

**AN INTERNSHIP PROJECT REPORT**

on

**E-LEARNING PLATFORM**

*Submitted in partial fulfillment of the award of the degree*

**BACHELOR OF TECHNOLOGY**

in

**COMPUTER SCIENCE AND ENGINEERING**

***Submitted by***

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**CERTIFICATE**

This is to certify that this project report entitled **“E-LEARNING PLATFORM”** is a bonafide record of the work being submitted by **BHOGADI VIDHEY** bearing the roll number **21025A0571**, in the partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in **COMPUTER SCIENCE AND ENGINEERING** to the **UCEK(A), JNTUK, Kakinada, Andhra Pradesh, India**. It has been found satisfactory and hereby found satisfactory and hereby approved for submission.


**Signature of Head of the Department**

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This is to certify that


***Bhogadi Vidhey***


---

has successfully completed 6 weeks  
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## **ABSTRACT**

In the ever-evolving landscape of education, the demand for innovative and accessible learning platforms is paramount. "LEARNFINITY," a robust e-learning website, seeks to revolutionize the traditional approach to education by providing a comprehensive digital environment for students and teachers. Developed using Python Flask and MySQL, LEARNFINITY caters to two primary user roles—students and teachers—each equipped with tailored functionalities to enhance their learning and teaching experiences.

This project is driven by the vision to digitize and streamline educational processes, fostering efficient communication, knowledge sharing, and skill assessment within a unified platform. Students can seamlessly enroll in courses, access diverse content, engage in discussions, and evaluate their understanding through integrated assessments. Furthermore, successful completion of courses rewards them with downloadable digital badges, eliminating the need for external accreditation services.

Teachers, on the other hand, have the capability to create and manage courses, upload educational content, and administer assessments. The platform also facilitates valuable feedback loops through a rating system, enabling continuous improvement in the quality of educational content.

The implementation of LEARNFINITY incorporates a user-friendly interface, ensuring a seamless and intuitive experience for both students and teachers. This presentation will delve into the project's objectives, the technologies employed, the intricacies of its implementation, visual representations of the platform, real-world use cases, and a conclusive overview.

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# NOMENCLATURE

- **UI** – User Interface
- **HTML** – Hypertext Markup Language
- **CSS** – Cascading Style Sheets
- **JS** – Java Script
- **FLASK** – Python web framework that provides useful tools and features.
- **HTTP** – Hypertext Transfer Protocol
- **Bootstrap** – Popular CSS Framework for developing responsive and mobile-first websites
- **OS** – Operating Systems

# **CHAPTER I**

## **INTRODUCTION**

# INTRODUCTION

In the ever-evolving landscape of education, the rise of e-learning platforms has become pivotal, revolutionizing conventional teaching and learning paradigms. In response to this transformative trend, we introduce "LEARNFINITY," an innovative web-based educational platform meticulously crafted to meet the evolving needs of both students and teachers.

LEARNFINITY is driven by the fundamental objective of providing a dynamic and user-centric learning environment that transcends the constraints of traditional educational settings. It seeks to foster seamless communication, collaboration, and knowledge acquisition, promoting a globalized approach to learning by breaking down geographical barriers.

To realize this vision, LEARNFINITY employs a powerful technological stack, leveraging the capabilities of Python Flask and MySQL. The use of Python Flask ensures a rapid and efficient development process, while MySQL serves as a robust and scalable database management system. The amalgamation of these technologies ensures that LEARNFINITY not only delivers a responsive and secure platform but also creates an engaging and interactive space for educational interactions.

As we embark on this exploration of LEARNFINITY, our journey will delve into the intricacies of its implementation, shedding light on the platform's architecture, features, and user-centric design. This presentation serves as a comprehensive introduction to LEARNFINITY, providing a deeper understanding of its objectives, the technologies propelling its development, and the overarching commitment to cultivating a dynamic digital ecosystem that empowers both students and teachers in their pursuit of knowledge and excellence.



## 1.1 PROBLEM STATEMENT

In the rapidly evolving landscape of education, there exists a pressing need for a comprehensive and user-friendly e-learning platform that caters to both students and teachers. The traditional methods of education often lack a seamless integration of content creation, interaction, and assessment within a single platform. Additionally, the absence of a unified system for skills testing and recognition poses challenges for both educators and learners.

### **Challenges:**

**Fragmented Learning Systems:** Traditional education systems rely on separate tools for content creation, communication, and assessment, leading to a fragmented learning experience. The absence of a centralized platform hinders effective collaboration between teachers and students.

**Skill Testing and Recognition:** Current systems often lack a standardized and integrated approach to skills testing and recognition. Students completing courses struggle to showcase their achievements and skills in a universally recognized manner.

**Dependency on Third-Party Platforms:** The reliance on external platforms for skills recognition, such as third-party badge providers, introduces additional complexities. Integrating these services often requires users to navigate multiple platforms, leading to inefficiencies.

**Inefficient Doubt Resolution:** Traditional learning environments do not provide an efficient mechanism for students to address doubts and queries. The absence of a streamlined doubt resolution system hampers the learning experience.

## 1.2 OBJECTIVE OF THE PROJECT

The LEARNFINITY e-learning platform seeks to revolutionize education by seamlessly integrating content creation, communication, and assessment. The project empowers teachers with tools for efficient course management, allowing them to create, update, and monitor courses effortlessly. Through role-based access control, the platform tailors functionalities to the needs of teachers and students, fostering interactive learning environments. The introduction of a digital badge system eliminates dependencies on third-party platforms for skills recognition. Efforts to streamline doubt resolution and course enrollment processes contribute to a supportive and accessible learning environment. LEARNFINITY's comprehensive assessment system enables effective evaluation, positioning itself as a dynamic and user-centric resource in the digital age.

## 1.3 ADVANTAGES

1. **Integrated Learning Experience:** LEARNFINITY consolidates content creation, communication, and assessment in one platform, streamlining the learning process.
2. **Simplified Course Management:** Teachers benefit from user-friendly tools for effortless course creation, content management, and assessment.
3. **Real-Time Interaction:** The platform enables instant interaction and feedback between teachers and students, promoting engagement and clarity.
4. **Digital Badges for Skills Recognition:** LEARNFINITY introduces a digital badge system, offering students a direct and efficient way to showcase their achievements without relying on third-party platforms.
5. **Efficient Doubt Resolution and Enrollment:** The platform prioritizes quick doubt resolution and straightforward course enrollment, enhancing accessibility for learners.

# **CHAPTER II**

## **SYSTEM DESIGN**

## DESIGN OF THE SYSTEM

### 2.1 SOFTWARE REQUIREMENTS

Platform	Platform Independent
The Operating System	Windows 7 & above
Framework	Flask
Front-End Tool	Google Chrome
Database	MySQL

### 2.2 HARDWARE REQUIREMENTS

Processor	Intel i5 10 <sup>th</sup> gen or above
RAM	Minimum 4 GB
Graphics	Integrated graphics card
Hard Disk	Minimum 300 GB

## **2.3 SYSTEM REQUIREMENTS**

To ensure the seamless operation of the LEARNFINITY e-learning platform, specific system requirements must be met. In terms of hardware, the server infrastructure should adhere to both minimum and recommended specifications, while client devices must meet specified criteria for optimal user experience. Software prerequisites include supported operating systems for both servers and clients, compatibility with various web browsers, and the use of a designated database management system, such as MySQL, with version compatibility specified. Networking requirements dictate the need for a stable internet connection for users to access the platform, complemented by network security protocols to maintain data integrity.

### **Functional Requirements:**

The LEARNFINITY e-learning platform is designed to deliver a robust set of functionalities for both teachers and students. User authentication features encompass registration, login, and role-based access control for distinct user roles. Profile management allows users to view and edit their personal information. For teachers, the platform supports course management functionalities, including course creation, content addition, and assessment creation. Students, on the other hand, benefit from course enrollment capabilities, providing access to enrolled courses and their content. Interaction and feedback mechanisms facilitate real-time communication between teachers and students, supplemented by commenting and rating functionalities for courses. The platform introduces a digital badge system, generating and displaying badges upon course completion, with storage and retrieval features for users. Doubt resolution mechanisms empower students to submit queries efficiently, receiving timely responses from teachers. An assessment system is implemented, presenting assessments to students and providing evaluation feedback. The system also includes logging and reporting features to track user activities, generate reports, and ensure system integrity.

# **CHAPTER III**

## **IMPLEMENTATION**

# IMPLEMENTATION

Throughout the implementation phase of the LEARNFINITY e-learning website, the development team will translate the outlined design specifications into executable code. Adhering to established software development best practices, the team will prioritize the creation of clean, modular, and well-documented code. This includes the incorporation of robust unit testing processes to validate the functionality of individual components. The meticulous execution of the modules and implementation processes holds paramount significance, as they collectively contribute to the realization of the system design. By adhering to these development practices, the team aims to create a highly functional, reliable, and user-friendly e-learning platform that effectively facilitates course management, interaction, and skills recognition for both teachers and students.

## 3.1 MODULES

Creating a comprehensive set of modules in code requires defining classes or functions for each module. The few main modules are as listed below and the usage of the modules is as given below

- 1.flask
- 2.Flask\_mysqldb

A screenshot of a code editor window titled 'app.py > ...'. The code shows a series of import statements: 'import math', 'from flask import Flask, render\_template, request, jsonify, redirect, url\_for, Response, flash', 'import os', 'from flask\_mysqldb import MySQL', 'import warnings', 'import utils', 'import time', and 'import cv2'.

```
app.py > ...
1  import math
2  from flask import Flask, render_template, request, jsonify, redirect, url_for, Response, flash
3  import os
4  from flask_mysqldb import MySQL
5  import warnings
6  import utils
7  import time
8  import cv2
```

**Fig - 3.1 Modules**

## 3.2 MODULES DESCRIPTION

### 1. FLASK: A Foundation for Dynamic Web Development :

Flask serves as the backbone of LEARNFINITY, providing a lightweight and flexible web framework tailored for Python. Renowned for its ease of use, Flask excels in building dynamic web applications and APIs. The adherence to the Web Server Gateway Interface (WSGI) standard allows seamless integration with various web servers. Key components and features include:

#### **Routing: Streamlining Endpoint Creation**

Flask simplifies URL mapping to Python functions through defined routes, allowing the creation of distinct endpoints to handle diverse HTTP methods (GET, POST, etc.).

#### **Templates: Code Separation with Jinja2**

Supporting template engines like Jinja2, Flask enables a clear separation between Python code and HTML, ensuring code readability and maintainability for server-side and client-side components.

#### **Extensions: Modular Architecture for Enhanced Functionality**

Flask's modular architecture supports extensions, providing additional functionalities. Numerous extensions are available, covering areas such as authentication, database integration, and more.

