

Mahmud Hossain

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SUMMARY OF QUALIFICATIONS

- **Third-year Computer Science CO-OP student** at the University of Ottawa.
- Proficient in **Java, Python, C**, and **SQL**, applied in over five academic and personal projects, with additional experience using **HTML, CSS, JavaScript**, and **XML** for full-stack web development.
- Hands-on experience with databases and tools such as **PostgreSQL, Maven, Apache Tomcat, Flask**, and **Firebase**, used across more than 4 projects including web and mobile applications.
- Strong foundation in **software development**, including **web, mobile**, and **systems programming**, with practical experience in building **relational databases, REST APIs**, and **interactive user interfaces**.
- Collaborative and adaptable team member with strong **communication, problem-solving**, and **organizational skills**, developed through academic projects completed in teams ranging from three to six members.

EDUCATION

Bachelor of Science in Computer Science (CO-OP) - University of Ottawa

2023 - present

Expected graduation: 2027

PROJECTS

[e-Hotels Web Application](#)

Web Application | *PostgreSQL, Java (Servlets/JSP), Maven, Apache Tomcat, HTML/CSS*

- Collaborated in a **team of 3** to design and implement a full-stack hotel management system with **PostgreSQL** backend and **Java Servlets/JSP** frontend.
- Packaged and deployed the application using **Maven** for build automation and **Apache Tomcat** for deployment.
- Built customer portal for registration, profile management, and advanced room search with booking functionality.
- Developed employee portal for check-ins, direct renting, and hotel/room administration.
- Created a **relational schema** and **ER diagram**, ensuring proper integrity constraints and optimized SQL queries for availability checks.

[Event Attendance Management System \(EAMS\)](#)

Android Application Development | *Java, XML, Firebase*

- Collaborated in a **team of 6** to design and implement a **mobile application** streamlining event registration and attendance tracking.
- Developed the frontend interface using **XML** and integrated it with a robust backend written in **Java**.
- Utilized **Firebase** for **real-time database** management and user authentication.
- Designed user roles: **Attendee, Organizer**, and **Administrator**, each with specific functionalities to manage events and registrations.
- Implemented features including: attendee/organizer registration, administrator approval for new user, organizer event creation, event search, event registration approval, event management.
- Conducted basic **unit testing** to ensure application stability and functionality.

Expense Tracker

Web Application | Python, SQLite, HTML, CSS, Flask, Matplotlib

- Developed a web application using **Python** and **Flask** to allow users to track and manage personal expenses efficiently.
- Implemented secure user authentication with password hashing and session management via **Flask-Login**.
- Designed and managed the database with **SQLite** using **Flask-SQLAlchemy**, enabling robust and scalable data storage.
- Created dynamic data visualizations by generating expense summaries and pie charts with **Matplotlib** and served them as interactive reports.
- Built the frontend with **HTML** and **CSS** to provide a responsive and user-friendly interface.

Text Editor

Terminal Based | C, ncurses/conio.h

- Developed a **cross-platform terminal-based text editor** in **C** supporting file operations (open, save, create) and basic text editing functionalities (insert, delete, navigate).
- Used **low-level system programming** techniques such as manual memory management, file I/O, and cursor control.
- Utilized **ncurses** library for **Unix-based** systems and **conio.h** for **Windows** to handle terminal input/output.

Personal Portfolio

Website | HTML, CSS, JavaScript

- Designed and developed a **responsive personal portfolio** website to showcase academic achievements, technical skills, and projects.
- Integrated contact form using Formspree and optimized site for **mobile and desktop performance**.
- Applied **modern CSS styling and JavaScript enhancements** for smooth navigation and interactivity.

TECHNICAL SKILLS

- **Programming Languages:** Java, Python, C, SQL, HTML, CSS, JavaScript, XML
- **Additional Exposure(Coursework):** Scheme, Prolog, Go
- **Databases:** PostgreSQL, SQLite, Firebase (Realtime Database)
- **Frameworks & Libraries:** Flask, SQLAlchemy, Matplotlib, JSP/Servlets
- **Tools & Platforms:** Maven, Apache Tomcat, Git, IntelliJ IDEA, pgAdmin, Eclipse
- **Development Areas:** Object-Oriented Programming, Web Development, Mobile Development, System Programming, Database Design & Optimization

ADDITIONAL SKILLS

- Strong communication, collaboration, and leadership abilities gained from academic teamwork.
- Effective at task organization, prioritization, and documentation.
- Fluent in **English** and **Bengali**.