

## **Abstract**

Virtual-Study (E-Learning Management System) is a project which aims in developing an online application to provide Online Education, maintain Study Materials, keep Student records and collect Payments. This project has login features, Educator as Admin and Student as a user can login into their own portal separately. The Admin can login, through which the admin can monitor the whole system. This System can be used to search for course, add new courses, edit course, check payment status etc. The Admin after logging into his account can generate reports such as sell Report. The User can login into his account to follow course he purchased and can share his/her feedback.

Overall, this project of ours is being developed to help the Teacher as well as Students to provide E-Learning platform in the best way possible.

## **Acknowledgment**

The authors are highly grateful to **Dr. M S SAINI**, Director, Global Group of Institutes, Amritsar, for providing this opportunity to carry out the project at GGI, Amritsar.

The constant guidance and encouragement received from **ER. TEJINDERDEEP SINGH** (HOD, CSE/IT Dept.) and Training Coordinator has been of great help in carrying out the project work and is acknowledged with reverential thanks.

The authors would like to express a deep sense of gratitude and thanks profusely to without the wise counsel and able guidance, it would have been impossible to complete the report in this manner.

The authors express gratitude to other faculty members of Department of Computer Science Engineering, Global Group of Institutes Amritsar, for their intellectual support throughout the course of this work.

Finally, the authors are indebted to all whosoever have contributed in this report work.

# Table of Contents

## Title

Abstract

Acknowledgement

## Chapter 1: Introduction

1.1 Overview

1.2 Objectives

## Chapter 2: Software Description

2.1 PHP

2.2 MySQL

2.3 HTML

2.4 CSS

2.5 JavaScript

2.6 Bootstrap

2.7 Visual Studio Code

## Chapter 3: System Analysis

3.1 Identification of Need

3.2 Software Requirements Specification (SRS)

3.2.1 Data Gathering

3.2.2 Feasibility Study

3.2.3 Software Process Model

3.3 Data Flow Diagrams (DFD)

3.3.1 DFD 0 Level

3.3.2 DFD 1 Level

3.3.3 DFD 2 Level

## Chapter 4: Tool and Environment

4.1 Hardware Requirements

4.2 Software Requirements

## Chapter 5: project category

## Chapter 6: Implementation

## Chapter 7: Input/Output Modules of the Project

## Chapter 8: Future Scope

## Chapter 9: Conclusion

## *1. Introduction*

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It is difficult to find time for the training necessary to gain new skills and boost your productivity. With **Virtual-Study** you're able to learn at a pace that is comfortable for you. **Virtual-Study** is a powerful Learning Management System implementing the latest trends in e-learning. E-Learning is learning utilizing electronic technologies to access educational curriculum outside of a traditional classroom. In most cases, it refers to a course, or program delivered completely online. We define e-Learning as courses that are specifically delivered via the internet to somewhere other than the classroom where the professor is teaching. E-Learning has been proven to be a successful method of training and education is becoming a way of life for many citizens in Nepal and across the World. Virtual-Study Publisher is a professional team development environment for the rapid development of e-courses by their own.

Any Person who wants to gain new skills can join Virtual-Study. A Person/Student/Learner has to fill up registration form which is absolutely Free. Once Learner registers successfully, they will get UserID/Email and Password for login into Student/Learner Panel. After login they can buy any course as per their choice or requirement which is available in Virtual-Study. They can watch purchased video courses online and can submit their feedback. As well they can update their profile and can change password. Admin of this system will upload new courses which will be available for everyone. Admin can delete or edit student/learner details. Admin can modify course details and can check sells report.

### **1.1 Overview**

It is difficult to find time for the training necessary to gain new skills and boost your productivity. With **Virtual-Study** you're able to learn at a pace that is comfortable for you. **Virtual-Study** is a powerful Learning Management System implementing the latest trends in e-learning. E-Learning is learning utilizing electronic technologies to access educational curriculum outside of a traditional classroom. In most cases, it refers to a course, or program delivered completely online. We define eLearning as courses that are specifically delivered via

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Any Person who wants to gain new skills can join Virtual-Study. A Person/Student/Learner has to fill up registration form which is absolutely Free. Once Learner registers successfully, they will get UserID/Email and Password for login into Student/Learner Panel. After login they can buy any course as per their choice or requirement which is available in Virtual-Study. They can watch purchased video courses online and can submit their feedback. As well they can update their profile and can change password. Admin of this system will upload new courses which will be available for everyone. Admin can delete or edit student/learner details. Admin can modify course details and can check sells report.

