



University
of Windsor

School of Computer Science
<https://cs.uwindsor.ca>

COMP-3077 Winter 2024
Web Data Management

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Final Project

Instructions:

- Mark: **30 points**.
- Due Date: **Friday March 25** (end of day)

As part of your coursework in web data management, you are tasked with creating a small website (5 web pages) that demonstrates your understanding of key principles in web data management with a 2 pages report (in .pdf format). The sections to be included in the report are mentioned below and highlighted. Any software and tools to implement the website are acceptable. You may select your website in the following topic areas of data management systems:

Topic, scope, and use cases

- Job posting website where hiring managers post jobs descriptions for openings in their companies, job seekers surf the website and query the posts to find a matching job for their skills.
- Hospital management system, the hospital has a number of beds which can be occupied by patients, each patient has doctor(s) who is/are taking care of him.
- Library Management Systems that categories and index the books in the library. Students and teachers can borrow the books for certain time. The system assesses a fine to the record of any borrower who fails to return library materials on or before their due date. Accumulated fines will result in the suspension of borrowing privileges.
- Hotel Management system where each room in the hotel has a status, such as (occupied, vacant, or out of service). Guests occupy the room(s). Each room has it is own assets and categorized based on those assets. Check online hotel websites for room categorizing and price. Different user levels (privileges) accounts such as clients, staff, and manager.



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Use cases for important scenarios should be included. Examples for hotel management system scenarios can be:

1. The guest books a room online for a night, (s)he selects the type of room that (s)he likes.
2. The guest pays for reservation using a credit or debit card.
3. Check-in and cancellation options.

Clients and service providers

A user using your website can be either a guest or an authenticated user (staff, manager). Each user should have an account and be able to register and login to the system.

The client is a user who is looking for a service, a client can be defined as follows:

- A client in a hospital management system is a patient who is looking for a doctor's appointment.
- A client in the library management system is the borrower who can be one of two categories, a student or a teacher. A student can borrow the book for 1 month, while a teacher can borrow the book for the whole semester.
- A client on a job posting website can be a recruiter or job seeker.

A service provider is a user who is providing specific services to the client; each service provider will have privileges that can suit the role of him/her.

- For Hospital management system, a doctor, nurse, and secretary are examples of service providers.
- For the hotel management system, the receptionist can check in/out the guest; the manager can give a discount. etc.



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Questions to ask yourself before building the website

Think of some important questions about your website; these queries will help you design the project. For Job posting website, you may think of questions like:

- What is the most wanted job?
- How many openings are there for a particular job? Do some online research.
- What is the most paid job?
- What are the openings in some area/city/country? etc.

Any non-serious questions will lead to mark deduction. Discuss at least 5 questions with your answers and approaches in the report under a section (Design Ideas and Questions).

Website design

Follow the principles covered in the class when needed to design your website, you need to draw the initial design of your site using hand sketching or software tool (paint), draw at least 6 sketches for different pages of your website to address the following points:

- The theme of your site: such as the colors, logos, look and feel, the footer, and the navigation bar.
- Responsive design: wireframes should show how the site will look like in different screen sizes.
- Designing for accessibility: how your website must be accessibility friendly.

Include all sketches and wireframes as images in the report under a section (Website Sketches and Wireframes)



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Database design

Your website must have a fully normalized database tables design; all relationships must clearly be identified as one-to-one, many-to-one, and many-to-many. Use any drawing tool available to draw your database design. The links between tables must be defined. No implementation is required at this stage, only the design is required (the columns, data type, and relations). **Include the database design as images in the report under a section (Database Design)**

Data Analysis

The website should include at least 2 graphs illustrating performance, sales, and services that are provided in a time period. For example, how many job openings are posted for each month during a specific year. For each room category what was the occupancy rate for each month in 2022? For the library, what is the lending rate for each category during the year? How many appointments have been done each month for each department in the hospital?

Other features

- Enable the users (guests, staff, and manager) to register, login and logout of the website.
- Create a Contact Us form in one of the pages for users to send messages feedback. The form should be only 4 fields, name, email, message and submit button.

Submission

- All the website files should be saved inside public_html folder on MyWeb.
- A link to the website home page and the pdf report should be submitted on Brightspace.