

Sweet Shop Management System - Test Report

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Project: Backend API Testing with Jest & Supertest

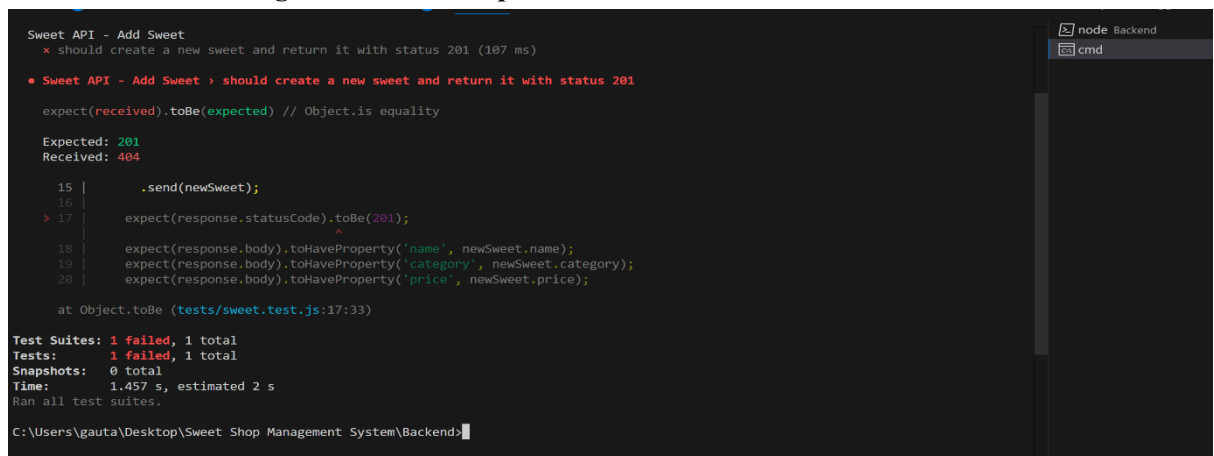
Objective: To validate the backend functionality of the Sweet Shop Management System through automated tests. Each test ensures correctness of CRUD operations, inventory handling, and API integration.

Test Categories:

1. Add Sweet
2. Invalid Add Sweet (Missing Fields)
3. Update Sweet
4. Update Non-existent Sweet
5. Delete Sweet
6. Delete Already Removed Sweet
7. Get All Sweets
8. Search & Sort
9. Purchase Sweet
10. Restock Sweet
11. Purchase Overflow Check

Test Results & Evidence:

1. Test case for adding Sweet to the shop:



```
Sweet API - Add Sweet
  ✕ should create a new sweet and return it with status 201 (107 ms)

  ● Sweet API - Add Sweet › should create a new sweet and return it with status 201

    expect(received).toBe(expected) // Object.is equality

    Expected: 201
    Received: 404

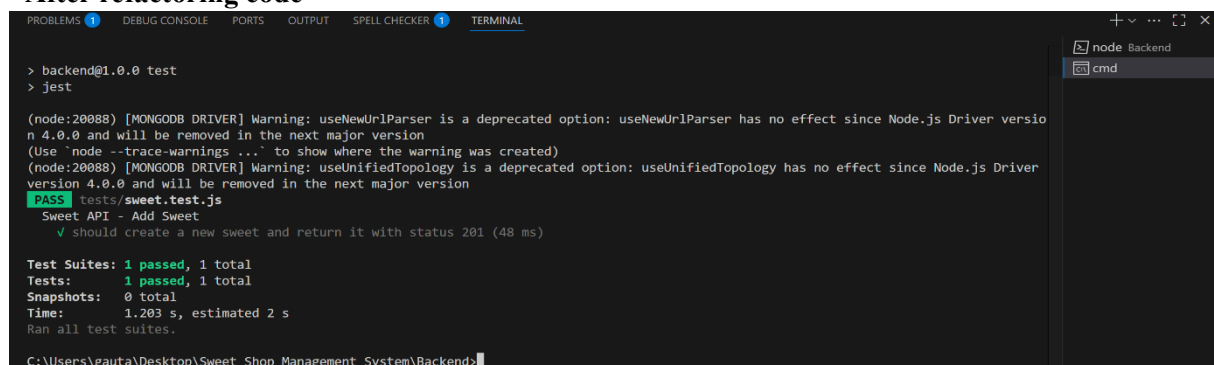
    15 |         .send(newSweet);
    16 |
    > 17 |         expect(response.statusCode).toBe(201);
       |                                     ^
    18 |
    19 |         expect(response.body).toHaveProperty('name', newSweet.name);
    20 |         expect(response.body).toHaveProperty('category', newSweet.category);
    21 |         expect(response.body).toHaveProperty('price', newSweet.price);

    at Object.toBe (tests/sweet.test.js:17:33)

Test Suites: 1 failed, 1 total
Tests:       1 failed, 1 total
Snapshots:  0 total
Time:        1.457 s, estimated 2 s
Ran all test suites.

C:\Users\gauta\Desktop\Sweet Shop Management System\Backend>
```