## **1.2 Objectives**

A flexible web-based learning experience allows you to go through a guided curriculum or choose lessons on an as-needed basis. Following are the main objectives: -

- Ability to recall previously learned material – Students/learners can watch video courses as many times as they need. If they forgot something during the course they can come back and watch that specific part anytime.
- Creative way to present lesson – It is very creative way to present lectures. It will surely enhance teaching ability of tutor.
- Low Cost – As nobody needs to travel or rent anything so it's very cost efficient.
- High Quality – As tutor do not has time boundation so he can teach in his own comfort time.
- Learn anytime from anywhere – Students/Learners can start learning anytime from anywhere they just required internet connection with a compatible device.
- Improve course quality according to learner's feedback – Tutor can improve their course as per student's feedback. It will help tutor to improve their ability to teach.
- Earn Money Online– As courses are paid so we can say it's an online teaching business which has no boundaries means students/learners can join from across the world so this system can make good business with good quality.

## *Chapter 2: Software Description*

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### **2.1 PHP**

PHP is an open-source language and all its components are free to use and distribute. PHP is server-side scripting language. It is embedded in HTML source code. PHP supports all major web servers such as Apache, Microsoft IIS and Netscape etc. All the major database such as MySQL, PostgreSQL, Oracle, Sybase, Microsoft SQL Server is supported by PHP. Following is some major advantage: -

- Friendly With HTML - PHP and HTML are interchangeable within the page. You can put PHP outside the HTML or inside.
- Interactive Features - PHP allows you to interact with your visitors in ways HTML alone can't.
- Top-Notch Online Documentation - The PHP documentation is the best on the web. Hands down.
- Compatible With Databases - A good benefit of using PHP is that it can interact with many different database languages including MySQL.

### **2.2 MySQL**

MySQL is the most popular open-source relational database management system. It is one of the best RDBMS being used to develop web-based applications. It is easy to use and fast RDBMS. Following is the top reason to use MySQL: -

- High Performance
- Robust Transactional Support
- Strong Data Protection
- Open-Source Freedom

### **2.3 HTML**

Hypertext Markup Language (HTML) is the standard markup language for creating web pages and web applications. With Cascading Style Sheets (CSS) and JavaScript, it forms a triad of cornerstone technologies for the World Wide Web. Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

## **2.4 CSS**

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language like HTML. CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript.

CSS is designed to enable the separation of presentation and content, including layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple web pages to share formatting by specifying the relevant CSS in a separate .css file, and reduce complexity and repetition in the structural content.

## **2.5 JavaScript**

JavaScript often abbreviated as JS, is a high-level, interpreted programming language. It is a language which is also characterized as dynamic, weakly typed, prototype-based and multi-paradigm.

## **2.6 Bootstrap**

Bootstrap is an open-source toolkit for developing with HTML, CSS, and JS. Quickly prototype your ideas or build your entire app with our Sass variables and mixings, responsive grid system, extensive prebuilt components, and powerful plugins built on jQuery. Build responsive, mobile-first projects on the web with the world's most popular front-end component library.



## **2.7 Visual Studio Code**

Visual Studio Code was announced on April 29, 2015 by Microsoft at the 2015 Build conference. A Preview build was released shortly thereafter.

On November 18, 2015, Visual Studio Code was released under the MIT License and its source code posted to GitHub.

On April 14, 2016, Visual Studio Code graduated the public preview stage and was released to web. Visual Studio Code is a source code editor developed by Microsoft for Windows, Linux and macOS. It includes support for debugging, embedded Git control, syntax highlighting, intelligent code completion, snippets, and code refactoring. It is also customizable, so users can change the editor's theme, keyboard shortcuts, and preferences. It is free and open-source, although the official download is under a proprietary license.

## Chapter 3: System Analysis

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System Analysis is the process of studying a procedure in order to identify its goals and purposes and create systems and procedures that will achieve them in an efficient way. It is a problem-solving technique that improves the system and ensures that all the components of the system work efficiently to accomplish their purpose.

A systems analyst researches problem, plans solutions, recommends software and systems, and coordinates development to meet business or other requirements. The main goal of this system analyst is to collect different data from different site, process these data and generate progress as well as daily report.