#### **Integrated Development Server: Simplifying Testing and Debugging**

Flask includes a built-in development server, streamlining the testing and debugging processes during application development.



## **2. MySQL:**

The MySQL module within LEARNFINITY acts as a pivotal element, facilitating seamless communication with the MySQL database. This module efficiently manages database connections, executes queries, and oversees data retrieval processes. Its primary role involves the storage and retrieval of crucial information, including student details and assessment results. The MySQL module ensures the integrity and security of the database, contributing significantly to the overall robustness of the LEARNFINITY system.

### **3.3 INTRODUCTION OF TECHNOLOGIES USED**

#### **1. HTML: Building Blocks of Web Content**

HTML (Hyper Text Markup Language) forms the foundation of LEARNFINITY's web content structure. As the standard markup language, HTML is designed for documents displayed in web browsers. Collaborating with technologies like Cascading Style Sheets (CSS) and scripting languages such as JavaScript, HTML facilitates the creation of multimedia web pages. It semantically describes the structure of web pages and originally included cues for document appearance.

#### **2. CSS: Crafting Aesthetically Pleasing Designs**

CSS (Cascading Style Sheets) is employed in conjunction with HTML to define the visual presentation of LEARNFINITY. Serving as a style sheet language, CSS describes the look and formatting of documents in a markup language. It adds an extra layer to HTML, allowing for the alteration of web page styles and user interfaces. CSS extends its utility to various XML documents, including plain XML, SVG, and XUL. In the LEARNFINITY project, CSS collaborates with HTML and JavaScript to create visually appealing user interfaces for web and mobile applications.

### **3. JavaScript: Dynamic Interaction and Versatility**

JavaScript, a dynamic programming language, plays a crucial role in making LEARNFINITY interactive and dynamic. Primarily employed on web pages, JavaScript allows client-side scripts to engage with users, facilitating the creation of dynamic pages. Initially known as LiveScript, its name was later changed to JavaScript by Netscape. JavaScript's general-purpose core has been embedded in major web browsers, and its extensive ecosystem includes third-party libraries and frameworks like Axios, jQuery, and Fetch API. These additions simplify API integration, providing methods for API requests, handling responses, and managing authentication. JavaScript's versatility empowers LEARNFINITY to retrieve and manipulate data, engage users, and seamlessly integrate dynamic content, thereby enabling the creation of robust and interactive web applications.

### **4. Bootstrap: Streamlining Responsive Design**

Bootstrap, a powerful front-end framework, is employed in LEARNFINITY to streamline the development of responsive and mobile-friendly web pages. Offering a collection of pre-designed components and styles, Bootstrap facilitates the creation of a consistent and visually appealing user interface. Its responsive grid system and extensive library of components ensure a seamless and standardized user experience across various devices. By leveraging Bootstrap, LEARNFINITY enhances its overall design efficiency and responsiveness, providing an optimal learning environment for both teachers and students.

## **3.4 CODING**

The following shows the code which is used to display output and to design a pleasant looking website.

## HTML CODE :

### Base.html

```
<!DOCTYPE html>
<html Lang="en">

<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <meta http-equiv="X-UA-Compatible" content="ie=edge">
  <link rel="icon" href="{{ url_for('static', filename='logo1.png') }}" type="image/x-icon">
  <title>Learnfinity - {% block title %}{% endblock %}</title>
  <link rel="stylesheet" href="{{ url_for('static', filename='style.css') }}">
  <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/5.15.3/css/all.min.css" />
  <script src="https://cdnjs.cloudflare.com/ajax/libs/html2canvas/0.5.0-
beta4/html2canvas.min.js"></script>
  <script src="{{ url_for('static', filename='script.js') }}"></script>
</head>

<body>
  <div class="wrapper">
    <nav>
      <input type="checkbox" id="show-search">
      <input type="checkbox" id="show-menu">
      <label for="show-menu" class="menu-icon"><i class="fas fa-bars"></i></label>
      <div class="content">
        <div class="logo">
          <a href="/"></a>
        </div>
        <div class="logo">
          <a href="/">&nbsp;</a>
        </div>

        <ul class="links">
          <li><a href="{{ url_for('views.home') }}"#home">Home</a></li>
          <li><a href="{{ url_for('views.home') }}"#about ">About</a></li>
```

```

<li><a href="{ url_for('views.home') }}"#teacher ">Teachers</a></li>
<li><a href="{ url_for('views.home') }}"#course ">Courses</a></li>
<li>
  <a href="" class="desktop-link" aria-disabled="true">Categories</a>
  <input type="checkbox" id="show-features">
  <label for="show-features">Categories</label>
  <ul>
    <li><a href="/category/Web-Development">Web Development</a></li>
    <li><a href="/category/Software-Development">Software
Development</a></li>
    <li><a href="/category/Machine-Learning">Machine Learning</a></li>
    <li><a href="/category/Deep-Learning">Deep Learning</a></li>
  </ul>
</li>
<!-- <li><a href="#">Contact Us</a></li> -->
{% if user.is_authenticated %}
<li>
  <a href="#" class="desktop-link">Profile</a>
  <input type="checkbox" id="show-features">
  <label for="show-features">Profile</label>
  <ul>
    <li><a href="/profile">Profile</a></li>
    <li><a href="/account">Account</a></li>
    <li><a href="/logout">Logout</a></li>
  </ul>
</li>
{% else %}
<li><a href="/login">Login</a></li>
<li><a href="/signup">Signup</a></li>
{% endif %}
</ul>
</div>
<label for="show-search" class="search-icon"><i class="fas fa-search"></i></label>
<form action="/search" method="POST" class="search-box">
  <input name="search_term" type="text" placeholder="Type Something to Search..."
required>
  <button type="submit" class="go-icon"><i class="fas fa-long-arrow-alt-
right"></i></button>
</form>
</nav>
</div>

<div class="page_content">{% block content %}{% endblock %}</div>

<footer class="footer">
  <div class="container">

```

```

<div class="row">
  <div class="footer-col" style="padding-left: 6rem;">
    <h4>Main Links</h4>
    <ul>
      <li><a href="{{ url_for('views.home') }}">home</a></li>
      <li><a href="{{ url_for('views.home') }}"#about ">about us</a></li>
      <li><a href="{{ url_for('views.home') }}"#teacher ">our
teachers</a></li>
      <li><a href="{{ url_for('views.home') }}"#course ">our courses</a></li>
    </ul>
  </div>
  <div class="footer-col ">
    <h4>get help</h4>
    <ul>
      <li><a href="mailto:vidhey.bhogadi2003@gmail.com ">FAQ</a></li>
    </ul>
  </div>
  <div class="footer-col ">
    <h4>Browse Categories</h4>
    <ul>
      <li><a href="/category/Web-Development ">Web Development</a></li>
      <li><a href="/category/Software-Development ">Software
Development</a></li>
      <li><a href="/category/Machine-Learning ">Machine Learning</a></li>
      <li><a href="/category/Deep-Learning ">Deep Learning</a></li>
    </ul>
  </div>
  <div class="footer-col ">
    <h4>follow us</h4>
    <div class="social-links ">
      <a href="https://www.facebook.com/bhogadividhey/ " target="_blank "><i
class="fab fa-facebook-f "></i></a>
      <a href="https://twitter.com/VidheyBhogadi " target="_blank "><i
class="fab fa-twitter "></i></a>
      <a href="https://www.instagram.com/its_me_vidhey/ " target="_blank "><i
class="fab fa-instagram "></i></a>
      <a href="https://www.linkedin.com/in/bhogadi-vidhey-aa62b71a8/ "
target="_blank "><i class="fab fa-linkedin-in "></i></a>
    </div>
  </div>
</div>
</div>

```

```

</footer>
<hr/>
<div class="row" style="padding: 1rem; background-color: #0a0550; color: white;">

```

```

    <h4 style=" padding-left: 45rem !important;"> &copy; COPYRIGHT 2023 MADE BY <a
href="https://github.com/Vidhey012?tab=repositories" target="_blank" style="color:
white;">VIDHEY BHOGADI</a> </h3>
    </h4>
</div>
<button id="scrollToTopBtn"><h2>&nbsp;<i class="fa fa-arrow-up "></i>&nbsp;</h2></button>

<script type="text/javascript">
    // Get the button element
    const scrollToTopBtn = document.getElementById('scrollToTopBtn');

    // Show the button when user scrolls down
    window.addEventListener('scroll', function() {
        if (window.pageYOffset > 0) {
            scrollToTopBtn.classList.add('show');
        } else {
            scrollToTopBtn.classList.remove('show');
        }
    });

    // Scroll to top when the button is clicked
    scrollToTopBtn.addEventListener('click', function() {
        window.scrollTo({
            top: 0,
            behavior: 'smooth'
        });
    });
</script>
</body>

</html>