*After refactoring code



```
PROBLEMS 1 DEBUG CONSOLE PORTS OUTPUT SPELL CHECKER 1 TERMINAL

> backend@1.0.0 test
> jest

(node:20088) [MONGODB DRIVER] Warning: useNewUrlParser is a deprecated option: useNewUrlParser has no effect since Node.js Driver version 4.0.0 and will be removed in the next major version
(node:20088) [MONGODB DRIVER] Warning: useUnifiedTopology is a deprecated option: useUnifiedTopology has no effect since Node.js Driver version 4.0.0 and will be removed in the next major version
PASS tests/sweet.test.js
  Sweet API - Add Sweet
    ✓ should create a new sweet and return it with status 201 (48 ms)

Test Suites: 1 passed, 1 total
Tests:       1 passed, 1 total
Snapshots:  0 total
Time:        1.203 s, estimated 2 s
Ran all test suites.

C:\Users\gauta\Desktop\Sweet Shop Management System\Backend>
```

2. Test case for updating sweet in the shop

```
• Sweet API - Update Sweet > should return 404 if sweet to update does not exist

expect(received).toBe(expected) // Object.is equality

Expected: "Sweet not found"
Received: undefined

100 |
101 |   expect(response.statusCode).toBe(404);
> 102 |   expect(response.body.message).toBe('Sweet not found');
     |                                     ^
103 | });
104 |
105 | });

at Object.toBe (tests/sweet.test.js:102:33)

Test Suites: 1 failed, 1 total
Tests:       2 failed, 2 passed, 4 total
Snapshots:  0 total
Time:        1.991 s
Ran all test suites.
```

*After Refactoring code

```
at Object.log (tests/sweet.test.js:69:15)

PASS tests/sweet.test.js
  Sweet API - Add Sweet
    ✓ should create a new sweet and return it with status 201 (53 ms)
    ✓ should return error message for missing fields (7 ms)
  Sweet API - Update Sweet
    ✓ should update the sweet and return status 200 (32 ms)

Test Suites: 1 passed, 1 total
Tests:       3 passed, 3 total
Snapshots:  0 total
Time:        1.265 s, estimated 2 s
Ran all test suites.
```

3. Test case for removing sweet from the shop

```
• Sweet API - Delete Sweet > should return 404 if sweet is already deleted or not found

expect(received).toBe(expected) // Object.is equality

Expected: "Sweet not found"
Received: undefined

134 |
135 |   expect(response.statusCode).toBe(404);
> 136 |   expect(response.body.message).toBe('Sweet not found');
     |                                     ^
137 | });
138 |
139 |

at Object.toBe (tests/sweet.test.js:136:35)

Test Suites: 1 failed, 1 total
Tests:       2 failed, 4 passed, 6 total
Snapshots:  0 total
Time:        2.274 s, estimated 3 s
Ran all test suites.
```

*After Refactoring code

```
Sweet API - Delete Sweet
  ✓ should delete the sweet and return status 200 (19 ms)
  ✓ should return 404 if sweet is already deleted or not found (13 ms)

Test Suites: 1 passed, 1 total
Tests:       6 passed, 6 total
Snapshots:  0 total
Time:        2.53 s, estimated 3 s
Ran all test suites.
```