System analyst operates in a dynamic environment where change is a way of life. The environment may be a business firm, a business application, or a computer system. to construct a system the following key elements must be considered: -

- **Input:** Input is what data the system receives to produce a certain output.
- **Output:** What goes out from the system after being processed is known as Output.
- **Processing:** The process involved to transform input into output is known as Processing.
- **Control:** In order to get the desired results, it is essential to monitor and control the input, Processing and the output of the system. This job is done by the control.
- **Feedback:** The Output is checked with the desired standards of the output set and the necessary steps are taken for achieving the output as per the standards, this process is called as Feedback. It helps to achieve a much better control in the system.
- 

### 3.1 Identification of Need

The old manual system was suffering from a series of drawbacks. Since whole of the system was to be maintained offline at one place only, the ease of service was not there. The information (lectures) was never used to be in a systematic order. It was not possible to provide service for large community from different places at the same time. It was seriously affecting the business. For this reason, we have provided features present system is automated the whole procedure. Present system can be spread to the world so it would be beneficial for the business.

## **3.2 Software Requirements Specification (SRS)**

A software requirements specification is a document that captures complete description about how the system is expected to perform. It is usually signed off at the end of requirements engineering phase.

### **Product perspective**

The software product is a Web Application. The application will be made up of two parts, one administrator who has all the rights and the other user who has limited rights to handle the application. The two users of the system, namely the Teacher/Educator (Admin) and Student/Learner (User) interact with the system in different ways.

### **Product Functions**

First of all, it will authenticate the user whether he is Educator (Admin) or Learner (User) the unauthorized person can't get access to the application.

### **Safety Requirements**

All the data will be saved to database for safety purpose so there will be no data loss. These data can be accessed only by an authorized person so data theft is also not possible in this application.

### **Security Requirements**

For preventing unauthorized access to the application, this application has login feature so only granted user can access with defined rights.

### **3.2.1 Data Gathering**

Data collection is the systematic approach to gathering and measuring information from a variety of sources to get a complete and accurate picture of an area of interest. Data collection enables a person or organization to answer relevant questions, evaluate outcomes and make predictions about future probabilities and trends.

### **3.2.2 Feasibility study**

Feasibility study means to check whether the project is feasible or not, that means possible or not. Some feasibility study regarding this project is as follows: -

#### **Economic Feasibility**

The project has shown the economic feasibility by the study of the fact that by using this software the increased number of the users can be given service effectively and efficiently and can save a lot time and saving time means saving money. The cost and benefit analysis has shown that cost that have incurred in developing the project is less than the benefits that the project is going to provide once it is developed, so this project has passed the feasibility test.

#### **Technical Feasibility**

Technical feasibility centers on the existing computer system (Hardware, Software etc.) and to what extent it supports the existing system. As the existing system computer system is viable so there is no matter of technical feasibility that is the system is technically feasible. In this type of feasibility study, it is checked whether there is a need of new hardware/software or not. What are the basic requirements of the project? If there is need then how it can be fulfilled. In this context, this project doesn't need any special hardware or software

#### **Behavioral Feasibility**

The Users are also interested in this project, as it will help them to do work with ease and efficiently without complexity, so they supported the development of this project with full enthusiasm. This shows the behavioral feasibility of the project.

#### **Time Feasibility**

It is the determination of whether a proposed project can be implemented fully within stipulated time frame. The project was decided to be done in three months and was thought to be feasible.

#### **Operational Feasibility**

In this feasibility study it is determined whether there is need of well qualified operator or simple user. Is there need to train the operator or not? This project is supporting the User-

friendly Web application; hence operating this project is so simple. Even a person who has a little knowledge of computer can easily handle this well. There is no need of trained operator.

### **3.2.3 Software Process model**

The Software Process Models are the various processes or methodologies that are being selected for the development of the project depending on the project's aims and goals. There are many development life cycle models that have been developed in order to achieve different required objectives. The models specify the various stages of the process and the order in which they are carried out.

The selection of model has very high impact on the testing that is carried out. It will define the what, where and when of our planned testing, influence regression testing and largely determines which test techniques to use.

Choosing right model for developing of the software product or application is very important. Based on the model the development and testing processes are carried out.

