Take-Home Exercise: Event Management API

Requirements

Build a REST API for managing events and attendee registrations with these specifications:

- **Events**: Create, read, update events (title, description, date, max capacity)
- **Registrations**: Users can register/unregister for events
- **Business Rules:**
  - Cannot register for past events
  - Cannot exceed event capacity
  - Cannot double-register same user for same event
- **Data Storage**: Use in-memory data structures
- **API Endpoints**: Standard CRUD + registration endpoints
- **Testing**: Include unit tests for business logic
- **Authentication**: Authentication and authorization are out of scope for this exercise
- **Backend Language & Framework:** Use one of the following backend languages and frameworks:
  - C# / ASP.NET Core
  - Node.js / NextJS
  - Python / FastAPI / Flask
- **Frontend Framework:** Create a frontend for managing events and attendee registrations using one of the following JavaScript frameworks or libraries:
  - React (Vite) SPA
  - Next.js
  - Vue
  - Angular

Instructions:

1. **Setup:**
   - Implement the backend API with the specifications
   - Implement the frontend application with the specifications or use Postman to interact with the backend API
2. **Submission:**
   - Provide a link to a public Git repository containing the source code for both the backend and frontend applications. Feel free to create two separate repos
   - Include a README file with instructions on how to run the application locally, including any necessary setup steps
3. **Evaluation Criteria:**
   - **Code Quality:** Clean, well-structured, and documented code
   - **Functionality:** The application meets the requirements and functions correctly
   - **User Experience:** Intuitive and straightforward UI/UX
   - **Efficiency:** Efficient handling of data and API interactions