```

## CSS CODE:

Style.css

```
@import
url('https://fonts.googleapis.com/css2?family=Roboto:ital,wght@0,100;0,300;0,400;0,500;1,300;1,400;1,500&display=swap');
:root {
  --pink: #FF046F;
  --violet: #C63BFA;
}

/* Webfont: Refault-Italic */
```

```
@font-face {
  font-family: 'Refault';
  src: url('fonts/REFAULT.eot');
  /* IE9 Compat Modes */
  src: url('fonts/REFAULT.eot?#iefix') format('embedded-opentype'), /* IE6-IE8 */
  url('fonts/REFAULT.woff') format('woff'), /* Modern Browsers */
  url('fonts/REFAULT.woff2') format('woff2'), /* Modern Browsers */
  url('fonts/REFAULT.ttf') format('truetype');
  /* Safari, Android, iOS */
  font-style: italic;
  font-weight: normal;
  text-rendering: optimizeLegibility;
}
```

```
#scrollTopBtn {
  display: none;
  position: fixed;
  bottom: 20px;
  right: 20px;
  z-index: 99;
  padding: 10px;
  border: 1px solid #CBC3E3;
  border-radius: 30px;
  background-color: #5D3FD3;
  color: white;
  cursor: pointer;
}
```

```
#scrollTopBtn:hover {
  background-color: #cbc3e3de;
}
```

```
border: 1px solid #5D3FD3;
color: #5D3FD3;
cursor: pointer;
}
```

```
#scrollTopBtn.show {
  display: block;
}
```

```
body::-webkit-scrollbar {
  display: none;
}
```

```
body {
  -ms-overflow-style: none;
  /* IE and Edge */
  scrollbar-width: none;
  /* Firefox */
}
```

```
* {
  margin: 0;
  padding: 0;
  box-sizing: border-box;
  text-decoration: none;
  font-family: 'Poppins', sans-serif;
}
```

```
.page_content {
  background-color: rgba(96, 130, 182, 0);
  background: url("bg.jpg");
  padding-top: 70px;
  min-height: 61vh;
  overflow: auto;
}
```

```
.alert {
  margin-top: 20px;
  padding: 20px;
  background-color: #752f2f;
  color: whitesmoke;
}
```

```
.alertclosebtn {
  margin-left: 15px;
  color: #5D3FD3;
  font-weight: bold;
}
```



```
float: right;
font-size: 22px;
line-height: 20px;
cursor: pointer;
transition: 0.3s;
}
```

```
.alertclosebtn:hover {
  color: black;
}
```

```
.wrapper {
  background: #fbfcf8;
  background-color: #fbfcf8;
  position: fixed;
  width: 100%;
  z-index: 10000;
  border-bottom-left-radius: 30px;
  border-bottom-right-radius: 30px;
  box-shadow: 2px 2px 2px #CBC3E3;
}
```

```
.wrapper nav {
  position: relative;
  display: flex;
  max-width: calc(100% - 200px);
  margin: 0 auto;
  height: 70px;
  align-items: center;
  justify-content: space-between;
}
```

```
nav .content {
  display: flex;
  align-items: center;
}
```

```
nav .content .links {
  margin-left: 80px;
  display: flex;
}
```

```
.content .logo a {
  color: #5D3FD3;
  font-size: 30px;
  font-weight: 600;
}
```

```
}
```

```
.content .links li {  
  list-style: none;  
  line-height: 70px;  
}
```

```
.content .links li a,  
.content .links li label {  
  color: #5D3FD3;  
  font-size: 18px;  
  font-weight: 500;  
  padding: 9px 17px;  
  border-radius: 5px;  
  transition: all 0.3s ease;  
}
```

```
.content .links li label {  
  display: none;  
}
```

```
.content .links li a:hover,  
.content .links li label:hover {  
  border-top-left-radius: 20px;  
  border-top-right-radius: 20px;  
  background: #E6E6FA;  
  transition: 1s;  
}
```

```
.wrapper .search-icon,  
.wrapper .menu-icon {  
  color: #5D3FD3;  
  font-size: 18px;  
  cursor: pointer;  
  line-height: 70px;  
  width: 70px;  
  text-align: center;  
}
```

```
.wrapper .menu-icon {  
  display: none;  
}
```

```
.wrapper #show-search:checked~.search-icon i::before {  
  content: "\f00d";  
}
```

```
.wrapper .search-box {  
  position: absolute;  
  height: 100%;  
  max-width: calc(100% - 50px);  
  width: 100%;  
  opacity: 0;  
  pointer-events: none;  
  transition: all 0.3s ease;  
}
```

```
.wrapper #show-search:checked~.search-box {  
  opacity: 1;  
  pointer-events: auto;  
}
```

```
.search-box input {  
  width: 100%;  
  height: 100%;  
  border: none;  
  outline: none;  
  font-size: 17px;  
  color: #5D3FD3;  
  background: #fbfcf8;  
  padding: 0 100px 0 15px;  
}
```

```
.search-box input::placeholder {  
  color: #5D3FD3;  
}
```

```
.search-box .go-icon {  
  position: absolute;  
  right: 10px;  
  top: 50%;  
  transform: translateY(-50%);  
  line-height: 60px;  
  width: 70px;  
  background: #fbfcf8;  
  border: none;  
  outline: none;  
  color: #5D3FD3;  
  font-size: 20px;  
  cursor: pointer;  
}
```

```
.wrapper input[type="checkbox"] {
```

```
display: none;
}
```

```
/* Dropdown Menu code start */
```

```
.content .links ul {
  border-bottom-left-radius: 20px;
  border-bottom-right-radius: 20px;
  position: absolute;
  background: #fbfcf8;
  top: 80px;
  z-index: -1;
  opacity: 0;
  visibility: hidden;
}
```

```
.content .links li:hover>ul {
  top: 70px;
  opacity: 1;
  visibility: visible;
  transition: all .5s ease;
}
```

```
.content .links ul li a {
  display: block;
  width: 100%;
  line-height: 30px;
  border-radius: 0px!important;
}
```

```
.content .links ul ul {
  position: absolute;
  top: 0;
  right: calc(-100% + 8px);
}
```

```
.content .links ul li {
  position: relative;
}
```

```
.content .links ul li:hover ul {
  top: 0;
}
```

```
/* Responsive code start */
```

```

@media screen and (max-width: 1250px) {
  .wrapper nav {
    max-width: 100%;
    padding: 0 20px;
  }
  nav .content .links {
    margin-left: 30px;
  }
  .content .links li a {
    padding: 8px 13px;
  }
  .wrapper .search-box {
    max-width: calc(100% - 100px);
  }
  .wrapper .search-box input {
    padding: 0 100px 0 15px;
  }
}

```

```

@media screen and (max-width: 900px) {
  .wrapper .menu-icon {
    display: block;
  }
  .wrapper #show-menu:checked~.menu-icon i::before {
    content: "\f00d";
  }
  nav .content .links {
    display: block;
    position: fixed;
    background: #E6E6FA;
    height: 100%;
    width: 100%;
    top: 70px;
    left: -100%;
    margin-left: 0;
    max-width: 350px;
    overflow-y: auto;
    padding-bottom: 100px;
    transition: all 0.3s ease;
  }
  nav #show-menu:checked~.content .links {
    left: 0%;
  }
  .content .links li {
    margin: 15px 20px;
  }
}

```

```

}
.content .links li a,
.content .links li label {
    line-height: 40px;
    font-size: 20px;
    display: block;
    padding: 8px 18px;
    cursor: pointer;
}
.content .links li a.desktop-link {
    display: none;
}
/* dropdown responsive code start */
.content .links ul,
.content .links ul ul {
    position: static;
    opacity: 1;
    visibility: visible;
    background: none;
    max-height: 0px;
    overflow: hidden;
}
.content .links #show-features:checked~ul,
.content .links #show-services:checked~ul,
.content .links #show-items:checked~ul {
    max-height: 100vh;
}
.content .links ul li {
    margin: 7px 20px;
}
.content .links ul li a {
    font-size: 18px;
    line-height: 30px;
    border-radius: 5px!important;
}
}
}

```

```

@media screen and (max-width: 400px) {
    .wrapper nav {
        padding: 0 10px;
    }
    .content .logo a {
        font-size: 27px;
    }
    .wrapper .search-box {
        max-width: calc(100% - 70px);
    }
}

```

```

    }
    .wrapper .search-box .go-icon {
        width: 30px;
        right: 0;
    }
    .wrapper .search-box input {
        padding-right: 30px;
    }
}

```

```
/* Body content starts */
```

```

.heading {
    font-size: 4rem;
    color: var(--pink);
    text-align: center;
    padding: 0 1rem;
    padding-top: 6rem;
    letter-spacing: .2rem;
    font-weight: 500;
}

```

```

.title {
    padding: 0 1rem;
    font-size: 2rem;
    text-align: center;
    font-weight: 400;
    color: #AA98A9;
}

```

```

.home {
    min-height: 100vh;
    background-image: url("bg.jpg");
    background-size: cover;
    background-position: center;
    background-attachment: fixed;
    /* z-index: 0; */
    overflow: hidden;
    position: relative;
}

```

```

.home .body_content {
    display: flex;
    align-items: center;
    justify-content: center;
}

```

```
flex-flow: column;
padding-top: 2rem;
padding-bottom: 8rem;
text-align: center;
}
```

```
.home .body_content h1 {
  font-size: 5rem;
  color: #5D3FD3;
  padding: 0 1rem;
  font-family: "Refault", Georgia;
  text-shadow: 3px 3px 0px #CBC3E3;
  text-transform: uppercase;
}
```

```
.h1class {
  font-size: 3rem;
  color: #5D3FD3;
  padding: 0 1rem;
  text-align: center;
  font-family: "Refault", Georgia;
  text-shadow: 3px 3px 0px #CBC3E3;
  text-transform: uppercase;
}
```

```
.home .body_content p {
  font-size: 2rem;
  color: #eee;
  padding: 1rem 25rem;
}
```

```
.home .body_content button {
  height: 4rem;
  width: 20rem;
  border-radius: 5rem;
  background: #7F00FF;
  color: white;
  font-size: 2rem;
  cursor: pointer;
  transition: .2s;
  border: none;
  margin-top: 2rem;
  box-shadow: 0 .3rem 1rem #5D3FD3;
}
```

```
.home .body_content button:hover {
```



```
    letter-spacing: .2rem;
}
```

```
.home .box-container {
    display: flex;
    justify-content: center;
    flex-wrap: wrap;
}
```

```
.home .box-container .box {
    height: 20rem;
    width: 25rem;
    background: #CBC3E3;
    text-align: center;
    border-radius: 1rem;
    box-shadow: 0 .3rem .5rem rgba(0, 0, 0, .5);
    margin-top: 2rem;
    cursor: pointer;
}
```

```
.home .box-container .box i {
    height: 6rem;
    width: 6rem;
    line-height: 6rem;
    text-align: center;
    border-radius: 50%;
    color: #5D3FD3;
    background: var(--violet);
    font-size: 3rem;
    margin: 2rem 0;
    transition: .2s;
    cursor: pointer;
}
```

```
.home .box-container .box h3 {
    font-size: 2rem;
    color: var(--pink);
    transition: .2s;
}
```

## FLASK CODE:

auth.py

```
from flask import Blueprint, flash, redirect, render_template, request, url_for
from flask_login import current_user, login_required, login_user, logout_user
from flask_mysqldb import MySQLdb
from werkzeug.security import generate_password_hash, check_password_hash
from .models import User
from datetime import date
from . import mysql
```

```
auth = Blueprint('auth', __name__)
```

```
@auth.route('/login', methods=['GET', 'POST'])
```

```
def login():
```

```
    if request.method == 'POST':
```

```
        # fetching info from the form
```

```
        acc_type = request.form.get('type')
```

```
        username = request.form.get('username')
```

```
        password = request.form.get('password')
```

```
        # fetching info from db
```

```
        cur = mysql.connection.cursor(MySQLdb.cursors.DictCursor)
```

```
        cur.execute(
```

```
            """SELECT * FROM authorization WHERE username = %s AND account_type = %s""",
```

```
(username, acc_type))
```

```
        result = cur.fetchone()
```

```
        # print(result)
```

```
        cur.close()
```

```
        # if the user exists
```

```
        if result is not None:
```

```
            user = User(result['account_id'], result['account_type'],
```

```
                        result['username'], result['email'], result['encrypted_password'])
```

```
        # checking password
```

```
        if check_password_hash(user.encrypted_password, password):
```

```
            login_user(user, remember=True)
```

```
            return redirect(url_for('views.profile'))
```

```
        else:
```

```
            # incorrect password
```

```
            flash('Incorrect Password', 'error')
```

```
            return render_template('login.html', user=current_user)
```

```

else:
    # if the user does not exist, redirect to sign up page
    return redirect(url_for('auth.signup'))