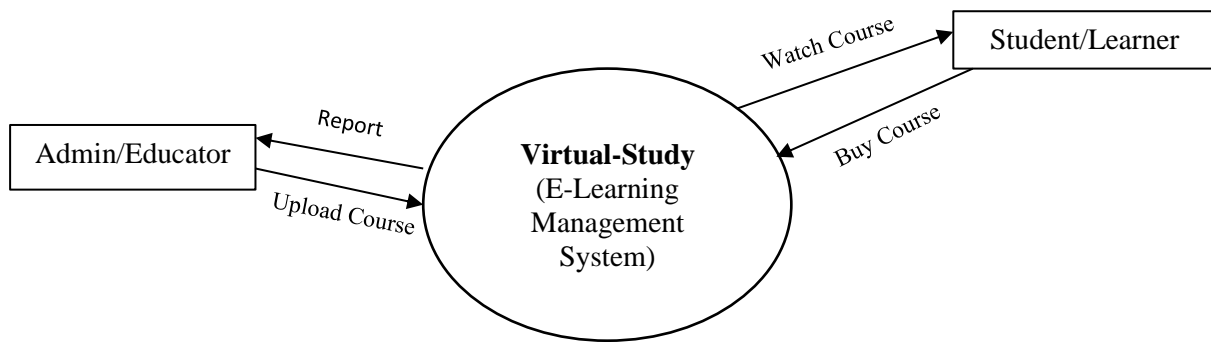
A Process Model describes the sequence of phases for the entire lifetime of a product. Therefore, it is sometimes also called Software Life Cycle. This covers everything from the initial commercial idea until the final de-installation or disassembling of the product after its use.

## **3.3 Data Flow Diagram (DFD)**

Data flow diagram is graphical representation of flow of data in an information system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination. Data flowcharts can range from simple, even hand-drawn process overviews, to in-depth, multi-level DFDs that dig progressively deeper into how the data is handled.

### **3.3.1 DFD 0 Level**

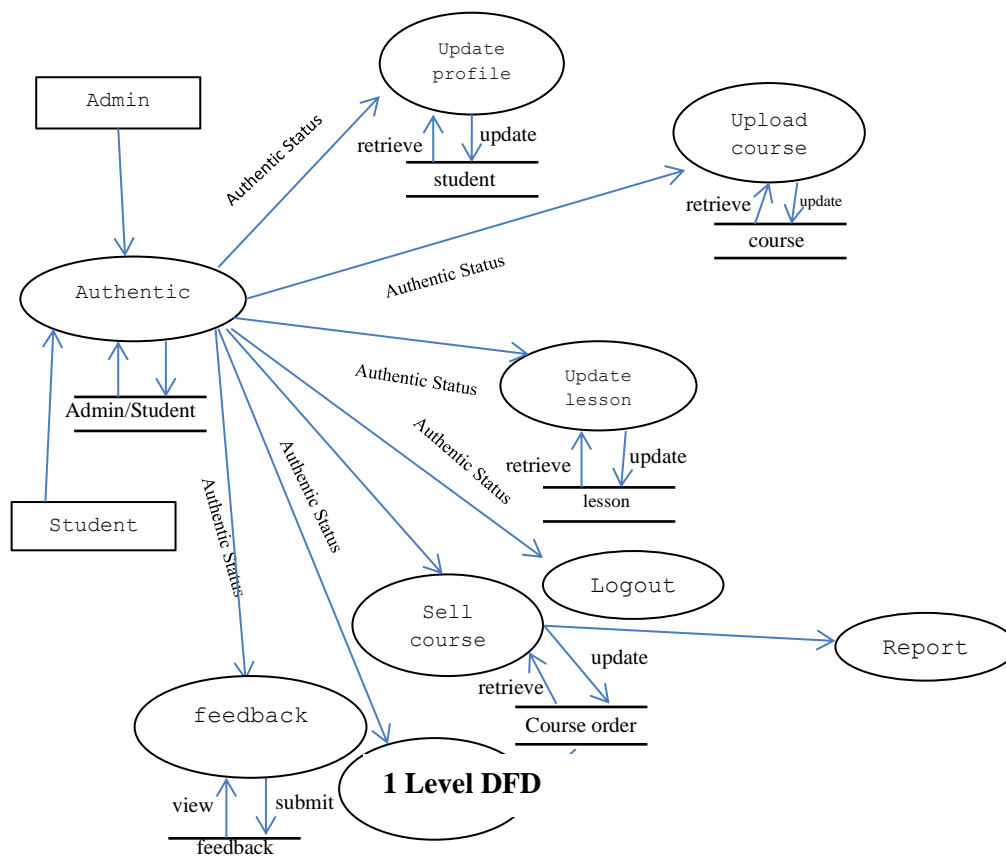
The 0 Level DFD shows flow of data of application. DFD Level 0 is also called a Context Diagram. It's a basic overview of the whole system or process being analyzed or modeled



