IMS Project

By Nathan Jackson

Technologies Used

- Java
- Maven
- SQL
- Cloud
- Testing
- Git
- Jira

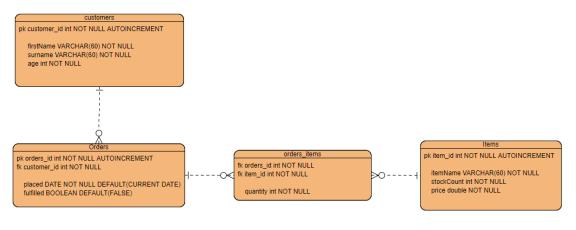








Planning



- ERD designed at the start of the project
- Orders Items table used to avoid many to many relationship

- 4 Epics created throughout the project
- 20 User Stories
- 46 Tasks

Covering all tasks which involve handling and validating input data

IM-56
As a user, I want to only access the system when my login is successful, so that I dont perform redundant tasks

IM-57
When trying to login, if succesful proceed to main menu, otherwise display message and ask for new login details

IM-58
As a user, I want to be able to either read single entries from a table, or get all entries

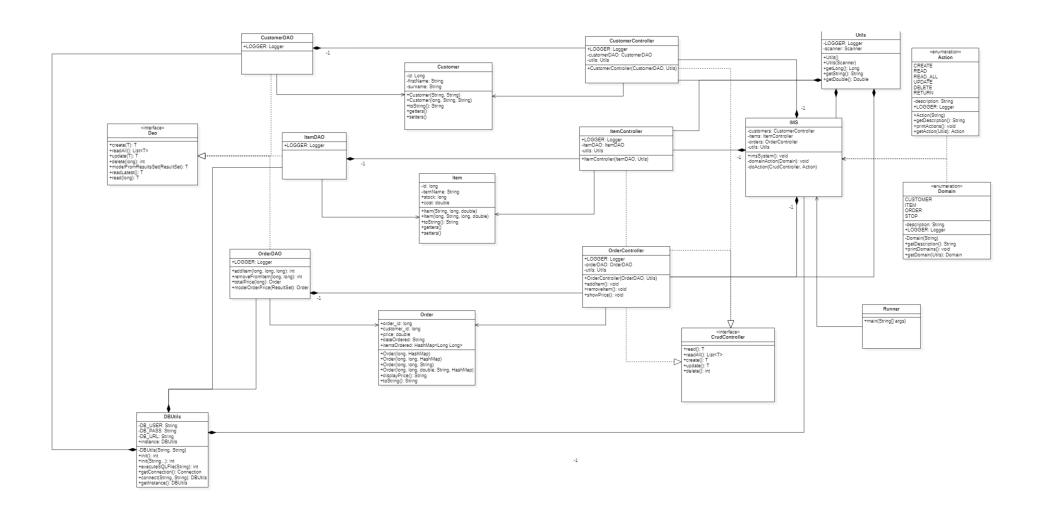
IM-59
Edit domain class to branch into generic base function, rather than read all

IM-60
Add read and read by ID methods to CRUD controller and DAO interfaces

IM-61
Create submenu in each controllers read function to ask for input on what they'd like to read

IM-62
Ensure the DAO can handle and format the queries for read by ID, and read all

Planning – Class Diagram

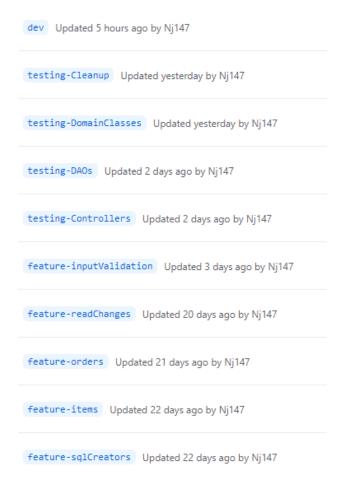


Version Control

• Branches for each key feature that affects multiple classes, e.g. Customers (Customer, CustomerController, CustomerDAO)

 Testing had it's own branches which was redundant and was result of not testing as I went

 Pushes were done after achieving every milestone in the sprint



Testing

- 82.4% Coverage across the whole project
- All Controllers, DAOs and Domain classes tested to 100%

