

FINAL ASSIGNMENT: MVC Web Based Applications Programming

Summer Edition 2026

Project Objective

The objective of the project is to develop a web application based on the MVC (Model–View–Controller) architecture that supports user management and CRUD operations on data stored in a relational database.

The project should focus on designing and implementing a web-based appointment management system for a small dental clinic that offers multiple types of treatments, employs several dentists, and operates three treatment rooms working in parallel. The application should simulate a realistic workflow typical of a small outpatient medical facility and must be implemented using the Model–View–Controller (MVC) architectural pattern with HTML, CSS, JavaScript, PHP, and a relational database such as MySQL or MariaDB.

The purpose of the system is to allow patients to register accounts, log into the application, browse available dental treatments, and schedule appointments based on dentist availability and treatment room capacity. The application should support multiple user roles, including at least patients and administrators representing clinic staff. Patients should be able to create and manage their own appointments, review their upcoming and past visits, and cancel reservations when necessary. Administrators should have extended privileges allowing them to manage system data, including treatments, dentists, appointment schedules, and user accounts.

The application should allow administrators to define available dental treatments and specify their duration and optional pricing information. Treatments should be assignable only to dentists qualified to perform them. The system should also allow administrators to manage dentist profiles and their availability within the scheduling system. Since the clinic operates three treatment rooms simultaneously, the application must incorporate scheduling logic that ensures appointments are assigned only when both a dentist and a treatment room are available at the selected time. The system should therefore prevent overlapping reservations involving the same dentist or the same treatment room and must correctly handle treatment duration when determining available appointment slots.

Appointments created within the system should store information about the patient, assigned dentist, selected treatment, appointment date and time, assigned treatment room, and appointment status. The system should support at least basic appointment status tracking such as scheduled, completed, and cancelled. Administrators should be able to review all reservations in the system and modify or cancel them when necessary. The application should provide administrative functionality for browsing and filtering appointments by selected criteria such as date, dentist, or patient.

Functional Requirements

The application must follow the: MVC architecture. The project must include clearly separated layers:

- Model (database communication)
- View (forms, data presentation, user interface messages)
- Controller (request handling, data validation, communication between Model and View)

Required Technologies

The project must be implemented using: HTML/CSS/JavaScript and PHP (or other object-oriented programming) + MySQL or MariaDB

The project may be completed individually or in groups of 2 or 3 students.

PROJECT DELIVERY:

To pass the course, students must **present the project** and **submit the project documentation**.

Presentation:

The project presentation may take place during classes or online. In the case of an online presentation, students must arrange the presentation in advance with the course instructor via email at w.moscibrodzki@gmail.com or by phone at +48 608 520 830.

Documentation:

The documentation must be prepared as a PDF file and should include:

- Task analysis
- Description of system functionality
- System design (including description of data structures, MVC structure, database schema, and ERD diagram)
- At least five screenshots of the working application

The PDF document must be sent by email to: w.moscibrodzki@gmail.com

Email subject line: MVC MERITO 2026

The email message must include: first names, last names, and student ID numbers of all project participants.

DEADLINE: May 24, 2026