```

```

if request.method == 'GET':
    if current_user.is_authenticated:
        return redirect(url_for('views.profile'))
    else:
        return render_template('login.html', user=current_user)

```

```

@auth.route('/signup', methods=['GET', 'POST'])

```

```

def signup():
    # fetching info from the form
    if request.method == 'POST':
        acc_type = request.form.get('type')
        firstname = request.form.get('firstname')
        lastname = request.form.get('lastname')
        username = request.form.get('username')
        email = request.form.get('email')
        password1 = request.form.get('set_pass')
        password2 = request.form.get('confirm_pass')

```

```

    # fetching info from db
    cur = mysql.connection.cursor(MySQLdb.cursors.DictCursor)
    cur.execute(
        """SELECT username, email FROM authorization WHERE (username = %s OR email = %s) and
account_type = %s""", (username, email, acc_type))
    result = cur.fetchall()
    print(result)
    cur.close()

```

```

# checking if the username and email are unique
if len(result) > 0:
    # flash
    flash('Username/Email already exists', 'error')
    return render_template('sign_up.html', user=current_user)
# checking if valid names were inputted
elif len(firstname) < 2 or len(lastname) < 2:
    # flash
    flash('Input a valid first name and last name', 'error')
    return render_template('sign_up.html', user=current_user)
# checking length of the password
elif len(password1) < 8:
    # flash
    flash('Password too small. Minimum Length is 8.', 'error')

```

```

        return render_template('sign_up.html', user=current_user)
    # checking if the two passwords match
    elif password1 != password2:
        flash("Passwords don't match", 'error')
        return render_template('sign_up.html', user=current_user)

```

```

    else:
        # add user to the data base
        enc_password = generate_password_hash(password1)
        cur = mysql.connection.cursor()
        cur.execute("""INSERT INTO authorization (account_type, username, email,
encrypted_password) VALUES(%s, %s, %s, %s)""",
                    (acc_type, username, email, enc_password))
        mysql.connection.commit()

```

```

        cur.execute(
            """SELECT account_id FROM authorization WHERE username = %s AND account_type
= %s ORDER BY account_id DESC""", (username, acc_type))
        account_id = cur.fetchone()[0]

```

```

mysql.connection.commit()
user = User(
    account_id, 'student', email, username, enc_password)
login_user(user, remember=True)
return redirect(url_for('views.profile'))

```

```

if request.method == 'GET':
    if current_user.is_authenticated:
        return redirect(url_for('views.profile'))
    else:
        return render_template('sign_up.html', user=current_user)

```

```

@auth.route('/update_account', methods=['POST'])
@login_required
def update_account():
    old_pass = request.form.get('old_password')
    new_pass = request.form.get('new_password')
    confirm_pass = request.form.get('confirm_password')
    # print(type(new_pass))

```

```

if check_password_hash(current_user.enc_password, old_pass):
    cur = mysql.connection.cursor()
    if new_pass == confirm_pass:
        if len(new_pass) < 8:
            flash('Password is too small. Minimum Length is 8.', 'error')

```

```

        return redirect(url_for('views.account'))
        cur.execute("""UPDATE authorization SET encrypted_password = %s WHERE account_id
= %s""",
                    (generate_password_hash(new_pass), current_user.account_id))
        mysql.connection.commit()
        current_user.enc_password = generate_password_hash(new_pass)
    else:
        flash("Passwords don't match", 'error')

```

```

        return redirect(url_for('views.account'))
    else:
        flash('Incorrect Password', 'error')
        return redirect(url_for('views.account'))

```

```

@auth.route('/logout')
@login_required
def logout():
    logout_user()
    return redirect(url_for('auth.login'))

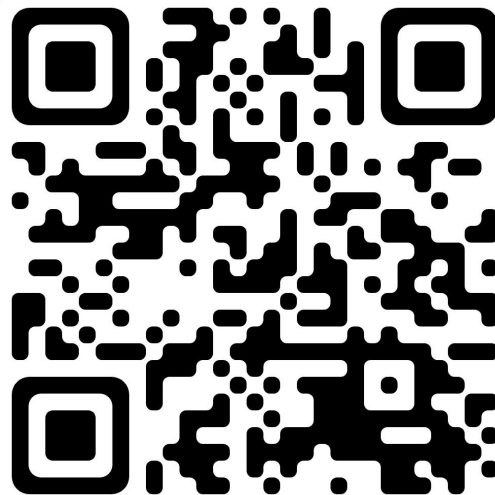
```

## Source code reference:

**Link :**

<https://github.com/Vidhey012/APSCHE-Project>

**Qr Code :**



## **RUNNING THE ABOVE APPLICATION USING TERMINAL:**

Running a Flask application in the VS Code terminal involves a series of steps. Here's a step-by-step procedure:

### **1. Open vs code**

Open Visual Studio Code and ensure that you have your Flask project opened in the workspace.

### **2. Set Up a Virtual Environment**

While not strictly necessary, it's often a good practice to create a virtual environment for your Flask project. This helps manage dependencies and keeps your project isolated.

In the terminal, navigate to your project directory and create a virtual environment:

```
cd path/to/your/flask/app
python -m venv venv
```

Activate the virtual environment:

- On Windows:

```
bash
.\venv\Scripts\activate
```

- On macOS/Linux:

```
bash
source venv/bin/activate
```

### **3. Install Flask**

With the virtual environment activated, install Flask using pip:

```
bash  
  
pip install Flask
```

#### 4. Set Flask App and Environment Variables

In the VS Code terminal, set the FLASK\_APP variable to the name of your Flask application file (assuming it's app.py for this example):

```
bash  
  
export FLASK_APP=app.py
```

On Windows:

```
bash  
  
set FLASK_APP=app.py
```

Optionally, set the environment to development for automatic reloading:

```
bash  
  
export FLASK_ENV=development
```

On Windows:

```
bash
```

```
set FLASK_ENV=development
```

## 5. Run the Flask Application

Now, you can run your Flask application using the flask run command:

```
bash
```

```
flask run
```

This command starts the development server. You should see output in the terminal indicating that the server is running.

## 6. Access the Application

Open your web browser and navigate to `http://127.0.0.1:5000/` (or the address provided in the terminal). You should see your Flask application running.

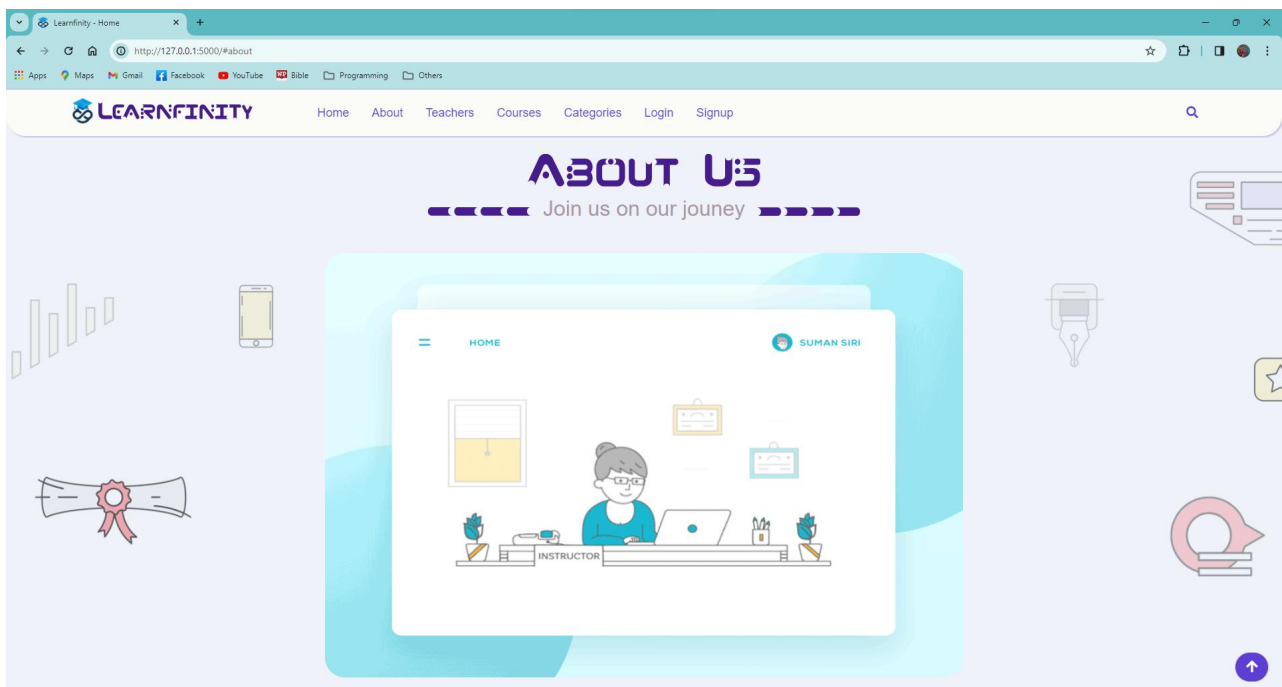
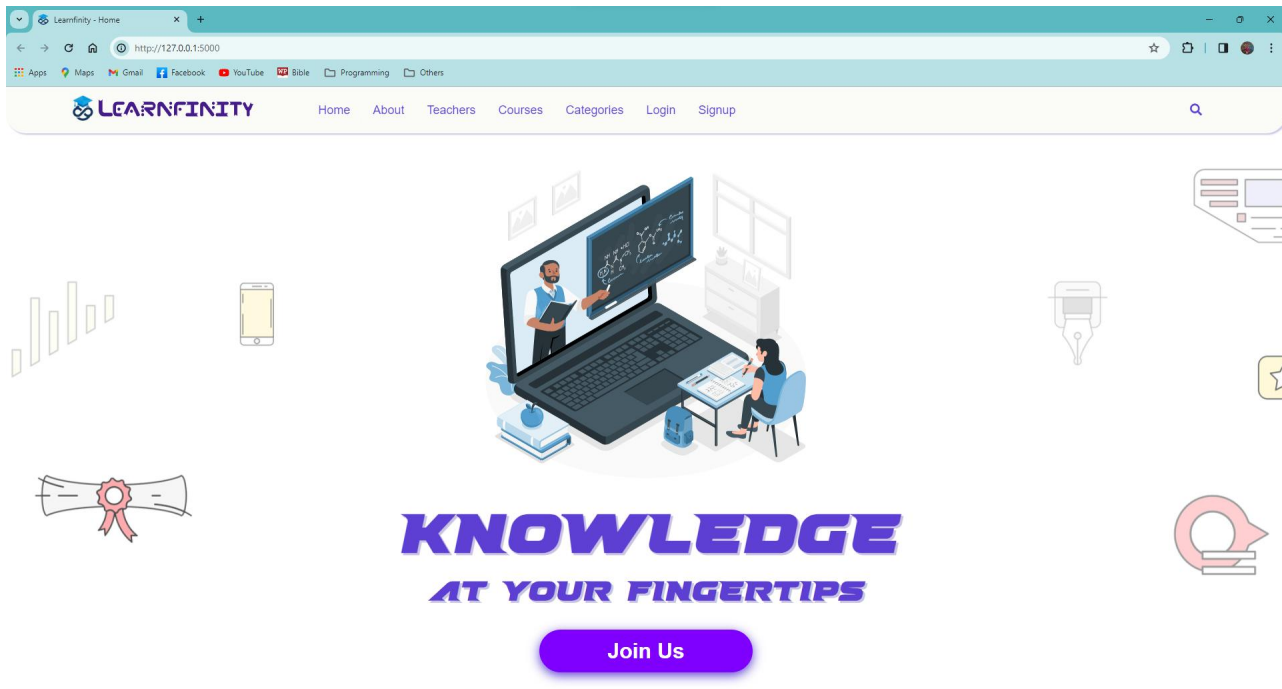