**O Level DFD**

### 3.3.2 DFD 1 Level

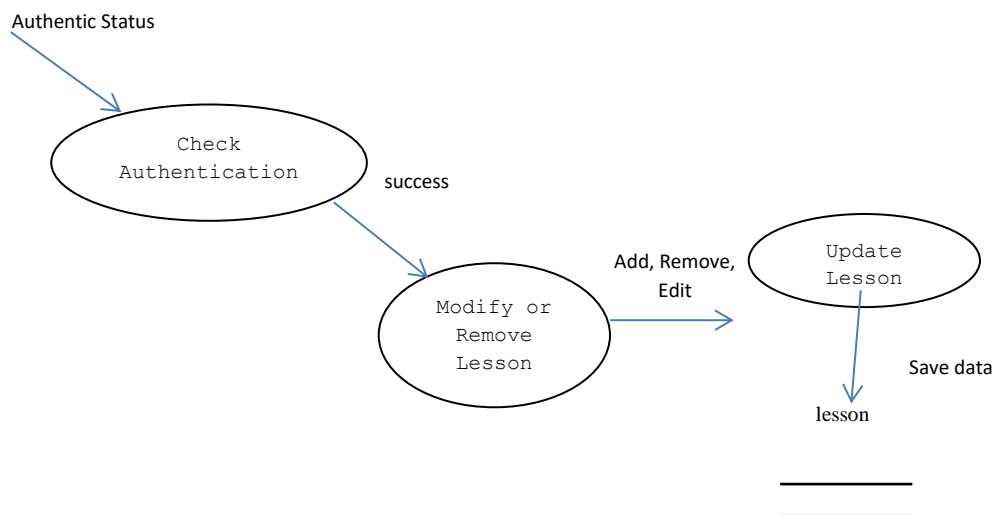
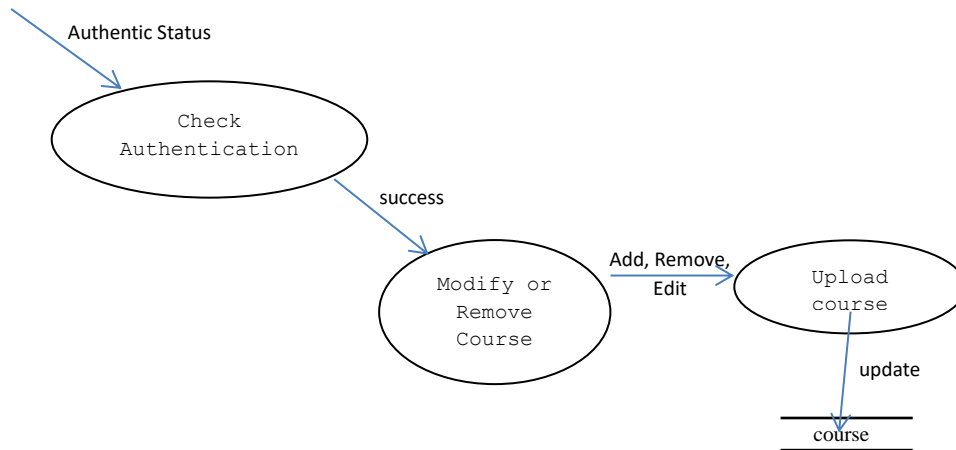
DFD Level 1 provides a more detailed breakout of pieces of the Context Level Diagram. This DFD describes main functions carried out by the system, as we break down the high-level process of the Context Diagram into its sub-process



