



## Cover page

Project title: DevForce

Academic Year: 2025

Group Members: Rasheed Hendawi

Department Name: Computer Engineering

Mohammad AbuRehan

**Project Type** Software

Supervisor Name: Dr. Luai Malhis

### Form at:

- Single space, Times New Roman.
- 12 pt,
- Maximum 1 page.

### Abstract Body:

#### Items must be provided in the Abstract:

- Why do you think this project is important? Please explain the significance of this Project in brief.
- In your point of view what are the important aspects that should be covered in the project?
- Objective(s): In your view, please explain the main objectives of the project.
- Methodology: Give a brief outline of the application development process.
- Had this project been done before? Are there any similar applications available today?
- **Note:** Please deliver this abstract early to ensure that your Project has been approved by the department's projects committee. **Registration will not be done without this approval.**



## Project's Abstract:

The goal of this graduation project is to design and implement a web-based platform for competitive programming, inspired by the widely-used Codeforces website. This platform will offer users the ability to participate in algorithmic problem-solving contests, submit code in multiple programming languages, receive instant feedback via a judging system, and engage with a community of developers through rankings, discussions, and virtual contests.

The core functionality will include user registration and authentication, contest creation and management, problem submissions with automated judging, leaderboards, and user profiles. A responsive, modern user interface will be developed to ensure a seamless experience across both web and mobile devices. To achieve this, the project will utilize **React** for building a dynamic and interactive frontend, while **ASP.NET Core** will serve as the backend framework to handle API endpoints, authentication, and business logic.

In order to extend the platform's reach to mobile users, a dedicated mobile application will be developed using **React Native**, ensuring a consistent user experience across Android and iOS. The system's architecture will follow a micro services pattern where suitable, and all services will be containerized using **Docker** to ensure portability, scalability, and ease of deployment. Additional technologies such as **PostgreSQL** (or another relational database), **Redis** (for caching and queue management), and **Nginx** (as a reverse proxy and load balancer) may also be integrated as part of the infrastructure.

This project aims not only to replicate essential features of platforms like Codeforces, but also to introduce enhancements in usability, user engagement, and educational tools for learners. By the end of the development cycle, *CodeChallenge* will represent a fully functional, scalable, and extensible system for online programming competitions and skill-building.