# **Taskque – Application Documentation**

## **Overview**

Taskque is a **Kanban-style task management web application** built for **demo and portfolio purposes** by *Irina Zaika*. It allows users to create, organize, and track tasks visually using customizable columns and grouping options.

The application integrates **Microsoft Entra ID (Azure Active Directory)** for secure authentication and authorization, ensuring that only authenticated users can access and manage tasks.

## **Key Features**

### **1. Task Management**

* Create, edit, and delete tasks.
* Assign tasks to users.
* Set task priorities (**Low, Medium, High**).
* Assign due dates.
* Track progress via status: **To Do, In Progress, Done, Closed**.

### **2. Kanban Board**

* Visual drag-and-drop interface for moving tasks between statuses.
* Configurable **grouping options**:  
  + **Assigned To**
  + **Priority**
  + **Group**
  + None (default flat view)
* Dynamic UI updates when tasks are moved.

### **3. Task Actions**

* **Edit task** using a modal form with pre-filled details.
* **Close task** directly from the Done column.
* Automatic UI update after status changes.

### **4. Security**

* **Authentication:** Only available to Microsoft Entra ID (Azure AD) users.
* **Authorization:**
  + Admins can view/manage all tasks.
  + Regular users can manage only their own tasks.
* OAuth 2.0 and OpenID Connect for secure access.

### **5. Demo Application Notice**

* Data may be reset or deleted at any time.
* Intended for demonstration and educational purposes only.

## **Technology Stack**

| **Layer** | **Technology** |
| --- | --- |
| **Frontend** | Razor Pages (ASP.NET Core), Bootstrap 5, JavaScript (Drag & Drop, Fetch API) |
| **Backend** | ASP.NET Core MVC, C# |
| **Database** | Entity Framework Core (SQL Server or InMemory for demo) |
| **Auth** | Microsoft Entra ID (Azure Active Directory) |
| **Hosting** | Local or Azure App Service |

## **How It Works**

### **1. Login**

* Users authenticate via **Microsoft Entra ID**.
* Role is determined from Azure AD group membership.

### **2. Kanban Board**

* Tasks are displayed in columns according to their **status**.
* If grouping is enabled, tasks are split into **swimlanes** based on the selected grouping.

### **3. Drag & Drop**

* Moving a task to another status or group automatically sends an update to the backend.
* If grouping is by **priority**, **assignee**, or **group**, the relevant field is updated along with status.

### **4. Task Editing**

* Clicking the **pencil icon** opens a modal to edit task details.
* All form fields are pre-filled using data attributes from the task element.

### **5. Closing Tasks**

* Clicking the **checkmark icon** in the Done column marks a task as closed via a backend API call.
* The task disappears from the board after confirmation.

## **API Endpoints**

### **Kanban Board**

| **Method** | **Endpoint** | **Description** | **Parameters / Body** |
| --- | --- | --- | --- |
| GET | /Kanban/KanbanBoard?groupBy={groupBy} | Returns a grouped Kanban board view. | **Query:** groupBy (None, Priority, AssignedTo, Group) |
| POST | /Kanban/UpdateTaskFromDrag | Updates a task’s status and grouping after drag-and-drop. | **Body (JSON):**  { id: number, status: string, groupBy: string, groupValue: string } |
| POST | /Kanban/CloseTask/{id} | Marks a task as **Closed**. | **Route:** id (int) |

### **Tasks**

| **Method** | **Endpoint** | **Description** | **Parameters / Body** |
| --- | --- | --- | --- |
| GET | /Tasks/Index | Returns list of tasks for the current user (or all tasks if admin). | — |
| GET | /Tasks/Create | Returns task creation form. | — |
| POST | /Tasks/Create | Creates a new task. | **Body:** TaskItem model |
| POST | /Tasks/Edit | Updates task details (admin or owner only). | **Body:** TaskItem model |
| POST | /Tasks/Delete/{id} | Deletes a task (admin or owner only). | **Route:** id (int) |
| GET | /Tasks/AdminDashboard | Returns admin task dashboard (all tasks). | — |
| GET | /Tasks/UserDashboard | Returns user task dashboard (only their tasks). | — |
| POST | /Tasks/UpdateDescription | Updates only a task’s description. | **Form:** id (int), description (string) |
| GET | /Tasks/Search | Filters tasks by title, status, priority, due date, and assignee. | **Query:** searchTitle, status, priority, dueDate, assignedTo, isAdminBoard |
| GET | /Tasks/Reset | Reloads dashboard with default view. | **Query:** isAdminBoard (bool) |

#### **DragUpdateModel**

{

"id": 123,

"status": "Done",

"groupBy": "Priority",

"groupValue": "High"

}

#### **TaskItem**

{

"id": 123,

"title": "Example Task",

"description": "Details about the task",

"status": "ToDo",

"priority": "Medium",

"dueDate": "2025-08-12T00:00:00",

"assignedTo": "user@example.com",

"group": "Development"

}

## **Security & Privacy**

* No cookies, tracking, or analytics.
* Only task-related data is stored.
* See Privacy Policy for full details.

## **Known Limitations**

* Not production-ready — data may be deleted anytime.
* No real-time collaboration (changes are not synced instantly across sessions).
* No file attachments or comments on tasks.