

MCDA5550 – PWA Assignment

Overview

Your task is to build a Progressive Web App (PWA) that combines task management with motivational content. The app should display a **random motivational quote**, and include a **to-do** list with deadlines, while working reliably offline properly.

Submission Instructions

1. Create a GitHub repository for the project.
2. If the repository is private, grant access to [A00446838](#) and [simonachkar](#).
3. Submit the repository link on Brightspace.

Application Features

Motivational Quote

- Display a random motivational quote when the app loads
- Quotes may be:
 - Hardcoded
 - Loaded from a local JSON file
 - Fetched from an API (must work offline using caching)

To-Do List with Deadlines

Users must be able to:

- Add a task with: Task description & Deadline date
- View all tasks
- Delete tasks (or mark them as completed)

Each task must visually reflect its deadline status:

-  Yellow: Deadline is approaching (in a week)
-  Orange: Deadline is very close (in less than 3 days)
-  Red: Deadline has passed

Technical Requirements

PWA Implementation

- Build a fully functioning PWA using either plain JavaScript, Vite, Create React App, or a framework of your choice.
- Include a **manifest** file with appropriate icons, a background color, and a start URL to ensure full PWA compatibility.
- Implement a **service worker** to enable **offline capabilities** and resource caching.

Data Storage

- Use **IndexedDB** to store and manage tasks
- Tasks must persist across:
 - Page reloads
 - Browser restarts
 - Offline usage

Offline Functionality

- The app should function offline using service workers and IndexedDB
- The app must **clearly indicate when it is offline**

User Interface

- UI must be functional and responsive
- Clear visual distinction for:
 - Task deadlines
 - Offline status
 - Design does not need to be fancy, but it must be usable and responsive

Documentation

- Include a README.md file with setup and usage instructions, documenting any assumptions or external resources used.

Notes

- **Focus on Functionality!** While a basic level of UI design is required, the primary focus should be on the functionality and technical implementation of the PWA features.
- Feel free to use assets and code snippets provided in the lecture's **repository**. This can help accelerate your development process.
- To inspect and debug your app, right-click on the page, select 'Inspect', and navigate to the "Application" tab in **Chrome DevTools**. This is important for reviewing service workers, IndexedDB, and manifest implementation.
- During development and testing, regularly clear your browser's storage to ensure you're seeing the most recent updates. This can be done through the '**Clear Storage**' section in the 'Application' tab of Chrome DevTools.
- Make regular commits to your GitHub repository to track changes and facilitate version control. This also ensures your work is consistently backed up.

Additional Code

To assist with the learning curve of IndexedDB and Dexie, here is an example function for removing a task from the database:

```
// Removes a task record from the database by id.
function removeTask(id) {
  return db.tasks
    .delete(id)
    .then(() => {
      console.log(`Task with id ${id} was removed`);
      return true;
    })
    .catch((err) => {
      console.error("Failed to remove task: ", err);
      return false;
    });
}
```

Rubric (10 pts)

- **PWA Implementation (3 pts)**
 - App is functional
 - Manifest file is included
 - Service workers are correctly implemented
 - The app should function offline using service workers and IndexedDB
- **User Interface (3 pts)**
 - UI is functional and responsive
 - Include capabilities to **add**, **view**, and **delete** tasks
 - Deadline Indicators displayed correctly
- **Offline Indicator (1 pt)**
 - Clearly show in the UI when the app is offline
- **Data Storage (2.5 pts)**
 - Data is successfully stored and managed within IndexedDB or localStorage.
 - Ensure tasks can be **added**, **retrieved**, and **deleted**.
- **Documentation & Code Quality (0.5 pt)**
 - README.md file, instructions...
 - Code is well-organized, properly structured, and commented

Quote: "Believe you can and you're halfway there."
— Theodore Roosevelt

Add New Task

Task:

Deadline:



Add Task

To-Do List

Finish the report (Due: Tomorrow)

Delete

Buy groceries (Due: June 5)

Delete

Schedule a meeting (Due: Today)

Delete

Submit assignment (Due: May 20)

Delete



Online



Offline Mode