**1 Level DFD**

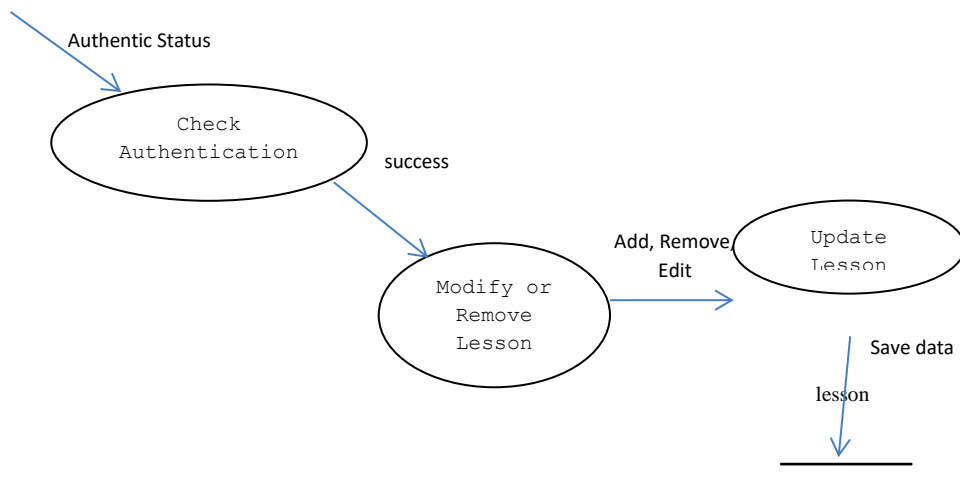
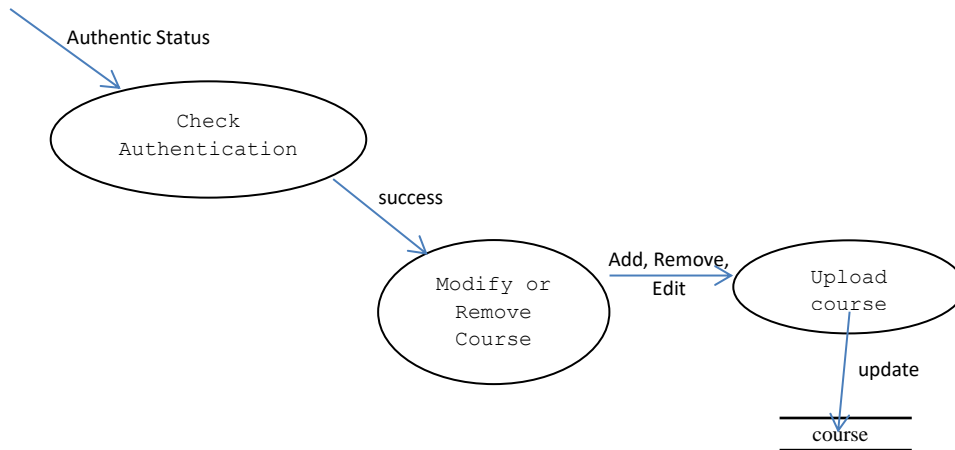
### 3.3.3 DFD 2 Level

The DFD 2 Level describes flow of data in more detail. DFD Level 2 goes one step deeper into parts of Level 1. It may require more text to reach the necessary level of detail about the system's functioning.



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## Chapter 4: Tools/Platform

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### 4.1 Hardware Requirements

Processor	1.6 GHz or Faster Processor
RAM	4 GB
Disk Space	10 GB of Available Hard Disk
Display	1024 X 768 or Higher Resolution

### 4.2 Software Requirement

Operating System	Windows 11
Front End	HTML, CSS, JavaScript
Back End	PHP
Library/ Framework	Bootstrap, JQuery, FontAwesome
Plugins	Owl Carousel
Code Editor	Visual Studio Code 1.99.3
Database	MySQL
Web Server	Apache
Web Browser	Google Chrome

## *Chapter 5: Project Category*

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This project as titled “Virtual-Study (E-Learning Management System)” comes under the Web Based Application. This application is developed with the help of HTML, CSS, Bootstrap, PHP, MySQL etc.



### **Web Based Application**

## *Chapter 6: Implementation*

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Our dedication to our Clients goes well beyond the deployment of our Application. We are committed to providing our Client with a positive experience that starts with a successful implementation.

Implementation is the stage in the project where the theoretical design is turned into a working system. The implementation phase constructs, installs and operates the new system. The most stage is achieving a new successful system is that it will work efficiently and effectively.

Security and integrity of database are very important for any software system because databases are the backbone of the system. Security needs to be implanted at every level of the system so that only authorized user can access the system for updation and other significance process.

## *Chapter 7: Input/ Output Modules of the Project*

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### **7.1 Input Modules**

- Student/Learner Registration
- Course
- Lesson
- Feedback
- Payment Status

### **7.2 Output Modules**

Student/Learner List

- Course Detail
- Lesson Detail
- Sell Report
- Payment Receipts

## *Chapter 8: Future Scope*

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- More than one tutor can be added
- Interaction between Student and Tutor can be improved by introducing Discussion forum
- Quiz Facility may enhance this application's market value
- Live Class can be added

## *Chapter 9: Conclusion*

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The Virtual-Study E-Learning Management System has been computed successfully and was also tested successfully by taking "Test Cases". It is user friendly, and has required options, which can be utilized by the user to perform the desired operations.

The Software is developed using HTML, CSS, JS as front end and PHP, MySQL as back end in windows environment.

The goals that are achieved by the software are:

- Simplification of the operations
- Less processing time and getting required information
- User friendly
- Portable and flexible for further enhancement