91.3 %	5,522	523	6,045
82.4 %	2,453	523	2,976
0.0 %	0	206	206
0.0 %	0	190	190
0.0 %	0	16	16
84.2 %	693	130	823
0.0 %	0	130	130
100.0 %	162	0	162
100.0 %	176	0	176
100.0 %	355	0	355
86.9 %	698	105	803
0.0 %	0	105	105
100.0 %	175	0	175
100.0 %	202	0	202
100.0 %	321	0	321
69.1 %	161	72	233
4.8 %	3	59	62
92.4 %	158	13	171
98.9 %	901	10	911
97.4 %	375	10	385
100.0 %	253	0	253
100.0 %	273	0	273
	82.4 % 0.0 % 0.0 % 0.0 % 84.2 % 0.0 % 100.0 % 100.0 % 100.0 % 100.0 % 100.0 % 100.0 % 4.8 % 92.4 % 98.9 % 97.4 % 100.0 %	82.4 % 2,453 0.0 % 0 0.0 % 0 84.2 % 693 0.0 % 0 100.0 % 162 100.0 % 176 100.0 % 355 86.9 % 698 0.0 % 0 100.0 % 175 100.0 % 202 100.0 % 321 69.1 % 161 4.8 % 3 92.4 % 158 98.9 % 901 97.4 % 375 100.0 % 253	82.4 % 2,453 523 0.0 % 0 206 0.0 % 0 190 0.0 % 0 16 84.2 % 693 130 0.0 % 0 130 100.0 % 162 0 100.0 % 176 0 100.0 % 355 0 86.9 % 698 105 0.0 % 0 105 100.0 % 175 0 100.0 % 202 0 100.0 % 321 0 69.1 % 161 72 4.8 % 3 59 92.4 % 158 13 98.9 % 901 10 97.4 % 375 10 100.0 % 253 0

Testing Problem

- Due to the Order class feeding 2 different tables in the database, many constructors were used, with different variables being assigned and being left null
- This meant in the testing phase, comparing the returned object wasn't recognised as being the same due to different objects being created in the DAO than were sent there

Testing Solution

- Due to Order structure,
 Date Ordered variable was
 assigned in the DB but in the
 create method
- This meant the test would always fail java.16

```
@Test
public void testCreate() {
    final long custID = 1L;
    HashMap<Long,Long> items = new HashMap<Long,Long>();
    items.put(2L, 100L);
    items.put(3L, 41L);
    final Order created = new Order(6L, custID, items);

assertEquals(created, dao.create(created));
```

```
java.lang.AssertionError: expected:<Order ID: 6, Customer ID: 1, Date Ordered: null> |
but was:<Order ID: 6, Customer ID: 1, Date Ordered: 2021-01-07 17:59:05>
```

```
@Test
public void testCreate() {
    final long custID = 1L;
    HashMap<Long,Long> items = new HashMap<Long,Long>();
    items.put(2L, 100L);
    items.put(3L, 41L);
    final Order created = new Order(6L, custID, items);

assertEquals(created.getOrder_id(), dao.create(created).getOrder_id());
    assertEquals(created.getCustomer_id(), dao.create(created).getCustomer_id());
}
```

- So instead just have to compare the variables that are received back rather than whole object
- Similar issue occurred in the totalPrice() test

Demonstration

Sprint Review

What Got Done

- All Functional Requirements from specification met
- User input and login validation complete (MoSCoW Should haves)
- Testing complete to the required standard

What Missed The Cut

- More comprehensive testing, on IMS specifically
- Some stretch goals I had set
- Restrict orders to only be valid when stock is available
- Handle Multiple logins and/or multiple databases being accessible

Sprint Retrospective

What Went Well

- Always knew what to work on next
- No big unexpected errors occurred
- Version Control
- Time Management

What Could Be Improved

- Test as I go
- Integrate Jira and GitHub
- More detail added in user stories (Story Points, Acceptance Criteria)
- Reduce redundant branches (testing branches)

Conclusions

• Overall development side of things went very well

• Main mistakes were in approach rather than the code

 Going forward would look to refine and improve planning and management techniques