

.NET Pre-Interview Task – Weather Forecast API

Objective

Build a minimal ASP.NET Core Web API application (.NET 5 or later) that retrieves weather forecasts for a specific city. The focus is on clean architecture, authentication, testability, and performance.

Requirements

1. JWT-based Authentication

- Implement login and registration using JWT tokens.
- No Identity Framework needed; simple in-memory or local DB user storage is fine.

2. Weather Endpoint

- GET /weather?city=CityName
- This should be an authenticated endpoint.
- Weather data should be fetched via a mocked service, using Service/Repository Pattern.

3. Performance Optimization

- Cache the weather response for each city using in-memory caching (IMemoryCache) or IDistributedCache.

4. Testing

- Provide unit and integration tests covering registration, login, and the weather service logic.

Expected Endpoints

Method	URL	Description
POST	/api/auth/register	Register new user
POST	/api/auth/login	Authenticate user
GET	/api/weather?city=xx	Get city weather data

Submission Guidelines

- - Submit via GitHub (public or private repo with access granted).
 - The repo should include:
 - Clear folder structure.
 - README with setup and run instructions.
 - Tests that run successfully.
 - Deadline: 2 days from receipt of the task.