

TO-DO API

Write web API for TO-DOs. On high level, you should design and implement application with users, to-dos and subtasks.

Technical infra requirements:

- Create Web API on .NET 6
- Application should have layered (Onion) or clean architecture, each layer should have its own data structures, mapping should be using Mapster.
- Write Middleware for culture (optional), global exception handling, and request-response logging.
 - o Global exception handler should handler all exceptions and return proper Problem detail. Also, information about the exception should be logged in a file.
 - o Request-response middleware should log information about request (user info, IP, request information [time, body, quarry params, etc.], response [time, body, etc]).
- The application should support Swagger documentation (Examples and description is optional).

Data structures:

This is our proposition; you are more than welcome to add any properties.

- User:
 - o Username (MAX Length: 50)
 - o PassworHash
- To-Do:
 - o Title (MAX Length: 100)
 - o Status (Active, Done, Deleted)
 - o Target completion date (NULLABLE)
 - o List of subtasks
 - o OwnerId (FK to Users)
- Subtask:
 - o Title (MAX Length: 100)
 - o TodoItemId
- ActionLogs – **OPTIONAL** (It is called Audit Table, you can google ways to do it)
 - o Date
 - o ItemType
 - o ItemId
 - o OperationType (ENUM: Created, Updated, Deleted, MarkedAsDone, ...)
 - o CollumnName

- OldResult
- NewResult
- STATUS NOT REQUIRED FOR THIS TABLE
- BaseEntity / IEntity
 - Id
 - CreatedAt
 - ModifiedAt
 - Status (Active, Deleted)

Acceptance criteria:

- As a user, I want to register to use the to-do application. For that I should make POST request to /v1/users with username and password passed from body.
- As a user, I want to login to use the API. If not authenticated, I should not have access to any endpoint but login. For login, I should make POST request to v1/users/access-token with username and password passed from the body. If the request is valid, JWT should be returned.
- As a user, I want to create a new TO-DO item. If I am authenticated, I should be able to make POST request to v1/todos/ with Title and target completion date passed from body. The API should get the userId from JWT and store in DB. The proper response should be returned.
- As a user, I want to get all my to-dos. If I am authenticated, I should be able to make GET request to v1/todos/ and get all my to-dos. I should be able to pass OPTIONAL query parameter for filtering by to-do status (DELETED to-dos should be impossible to retrieve).
- As a user, I want to get a specific to-do. If I am authenticated, I should be able to make GET request to v1/todos/{id} and get a specific to-do. If the to-do with the id does not exist or it is in DELETED status, I should get 404 error.
- As a user, I want to edit an existing to-do item. If I am authenticated, I should be able to make PUT and PATCH request to v1/todos/{id} and pass some arguments. Available parameters are title and target completion date.
- As a user, I want to update status of to-do item. If I am authenticated, I should be able to make POST request to v1/todos/{id}/done.
- As a user, I want to delete to-do. If I am authenticated, I should be able to make DELETE request to v1/todos/{id}.
- As a user, I want to add subtask. If I am authenticated, I should be able to make POST request to v1/subtasks/ and pass title and todoItemId from body.
- As a user, I should be able CRUD operations to subtasks, too.
- **OPTIONAL** For to-do items, I want to log every action made on the particular item. I want to have the ability to get action list for the to-do item (from GET: v1/todo/{id}/logs and v1/subtasks/{id}/logs)