Process Document and Final Checklist

# API Implementation

| **Requirement** | **Implementation Status** |
| --- | --- |
| **Proper use of REST API Best Practices** | Used **separate routes** for **search, sort, filter, pagination** following REST principles. |
| **Proper HTTP Response Status Codes** | Used **200 (OK), 400 (Bad Request), 401 (Unauthorized), 404 (Not Found)** correctly. |
| **Create multiple routes for Searching, Sorting, Filtering, and Pagination** | Implemented **4 endpoints** in index.js:  /search  /sort  /filter  /paginate |

# Code Quality

| **Requirement** | **Implementation Status** |
| --- | --- |
| **Well-Organized and Readable Code** | Followed **structured folder layout** (routes/, middleware/, utils/). |
| **Error Handling & Edge Cases** | Handled:  - **Missing query parameters** (e.g., ? field= in sorting).  - **Invalid authentication** (401 Unauthorized).  - **Page number out of range** (404 No data found). |

# Project Structure (Using Boilerplate)

| **Requirement** | **Implementation Status** |
| --- | --- |
| **Used Boilerplate or Proper Node.js Structure** | Followed **Express REST API structure** (used routes/index.js). |

# Caching and Authentication Middleware

| **Requirement** | **Implementation Status** |
| --- | --- |
| **Caching (Avoid Reading data.json Every Time)** | Implemented **in-memory cache** in dataService.js. |
| **Authentication Middleware (Authorization Header Required)** | Used Authorization: Bearer <apikey> in authMiddleware.js. |

# API Testing

## Overview

The API functionality was tested and verified using Postman by setting the following authorization header:

“Authorization: Bearer my\_secret\_key”

## API Endpoints

**To fetch all data** - GET <http://localhost:3000>

**Search** - GET <http://localhost:3000/search?query=cat>

**Sort** - GET <http://localhost:3000/sort?field=asc>

**Filter** - GET <http://localhost:3000/filter?category=Animals&api=adoptapet>

**Paginate** - GET <http://localhost:3000/paginate?page=1&limit=10>

## Web URL Testing

The API was also tested via a web browser by providing the API key directly in the URL:

<http://localhost:3000/search?query=dog&apikey=my_secret_key>

# Ensuring Test cases

Verified that all test cases are passing, as they were written using Jest within the template itself. A minor modification was made to include authentication.