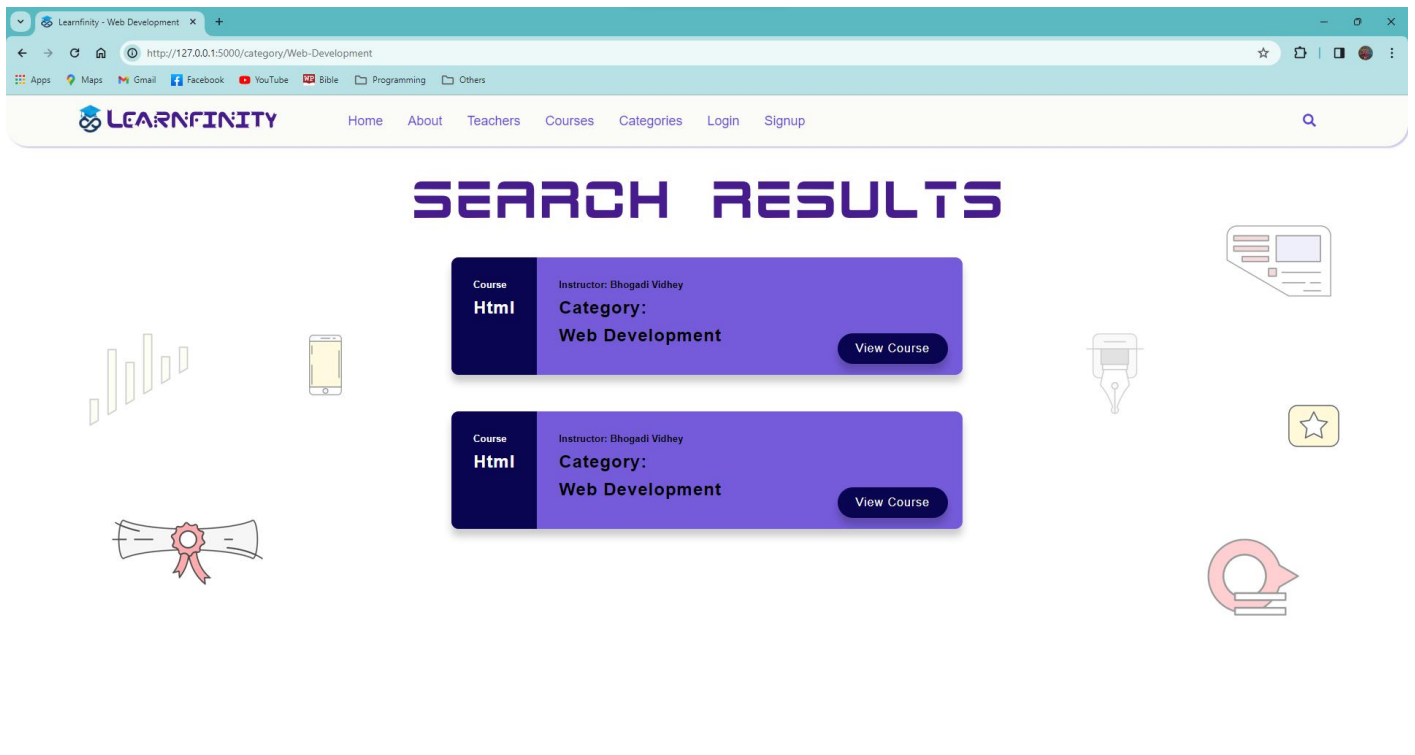
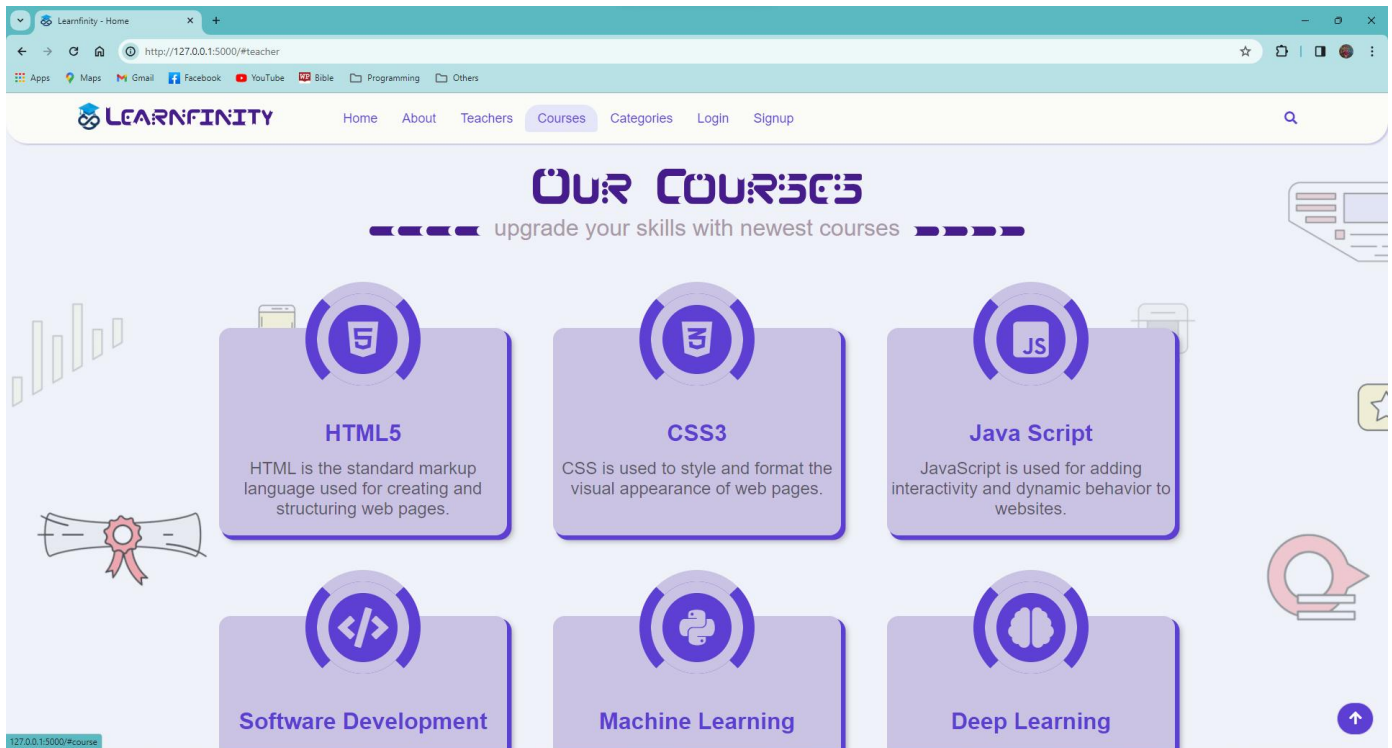
# **CHAPTER IV**