4. Test case to view all the sweets from the shop

```
• Sweet API - View All Sweets > should return a list of all sweets
expect(received).toBe(expected) // Object.is equality
Expected: 200
Received: 404

160 |     const response = await request(app).get('/api/v1/getsweets');
161 |     expect(response.statusCode).toBe(200);
> 162 |     expect(Array.isArray(response.body)).toBe(true);
     |                                     ^
163 |     expect(response.body.length).toBeGreaterThanOrEqual(2);
164 |
165 |
    at Object.toBe (tests/sweet.test.js:162:33)
Test Suites: 1 failed, 1 total
Tests:       1 failed, 6 passed, 7 total
Snapshots:   0 total
Time:        2.431 s, estimated 3 s
Ran all test suites.
C:\Users\gauta\Desktop\Sweet Shop Management System\Backend>
```

*After Refactoring code

```
PROBLEMS 7 DEBUG CONSOLE PORTS OUTPUT SPELL CHECKER 7 TERMINAL
C:\Users\gauta\Desktop\Sweet Shop Management System\Backend>npm test

> backend@1.0.0 test
> jest

PASS tests/sweet.test.js
PASS tests/search.test.js

Test Suites: 2 passed, 2 total
Tests:       11 passed, 11 total
Snapshots:   0 total
Time:        2.674 s
Ran all test suites.
C:\Users\gauta\Desktop\Sweet Shop Management System\Backend>
```

5. Test to search and sort sweets from the shop

```
• Sweet API - Search and Sort > should return sweets sorted by quantity descending
expect(received).toBe(expected) // Object.is equality
Expected: 200
Received: 404

64 |     const res = await request(app).get('/api/v1/searchSweets?sortBy=quantity&order=desc');
65 |
> 66 |     expect(res.statusCode).toBe(200);
     |                                     ^
67 |     const qty = res.body.sweets.map(s => s.quantity);
68 |     const sorted = [...qty].sort((a, b) => b - a);
69 |     expect(qty).toEqual(sorted);
    at Object.toBe (tests/search.test.js:66:28)

Test Suites: 1 failed, 1 passed, 2 total
Tests:       4 failed, 7 passed, 11 total
Snapshots:   0 total
Time:        2.392 s, estimated 3 s
Ran all test suites.
C:\Users\gauta\Desktop\Sweet Shop Management System\Backend>
```

*After refactoring code

```
PASS tests/sweet.test.js
PASS tests/search.test.js

Test Suites: 1 failed, 2 passed, 3 total
Tests:       3 failed, 11 passed, 14 total
Snapshots:   0 total
Time:        1.997 s, estimated 3 s
Ran all test suites.
C:\Users\gauta\Desktop\Sweet Shop Management System\Backend>
```

6. Test case for restock and purchase of sweet

```
• Sweet API - Inventory Actions > should restock sweets and increase quantity

expect(received).toBe(expected) // Object.is equality

Expected: 200
Received: 404

51 |         .send({ quantity: 10 });
52 |
> 53 |         expect(res.statusCode).toBe(200);
    |                                     ^
54 |         expect(res.body.sweet.quantity).toBe(25); // 15 + 10
55 |     });
56 | });

at Object.toBe (tests/sweetInventory.test.js:53:28)

PASS tests/sweet.test.js
PASS tests/search.test.js

Test Suites: 1 failed, 2 passed, 3 total
Tests: 3 failed, 11 passed, 14 total
Snapshots: 0 total
Time: 2.416 s, estimated 3 s
Ran all test suites.

C:\Users\gauta\Desktop\Sweet Shop Management System\Backend>
```

*After Refactoring the code

```
C:\Users\gauta\Desktop\Sweet Shop Management System\Backend>npm test

> backend@1.0.0 test
> jest

PASS tests/sweetInventory.test.js
PASS tests/sweet.test.js
PASS tests/search.test.js

Test Suites: 3 passed, 3 total
Tests: 14 passed, 14 total
Snapshots: 0 total
Time: 2.013 s
Ran all test suites.

C:\Users\gauta\Desktop\Sweet Shop Management System\Backend>
```

Tools Used:

Node.js JavaScript runtime	JavaScript runtime
Express	HTTP Server framework
MongoDB	Database for sweets
JEST	Test framework
Supertest	API endpoint assertions
Mongoose	MongoDB ODM