



# Online Learning System

A web-based platform designed to enhance the learning experience for students, instructors, and administrators.



## Introduction

# Transforming Education

The rapid digital transformation in education makes online learning platforms essential. Traditional methods are limited by physical presence and scheduling.

This project addresses the increasing demand for affordable, accessible, and user-friendly platforms for seamless interaction between students, instructors, and administrators.

## Problem Statement

# Bridging the Gap

Existing online learning platforms are often too complex or too limited, especially for smaller institutions. Key challenges include:

### Lack of Role-Based Access

Limited control over user permissions.

### Limited Content Management

Difficulties in organizing and delivering course materials.

### Poor Assessment Integration

Ineffective tools for evaluating learning outcomes.

# Our Goals

## 1 Web-Based Platform

Design and implement a system for managing courses, students, and instructors.

## 2 Role-Specific Access

Provide tailored access for students, instructors, and admins.

## 3 Integrated Quizzes

Enable effective assessment of learning outcomes.

## 4 Authentication & Payments

Ensure user login and support payment integration.

## 5 Admin Dashboard

Provide insights into users, and instructors,

## System Scope

# Who Benefits?

### Students

- Course enrollment
- Quizzes
- Progress tracking
- Payments

### Instructors

- Course creation
- Content management
- Quiz design

### Admins

- User management
- Instructor approval
- Course & enrollment oversight
- Payment tracking

The system targets small-to-medium institutions or training providers, with scalability for future larger deployments.

## Functional Requirements

# Key Features

1

### Authentication & Authorization

User registration, login, and role-based access (Student, Instructor, Admin).

2

### Student Features

Browse, enroll, and access course content (videos, PDFs, quizzes).

3

### Instructor Features

Create, upload, edit, and delete courses and content.

4

### Admin Features

Manage users, view courses, and access basic metrics dashboard.

5

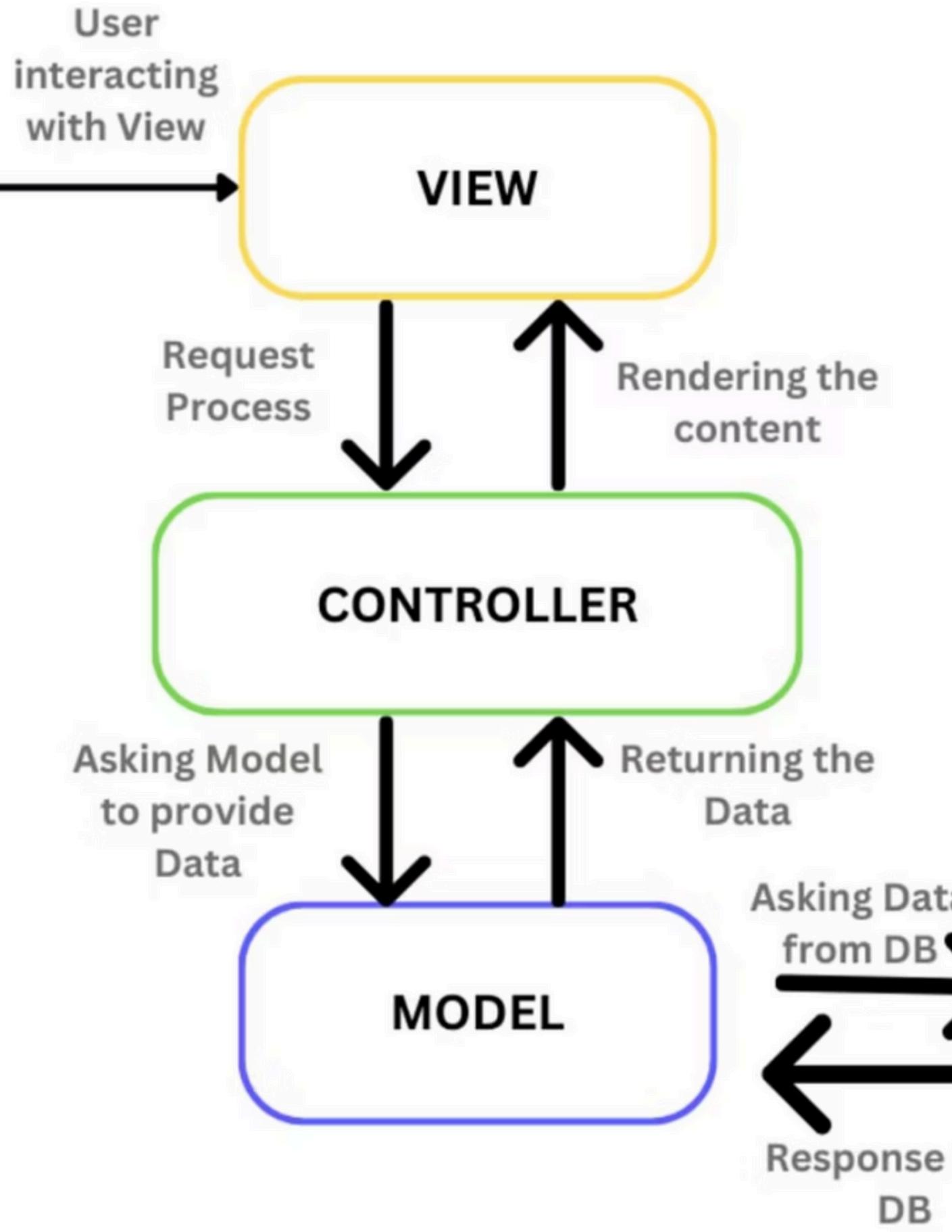
### Course Management

Courses with title, description, instructor, category, modules, lessons, and quizzes. Supports payment integration.

## Non-Functional Requirements

# Underlying Principles

- User-friendly interface
- Secure data storage & protection
- Built with ASP.NET Core MVC
- SQL Server database
- Entity Framework as ORM
- Layered architecture
- Best practices for security (password hashing, input validation)



## Architecture & Implementation

# MVC Structure

### Framework & Backend

- ASP.NET Core MVC (Model-View-Controller)
- C# with .NET 6/7
- Microsoft SQL Server & Entity Framework Core

### Frontend & Auth

- Razor Pages/Views & Bootstrap
- ASP.NET Identity for role-based access
- GitHub for version control

### Project Structure

- **Models:** Represent application data (Users, Courses, etc.), mapped to SQL Server tables.
- **Controllers:** Handle requests, process business logic, interact with Models.
- **Views:** Razor Views for rendering UI pages.

## Results & Discussion

# Successful Implementation

The Online Learning Management System successfully provides a structured platform, implemented with ASP.NET Core MVC, Entity Framework Core, and SQL Server.



### User Handling

Correct registration and login for all roles.



### Course Management

Instructors can create, edit, and update courses.



### Quiz Module

Instructors create, students attempt quizzes.



### Admin Panel

Manage instructor requests and oversee the platform.

## Conclusion & Future Work

# Solid Foundation

This project demonstrates a modular and maintainable web-based learning platform.

## Achievements

- Multi-role system
- Course lifecycle management
- Quiz integration
- Admin-controlled instructor approval
- Scalable architecture & modern UI

## Limitations & Future Improvements

- Limited quiz functionality
- No integrated payment system
- Basic reporting
- No email/notifications
- Deployment focused on local setup