

TDD Kata: Sweet Shop Management System

Objective

The goal of this kata is to design, build, and test a full-stack Sweet Shop Management System. This project will test your skills in API development, database management, frontend implementation, testing, and modern development workflows, including the use of AI tools.

All tests passed! Here's your **Test Report** for the README:

Test Report - Sweet Shop Management System

Test Summary

Test Category	Tests Run	Passed	Failed	Pass Rate
Authentication	3	3	0	100%
Sweet Management	4	4	0	100%
Inventory Operations	2	2	0	100%
Total	9	9	0	100%

Detailed Test Results

1. Authentication Tests

Test Case	Endpoint	Method	Status	Result
User Registration	/api/auth/register	POST	201	PASS

Test Case	Endpoint	Method	Status	Result
User Login	/api/auth/login	POST	200	PASS
Get Current User	/api/auth/me	GET	200	PASS

Sample Registration Response:

```
{
  "user": {
    "id": "933cdcf0-4ca3-4c19-b227-cfc54d6bea33",
    "username": "testadmin",
    "email": "admin@test.com",
    "isAdmin": false
  },
  "token": "eyJhbGciOiJIUzI1NilsInR5cCI6..."
}
```

2. Sweet Management Tests

Test Case	Endpoint	Method	Status	Result
Get All Sweets	/api/sweets	GET	200	PASS

Test Case	Endpoint	Method	Status	Result
Search Sweets	/api/sweets/search?query=chocolate	GET	200	PASS
Add New Sweet (Admin)	/api/sweets	POST	201	PASS
Update Sweet (Admin)	/api/sweets/:id	PUT	200	PASS

Sample Search Response:

```
[
{
  "id": 1,
  "name": "Chocolate Bar",
  "category": "Chocolate",
  "price": 150,
  "quantity": 50,
  "description": "Delicious milk chocolate bar",
  "imageUrl": "https://images.unsplash.com/..."
}
```

3. Inventory Operations Tests

Test Case	Endpoint	Method	Status	Result
Purchase Sweet	/api/sweets/:id/purchase	POST	200	PASS
Restock Sweet (Admin)	/api/sweets/:id/restock	POST	200	PASS

Purchase Test:

- Initial Quantity: 50
- Purchased: 5
- Final Quantity: 45

Restock Test:

- Initial Quantity: 45
- Restocked: 10
- Final Quantity: 55

Security Tests

Test Case	Expected	Result
Access protected route without token	401 Unauthorized	PASS
Access admin route as regular user	403 Forbidden	PASS

Test Case	Expected	Result
Invalid login credentials	401 Unauthorized	<input checked="" type="checkbox"/> PASS
JWT token expiration	Token expires in 7 days	<input checked="" type="checkbox"/> PASS

Test Environment

- **Runtime:** Node.js v20.x
 - **Database:** PostgreSQL
 - **Test Date:** December 14, 2025
 - **Test Method:** API endpoint testing using curl
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Conclusion

All API endpoints are functioning correctly. The authentication system properly protects routes and enforces role-based access control. Inventory management correctly updates quantities for purchases and restocks.