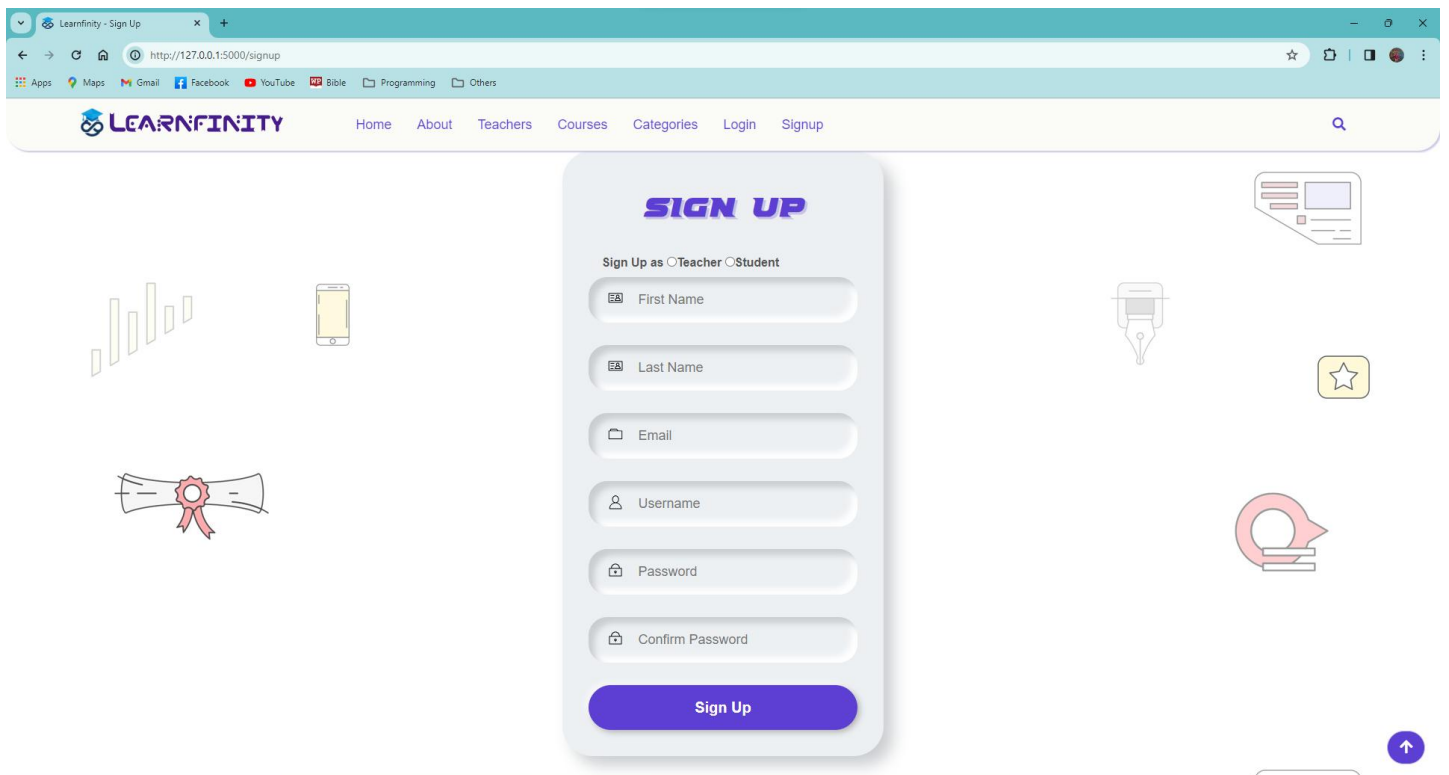
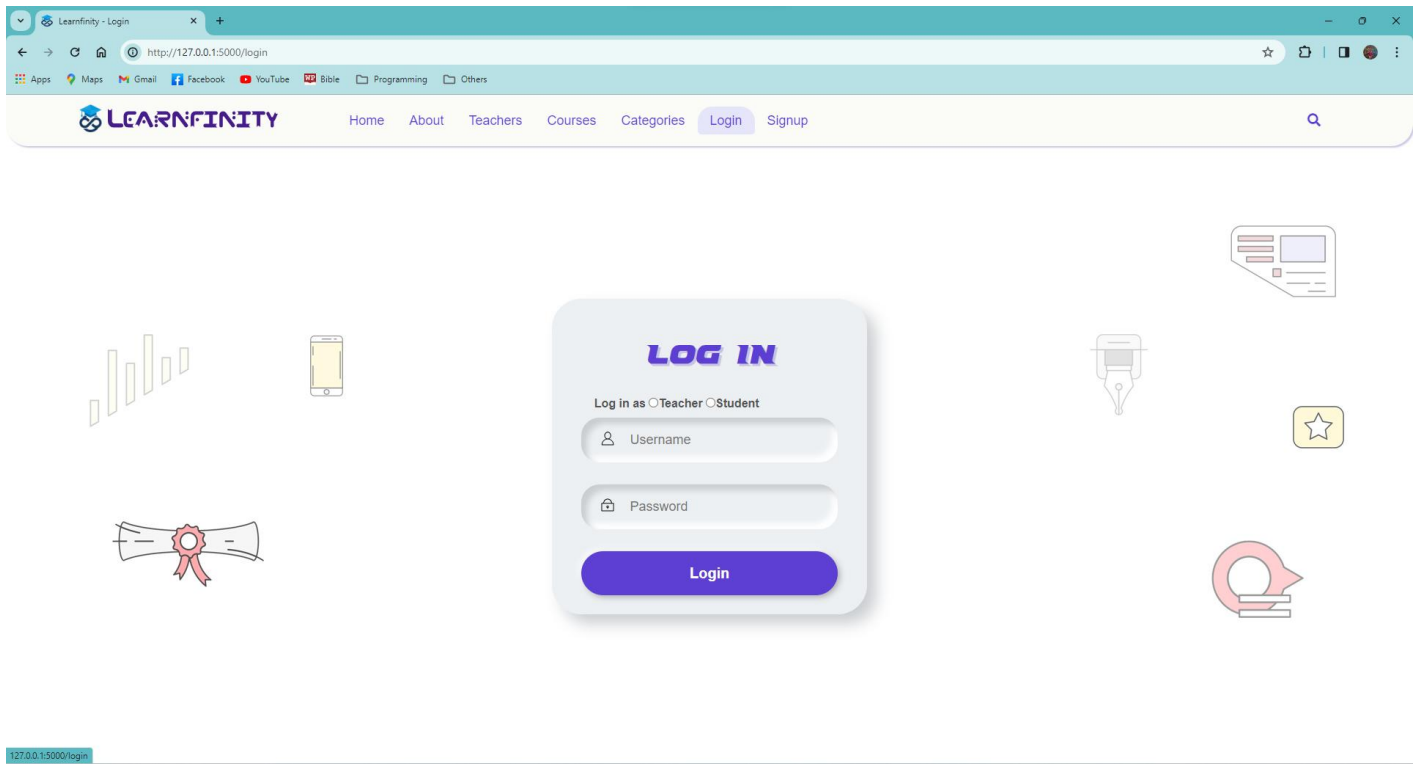
## **OUTPUT SCREENSHOTS**

# SCREENSHOTS OF OUTPUT

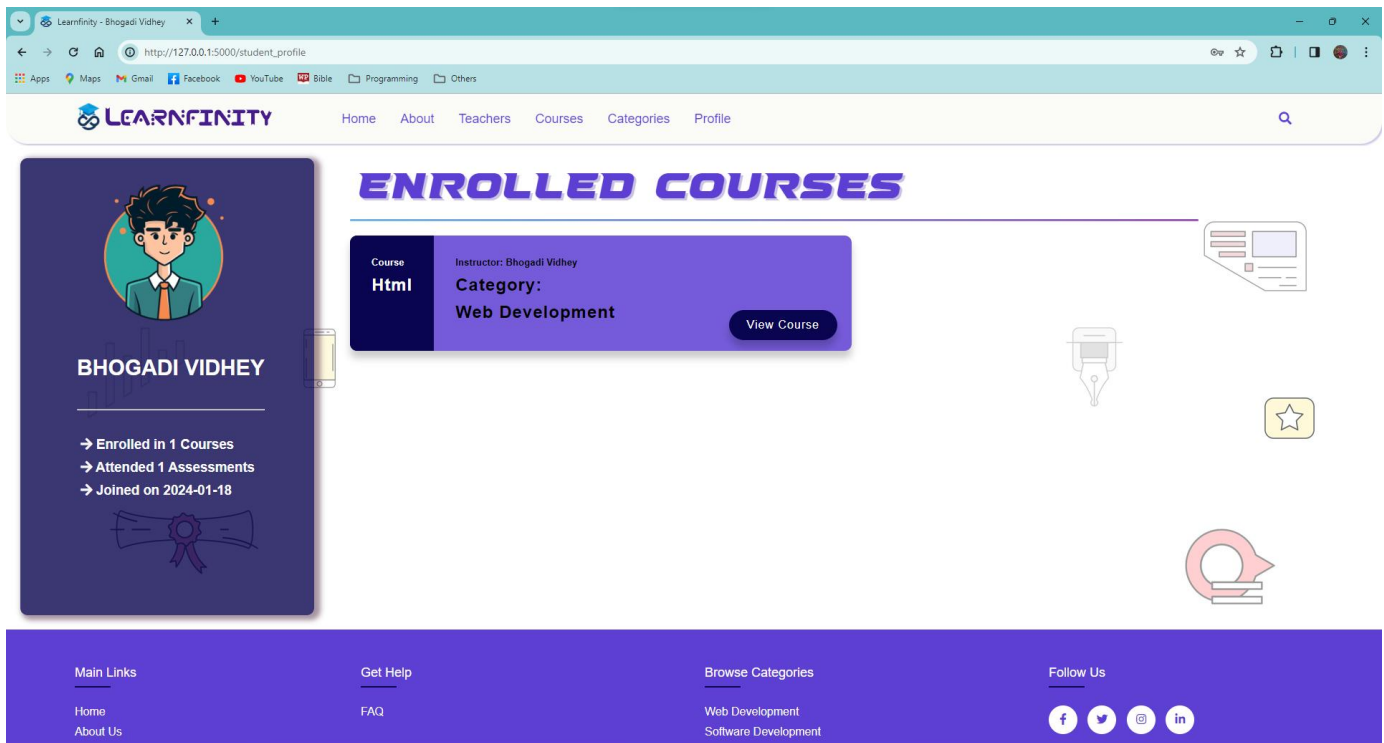
## Home Screen Pages:



