

Individual Assignment 1

Objective

Design and implement a **minimal software application** that will later be used for DevOps pipeline design (Individual Assignment 2).

Requirements

Application Scope: Choose a simple use case, e.g.:

- To-do list manager
- URL shortener
- Weather dashboard (using an open API)
- Basic blog (CRUD posts)
- Other ideas may be proposed (discuss with professor for approval)

Recommended tech stack

- Backend: Node.js, Python (Flask/Django/FastAPI), or similar
- Frontend: Optional, but encouraged (HTML/CSS/JS or minimal React)

Core Features (at least 2 of the following):

- CRUD functionality (Create, Read, Update, Delete)
- Persistent storage (local JSON file, SQLite, or simple DB)
- RESTful API endpoints or minimal UI
- Other ideas may be proposed (discuss with professor for approval)

Documentation:

- Software Development Life Cycle (SDLC) model chosen and justification
- UML/Class diagram or basic architecture diagram
- README with setup instructions

Version Control:

- Repository setup on Git (individual repo)
- At least 3 commits with meaningful content and messages

Deliverables

- Git repository with code
- Short report (5-6 pages) including:
 - SDLC explanation & chosen model
 - Architecture overview diagram
 - Reflection: how this app could be scaled or adapted for DevOps practices

Grading criteria

Features - 60%

- 25% - First working feature
- 25% - Second working feature
- 10% - Third working feature or exceptional quality in the two required features

Documentation & Report - 20%

- 5% - Clear explanation and justification of chosen SDLC model.
- 5% - Reflection: how this app could be scaled or adapted for DevOps practices

- 5% - UML/Class diagram or architecture diagram included and accurate.
- 5% - README with setup instructions that allow someone else to run the project without extra support.

Code Quality & Version Control - 20%

- 10% - Clean, readable, and logically organized code (naming conventions, comments, modularity).
- 10% - Proper use of Git: individual repo, at least 3 meaningful commits with descriptive messages.