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Introduction

In today's fast-paced IT industry, professionals are expected to continuously learn, upgrade their technical skills, and apply concepts in real-world scenarios. However, busy schedules, remote locations, and limited availability of convenient time slots often become major barriers to hands-on implementation. This challenge extends to students as well, especially in IT education, where technology evolves rapidly.

Fortunately, technology itself provides a solution!

At **Aptech**, we are committed to leveraging technology in our training model. To revolutionize the way students, learn and apply concepts, we introduce **eProject**—a **structured, and interactive learning environment** designed to simulate real-world project implementation.

What is eProject?

eProject is a step-by-step, guided learning experience that mirrors classroom and lab-based training, allowing students to:

☑ **Practice progressively** using a laddered approach.
☑ **Build robust applications** from the ground up.
☑ **Utilize essential utilities** in user-designed applications.
☑ **Transform individual programs** into a unified, complete application.
☑ **Implement concepts in phases** for deeper understanding.
☑ **Enhance skills and add value** to their expertise.
☑ **Work on real-life projects** with practical relevance.
☑ **Develop complex and useful applications** based on real-world scenarios.
☑ **Receive mentoring and guidance** via email support.

How It Works

Students are required to complete their **eProject**, document their progress, and submit the source code within the allotted timeframe to the **eProjects Team**.

We look forward to your enthusiastic participation and a successful learning journey with **eProject**!

Objectives of the project

The primary objective of this program is to provide a **hands-on experience** in working on real-life projects. These applications serve as building blocks, helping students develop **larger and more robust applications**.

Rather than focusing on teaching specific software, this program aims to **present real-world scenarios** that enable students to create **practical applications** using the available tools.

Before starting the project, students are encouraged to **revise relevant topics** to ensure a strong foundation.

Guidelines for Execution

- Projects should be completed during **lab sessions**, with faculty assistance if needed.
- A **clear understanding of the subject matter** is essential for successful implementation.
- For any queries related to the project or its objectives, students should reach out to the **eProjects Team**.

We look forward to seeing your innovative applications come to life!

Problem Statement

We all need to visit doctors at some point — sometimes in emergencies, other times for routine check-ups. In both cases, patients are often forced to physically visit clinics or wait in long queues for appointments.

MediConnect Group, with years of experience in medical services, aims to address this by creating a **centralized web application** that:

- Allows individuals to **search specialist doctors by location/specialization**.
- Provides the ability to **book, reschedule, or cancel appointments online**.
- Records **complete information about doctors and patients** for easy access.
- Hosts valuable **medical knowledge resources** for the community.

This project solves accessibility issues and modernizes the appointment management process in healthcare.

Functional Requirements

The Web application will be designed with a set of forms/pages with menus representing choice of activities to be performed.

Following are the functional requirements of the application:

For Users:

A. Home Page and Dashboard

- It will display an attractive visual and menus for various operations, including basic functionality such as Registration and Login. After users are logged in, they will be able to access various menus.
- The home page must display a personalized welcome message with the user's name on logging in.
- Website will host information about common Diseases, Preventions and Cures. It will also display the latest medical news and information on inventions in Medical Science on the Home Page.

B. User Management

a) User Registration and Login

- Users must be able to register using their email address and password.

- Provide password recovery and reset functionalities.

b) User Profile Management

- Users must be able to create and edit their profile, including personal information.
- Users must be able to upload a profile picture.

1) Doctor Functions

- **Secure Login** – Doctors log in with valid credentials.
- **Profile Management** – Doctors view and update their specialization, qualifications, and contact details.
- **Availability Scheduling** – Doctors set/modify availability for days, weeks, or months.
- **Appointment Viewing** – Doctors view all scheduled patient appointments.
- **Booking Notifications** – Doctors receive notifications for new bookings, reschedules, or cancellations.

2) Patient Functions

- **Account Registration** – Patients register with unique credentials (mandatory: name, address, phone, email).
- **Secure Login** – Patients log in securely with their credentials.
- **Doctor Search** – Patients search doctors by city and specialization.
- **Doctor Profile Viewing** – Patients view doctors' qualifications and availability.
- **Appointment Booking** – Patients book appointments in real-time based on availability.
- **Appointment Management** – Patients view, reschedule, or cancel appointments.
- **Reminders & Confirmation** – Patients receive confirmations and reminders via email/SMS.

3) Administrator Functions

- **City Management** – Add, update, and delete city records in the master database.
- **Doctor Management** – Add, update, and delete doctor details to maintain accuracy.
- **Patient Management** – Add, update, and delete patient records.

- **User Account Management** – Create, update, and deactivate user accounts/logins.
- **Content Management** – Publish and update content on diseases, cures, prevention, and medical news.

4) Common Features

- **Search & Filter** – Enable users to search/filter across doctors, content, or appointments.
- **Notifications** – Send alerts for bookings, updates, and cancellations.
- **Contact Us Form** – Accept queries with fields for name, email, phone, and message.
- **About Us Page** – Provide information about MediConnect Group services.

Non-Functional Requirements

There are several non-functional requirements that should be fulfilled by the Web application.

These include:

Safe to use: The Web application should not result in any malicious downloads or unnecessary file downloads.

Accessible: The Web application should have clear and legible fonts, user-interface elements, and navigation elements.

User-friendly: The Web application should be easy to navigate with clear menus and other elements and easy to understand.

Operability: The Web application should operate in a reliably efficient manner.

Performance: The Web application should demonstrate high value of performance through speed and throughput. In simple terms, the Web application should be fast to load and page redirection should be smooth.

Security: The Web application should implement adequate security measures such as authentication. For example, only registered users can access certain features.

Availability: The Web application should be available 24/7 with minimum downtime.

Hardware/ Software Requirements

Hardware

- Intel Core i5/i7 Processor or higher
- 8 GB RAM or above
- Color SVGA
- 500 GB Hard Disk space
- Mouse
- Keyboard

Software

Technologies to be used: [Choose as per Course/Semester]
Frontend: HTML5, CSS3, Bootstrap, ReactJS 18 or higher/AngularJS/Angular 9 or higher, JavaScript, jQuery, and XML
Backend: Java 16 or higher (with Apache NetBeans or Eclipse), Java EE 7 or higher/Jakarta EE 9 or higher or C# 7.2 with ASP.NET MVC and ASP.NET MVC Core (optional), Visual Studio 2019 or higher or PHP 7.2 or higher with Laravel Framework or Python 3.0 or higher with Flask or Django
Database: MySQL 8.0 or higher/SQL Server 2019 or higher

Project Deliverables

You will require to design and build the project and submit it along with a complete project report that includes:

- Problem Definition
- Design specifications
- Diagrams such as flowcharts for various activities, Data Flow Diagrams, and so on
- Database Design
- Test Data Used in the Project
- Project Installation Instructions (if any)
- User Credentials for all types of users with passwords

Documentation is considered as a very important part of the project. Ensure that documentation is complete and comprehensive. The consolidated project will be submitted as a zip file with a ReadMe.doc file listing assumptions (if any) made at your end and SQL scripts files (.sql) containing database and table definitions.
Documentation should not contain any source code.

Preferably, host the working Web application on a site and share the URL for evaluation. In addition, **you must submit a video clip** (mp4 file) showing the actual working of the application.

Over and above the given specifications, you can apply your creativity and logic to improve the system.

Sitemap: To understand the flow of **MediConnect** Web Application, you will have to create a Sitemap and add it to the home page of your application.