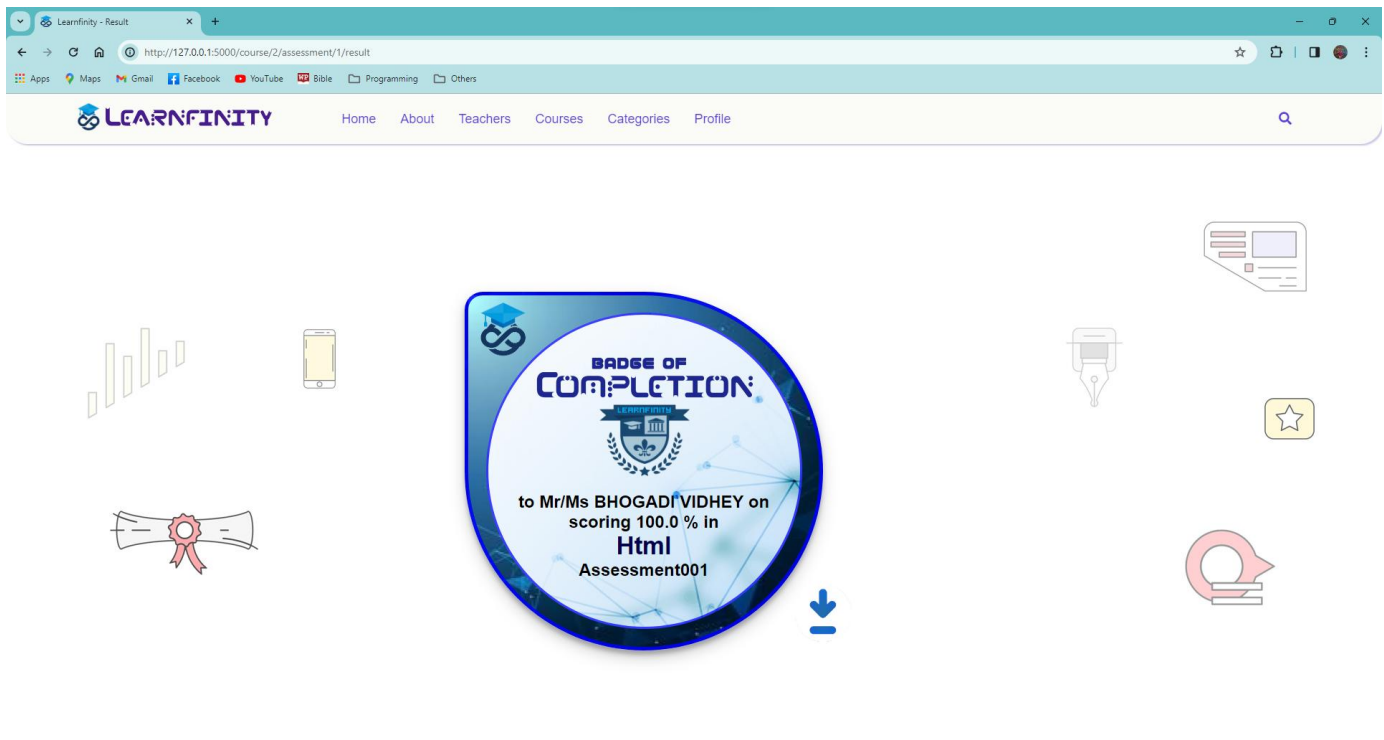




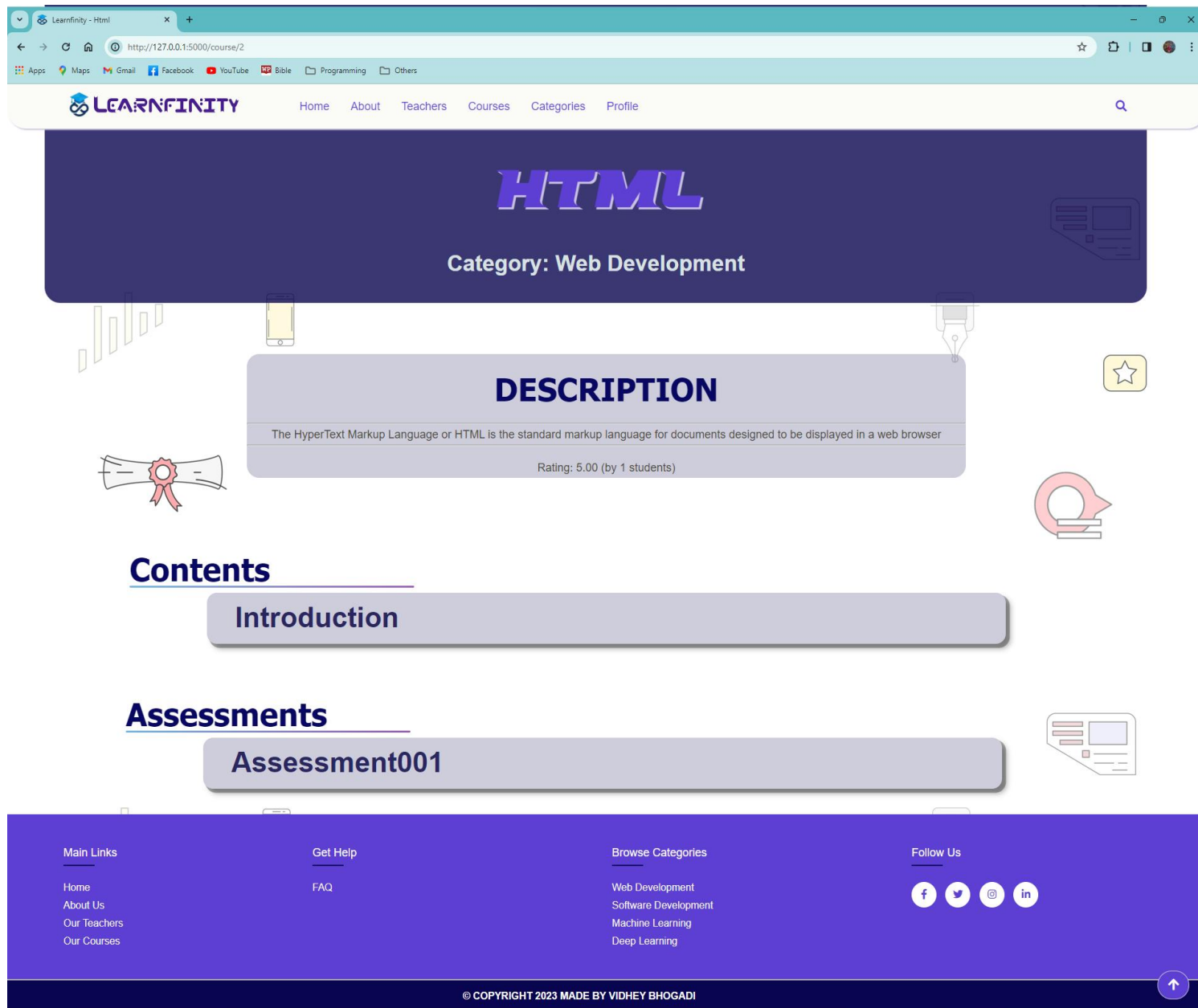
## Student Login Pages :



The screenshot shows the 'student\_profile' page in a web browser. The browser's address bar displays 'http://127.0.0.1:5000/student\_profile'. The page features a navigation bar with the 'LEARNFINITY' logo and links to Home, About, Teachers, Courses, Categories, and Profile. On the left, a profile card for 'BHO GADI VIDHEY' shows a cartoon avatar, enrollment statistics (1 course, 1 assessment, joined 2024-01-18), and a diploma icon. The main section is titled 'ENROLLED COURSES' and lists a course 'Html' by instructor 'Bhogadi Vidhey' in the 'Web Development' category, with a 'View Course' button. The footer contains 'Main Links' (Home, About Us), 'Get Help' (FAQ), 'Browse Categories' (Web Development, Software Development), and 'Follow Us' (Facebook, Twitter, Instagram, LinkedIn).

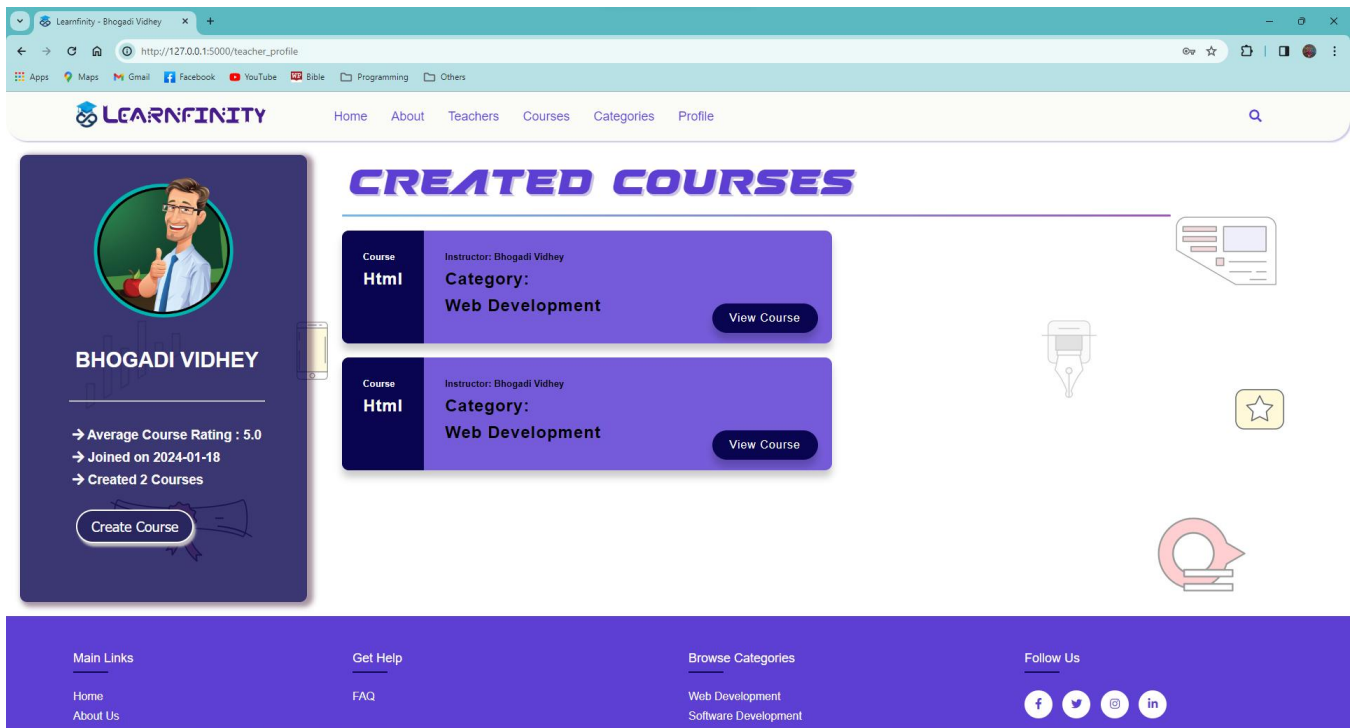


The screenshot shows the 'Result' page in a web browser. The browser's address bar displays 'http://127.0.0.1:5000/course/2/assessment/1/result'. The page features the same navigation bar as the profile page. The main content area displays a large 'BADGE OF COMPLETION' for 'Mr/Ms BHO GADI VIDHEY' who scored 100.0% in 'Html Assessment001'. The badge includes the Learnfinity logo and a graduation cap icon. A download icon is visible below the badge. The footer is identical to the profile page, showing 'Main Links', 'Get Help', 'Browse Categories', and 'Follow Us'.

