

CMPS 350 – Assignment 4

NutriSnap – Smart Meal Logging Web App

Deadline : 27-04-2025

Scenario: Startup Launch

You're hired by **NutriSnap**, a health-focused tech startup creating a simple and smart meal logging assistant. Their mission is to help users build better eating habits by tracking meals, satisfaction, and nutrition tags. You're building the MVP (minimum viable product) using file-based storage before they upgrade to a full relational database in the next phase.

What to Build

You will build a web app with:

1. A backend API that reads/writes meal data from a JSON file named meals.json.
2. A frontend UI that displays meals, allows filtering, adding, editing, and shows useful insights using Next.JS.

Part A: RESTful API (50 marks)

HTTP Method	Endpoint	Description
GET	/api/meals	Returns all meals stored in the system.
GET	/api/meals/:id	Returns a specific meal by its id.
POST	/api/meals	Adds a new meal. Expects a JSON body with meal details.
PUT	/api/meals/:id	Updates an existing meal with new data. Requires full meal object in the body.
DELETE	/api/meals/:id	Deletes a meal by its id.
GET	/api/meals/tag/:tag	Returns all meals that include the given tag (e.g., lunch, vegetarian).
GET	/api/meals/date/:yyyy-mm-dd	Returns all meals logged on a specific date in YYYY-MM-DD format.
POST	/api/meals/:id/rate	Adds a new satisfaction rating (1-5) to the meal. Requires { rating: number } in body.
GET	/api/meals/:id/average-rating	Returns the average satisfaction rating for the meal with the given id.
GET	/api/meals/summary	Returns a summary report: total meals and average satisfaction per tag.

Use fs extra to read/write to **meals.json**. Sanitize and validate all input. Handle errors gracefully.

Testing

- Use mocha and chai test.js **OR** Postman to test API routes.

Part B: Frontend UI (50 marks)

Use React or Next.js to create a dynamic interface that communicates with your API. When implementing the **Add and Edit forms**, you should use server actions.

Features:

- Add Meal , Edit/Delete , Filter meal by Tag/Date , Rate Meals , View Summary , Toggle Description , - Simple Navigation.

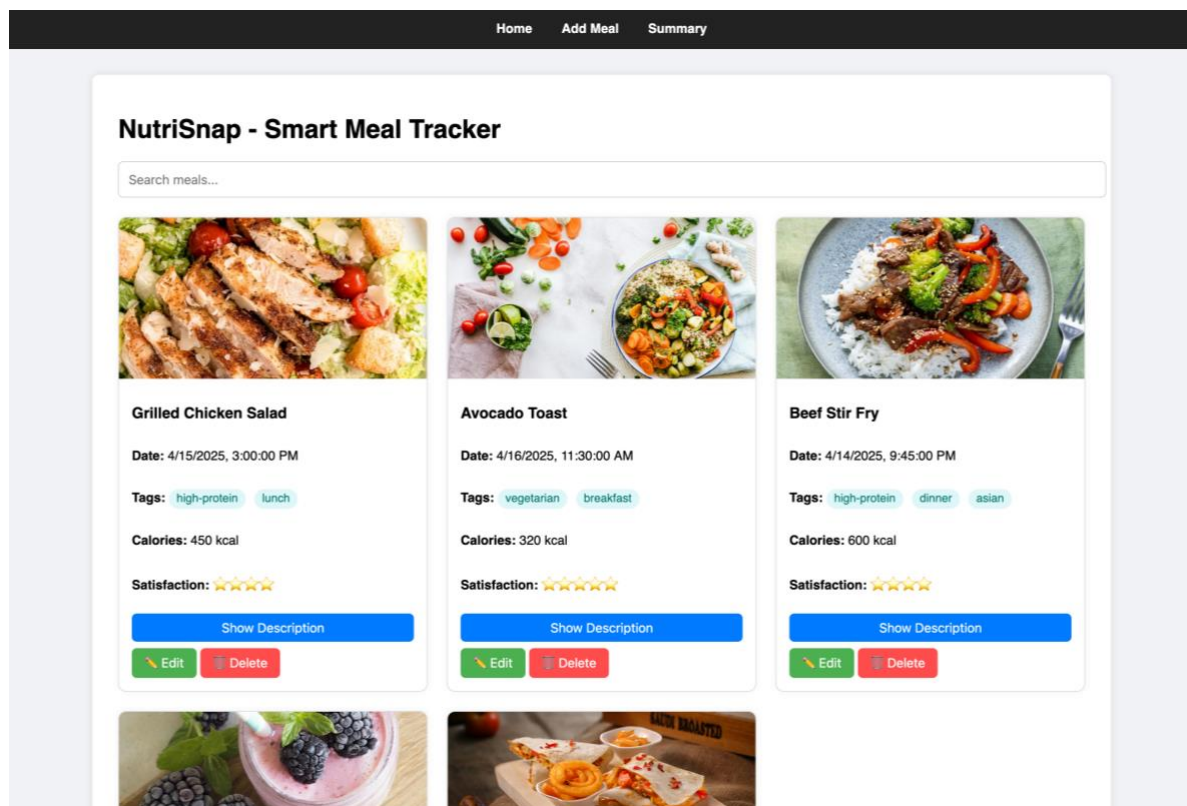


Figure 1 Display Meals and Filter by Tag/Date

HomeAdd MealSummary

Add New Meal

Meal Title

Tags (comma-separated)

Calories

Meal Description

Satisfaction (1-5)

Image URL

Save Meal

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Figure 3 Add Meal

HomeAdd MealSummary

Edit Meal

Grilled Chicken Salad

high-protein, lunch

450

Grilled chicken breast with lettuce, cherry tomatoes, and light dressing.

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https://www.maebells.com/wp-content/uploads/2024/06/Grilled-Chicken-Caesar-Salad-14.jpg

Save Meal

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Figure 2 Edit Meals

HomeAdd MealSummary

Meal Summary

Summary of meals grouped by tags.

Tag	Total Meals	Avg Satisfaction
#high-protein	2	★ 4.00
#lunch	2	★ 3.50
#vegetarian	2	★ 5.00
#breakfast	1	★ 5.00
#dinner	1	★ 4.00
#asian	1	★ 4.00
#snack	1	★ 5.00
#drink	1	★ 5.00
#quick	1	★ 3.00
#protein	1	★ 3.00

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Figure 4 : Show Meal Summar

Submission

After you complete the Assignment, fill in the ***TestingDoc-Grading-Sheet.docx*** and save it inside the ***assignment4*** folder. Push your work to your GitHub repository.