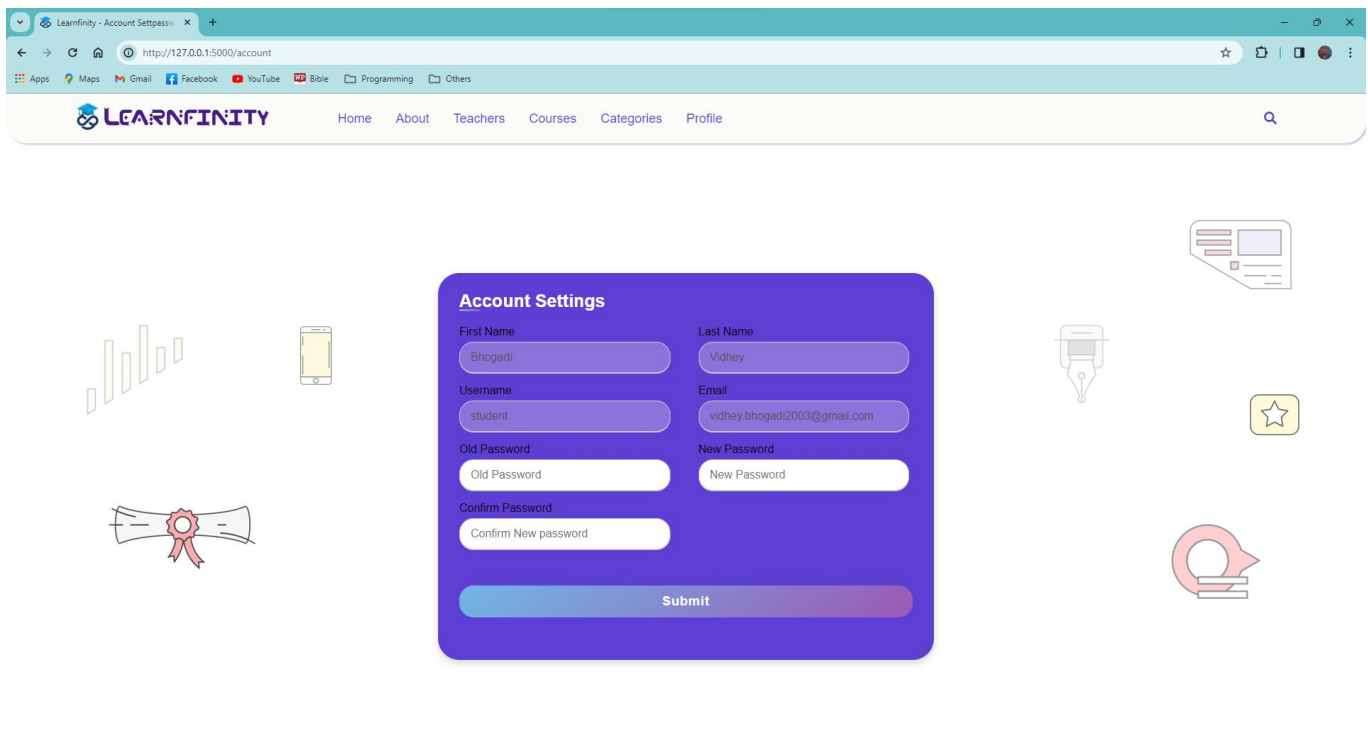




## Administrator Login Pages :

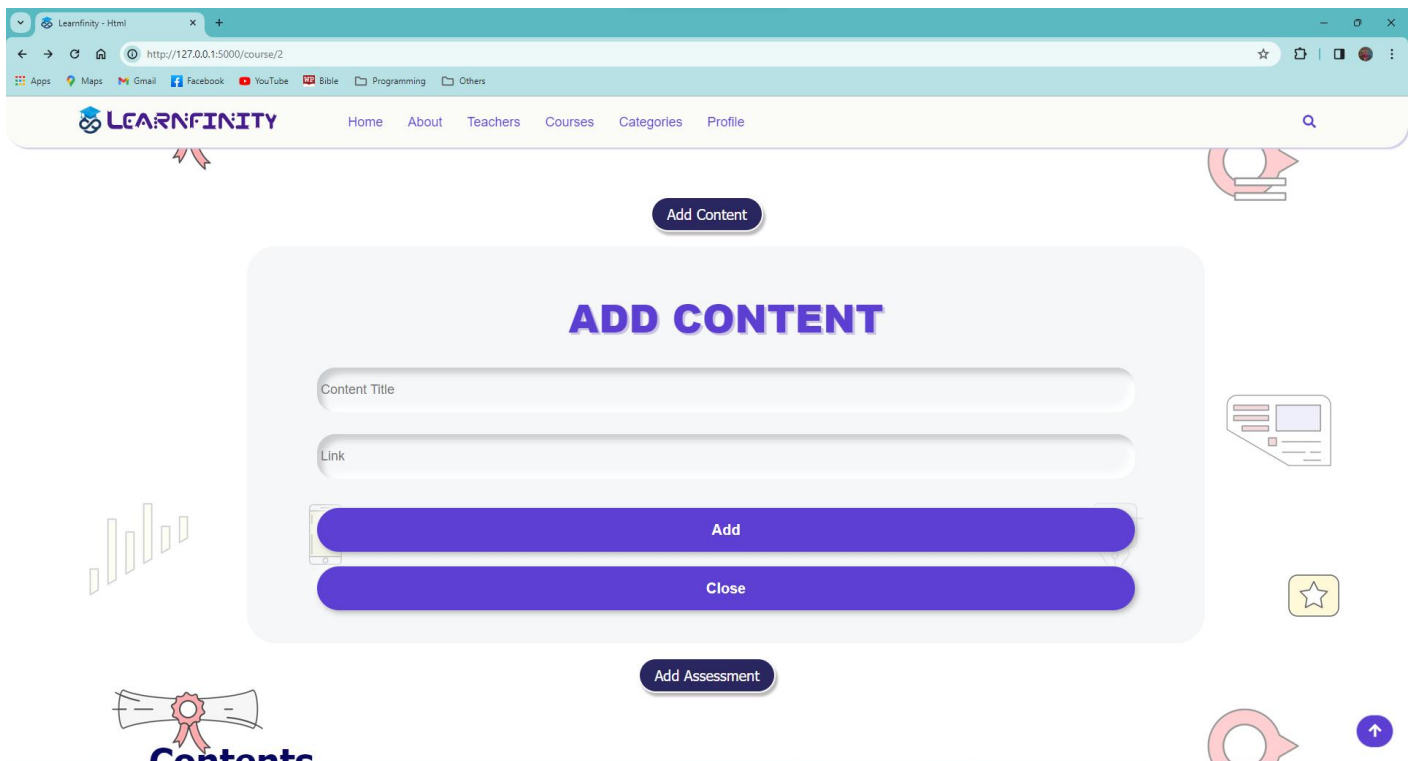
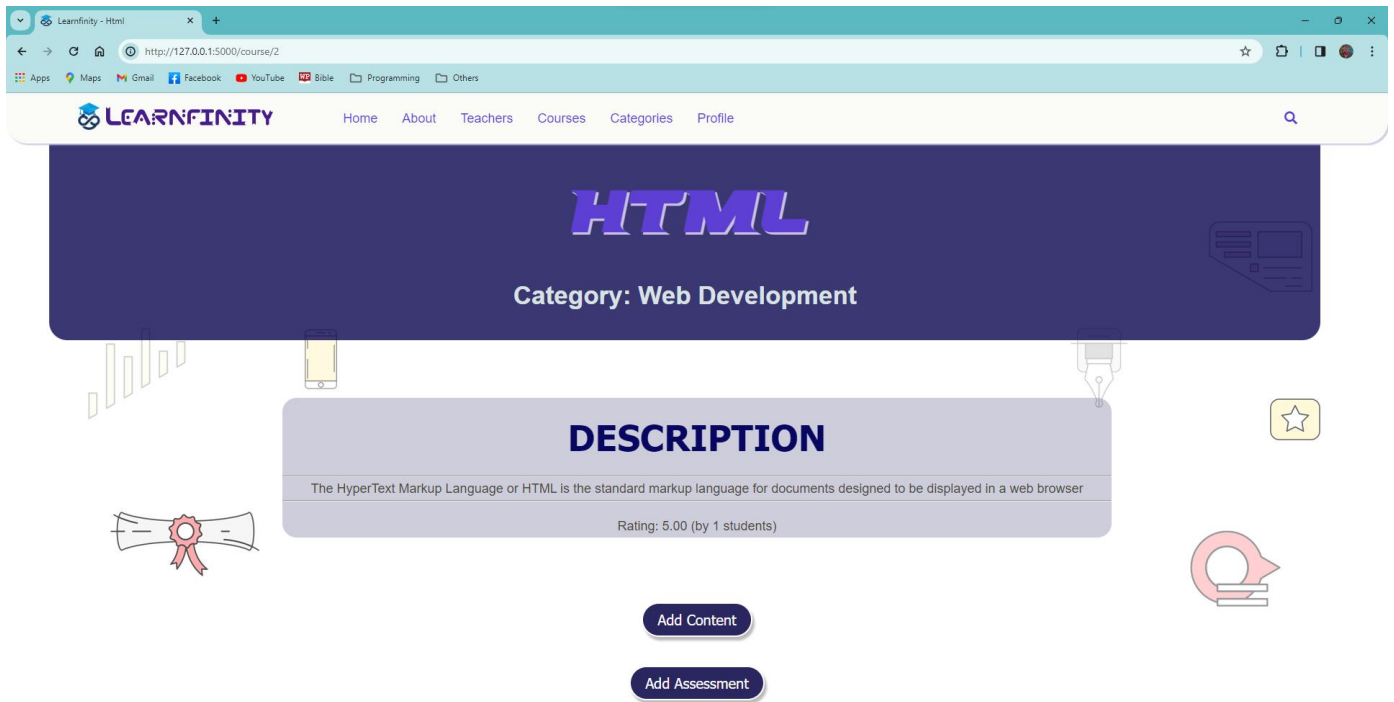


The screenshot shows the 'teacher\_profile' page for Bhogadi Vidhey. The header includes the Learnfinity logo and navigation links: Home, About, Teachers, Courses, Categories, and Profile. The main content area features a teacher profile card on the left with a circular profile picture, name 'BHOGADI VIDHEY', average course rating of 5.0, and a 'Create Course' button. To the right, under the heading 'CREATED COURSES', there are two identical course cards for 'Html' in the 'Web Development' category, each with a 'View Course' button. The footer contains four sections: 'Main Links' (Home, About Us), 'Get Help' (FAQ), 'Browse Categories' (Web Development, Software Development), and 'Follow Us' with social media icons for Facebook, Twitter, Instagram, and LinkedIn.



The screenshot shows the 'Account Settings' page. The header is identical to the previous page. The main content area features a large purple 'Account Settings' form with the following fields: First Name (Bhogadi), Last Name (Vidhey), Username (student), Email (vidhey.bhogadi2003@gmail.com), Old Password, New Password, and Confirm Password. A 'Submit' button is at the bottom of the form. The background includes decorative icons: a bar chart, a smartphone, a ribbon award, a document, a fountain pen, a star, and a magnifying glass.





Learnfinity - Html

http://127.0.0.1:5000/course/2

Apps Maps Gmail Facebook YouTube Bible Programming Others

LEARNFINITY Home About Teachers Courses Categories Profile

Add Assessment

## ADD ASSESSMENT

Assessments

Final Assessment

Add

Close

### Contents

Introduction

### Assessments

Learnfinity - Add Questions

http://127.0.0.1:5000/course/2/assessment/2/add\_questions

Apps Maps Gmail Facebook YouTube Bible Programming Others

LEARNFINITY Home About Teachers Courses Categories Profile

### Add Questions

what is CSS

Code Style Sheets

Cascading Style Sheets

Casting Style Sheet

Coding Styles Sheet

2

ADD

FINISH

**Badge after Course Completion:**



# **CHAPTER V**

## **CONCLUSION**

## CONCLUSION

In conclusion, LEARNFINITY represents a cutting-edge e-learning platform that harnesses the power of advanced technologies to revolutionize the educational experience. With Flask serving as the foundational framework, the platform ensures a seamless and dynamic environment for both teachers and students.

The utilization of Flask's modular architecture and its integrated development server streamlines the process of course creation, content management, and assessments for teachers. Meanwhile, students benefit from a user-friendly interface, simplified course enrollment, and real-time interaction features that foster a collaborative and engaging learning experience.

Furthermore, the integration of MySQL ensures the robust management of the database, safeguarding critical information related to student profiles and assessment results. The addition of Bootstrap enhances the overall design efficiency, delivering a consistent and visually pleasing interface across various devices, thereby ensuring accessibility for all users.

In essence, LEARNFINITY not only addresses the challenges of traditional learning but also sets the stage for a more interactive, collaborative, and efficient educational landscape. By leveraging these technologies, LEARNFINITY emerges as a comprehensive solution, providing a platform where knowledge is not only shared but also dynamically cultivated, tested, and recognized. The project signifies a significant step towards the digital transformation of education, where innovation meets accessibility for a more enriching learning journey.