

IMS Assignment

Presentation

Sehun Babatunde

Introduction

- I'm Sehun :)
- Joined QA – December 2020
- Always had a interest in technology (video games FTW!) Graduated from a software engineering degree in July 2020

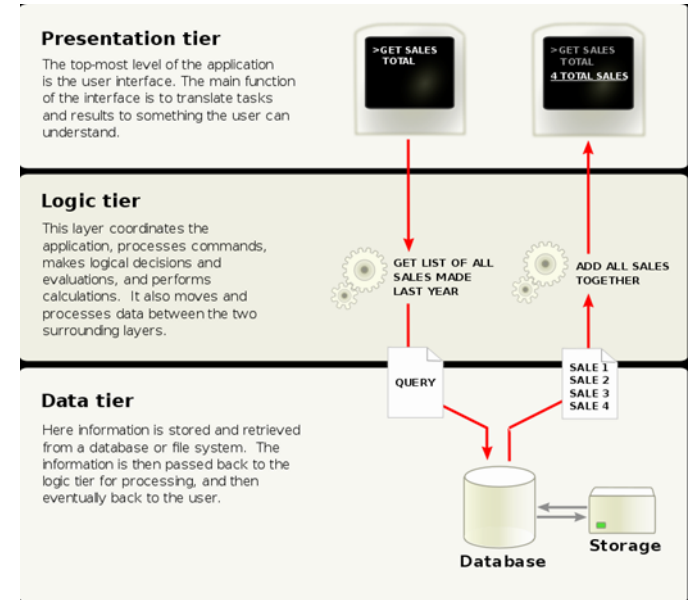
Consultant Journey

- Git (Three feature branch model) & Github
- Java Programming Language
- OOP Concepts
- Project Management (Jira, user stories, acceptance criteria)
- Unit Testing (JUnit)
- Maven
- MySQL (SQL, Workbench)

Approach - Previous CRUD Applications

Prescription Management site via LAMP stack
(Linux, Apache MySQL, PHP)

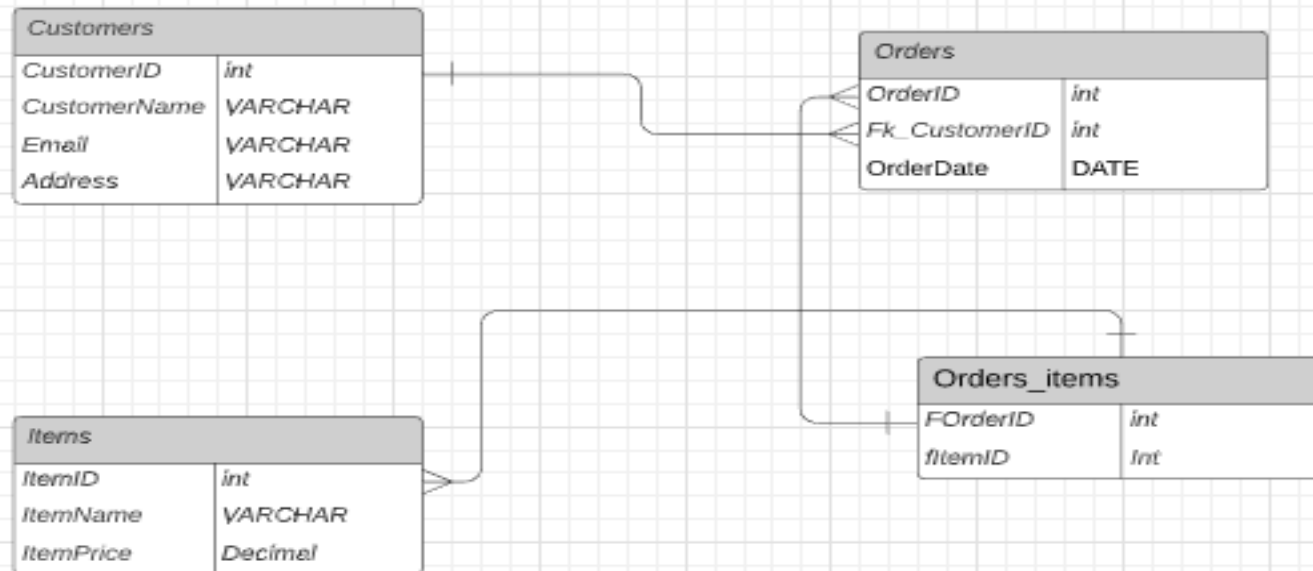
Dissertation - mobile app art marketplace – CRUD
functions (Add users, add art)



Three- Tiered
Architecture model

IMS ER Diagram - Sehun Babatunde

sehun babatunde | January 20, 2021



Risk Assessment

Sehun Babatunde – IMS Assignment

Risk	Risk Statement	Response strategy	Objectives	Likelihood	Risk Level
GitHub	Any source code pushed to GitHub could potentially contain information that hackers would find useful when trying to a maliciously alter the project. The source files could potentially contain hard-coded login credentials which could allow for data leaks.	Use stronger passwords and usernames than just “admin” or “root”, and keep them regularly updated.	Reduce the likelihood of hacking and data leaks.	Medium	Medium-to-High
Development Computer	My hard drive on my computer that contains my IMS assignment work could fail would could result in data loss me losing my project work.	Use the git commit and branch system on GitHub to break down each task so I can roll back features if I have accidentally overwritten work. The files will be also stored at GitHub's end. Keep regular backups to pen drives , external hard drives and I could use cloud platforms such as OneDrive and Google Cloud to have additional off-site backup.	Reduce the likelihood of data loss	Medium	High
Covid / other illnesses	Me or my immediately family catches Covid-19 or other illnesses .	Maintain social distancing with outside strangers . Wear a mask while going outside and other external activities while outside my home. Avoid unnecessary travel	Reduce the likelihood of catching COVID-19 or any other illnesses.	Medium	Medium-to-High

IMS Assignment Risk Matrix - Sehun Babatunde

Potential Consequences

Likelihood			1. Github	5. Stuck on a problem	2. Development Computer	6. Time Management	3. Covid / other illnesses		
			Not Significant	Minor	Moderate	Major	Severe		
	Expected to occur regularly under normal circumstances	Almost Certain	Low	Medium	Low	Medium	Low		
	Expected to occur at some time	Likely	Low	High	Low	High	Low		
	May occur at some time	Possible	Low	High	Medium	High	Medium		
	Not likely to occur in normal circumstances	Unlikely	Medium	Low	Medium	Low	Medium		
	Could happen, but probably never will	Rare	Medium	Low	Medium	Low	Medium		

Likelihood			8. Project Bugs	6. Stress/Burnout	7. Time Mismanagement	4. Software repo/tools corrupting/ broken		
			Minor	Moderate	Major	Major		
	Expected to occur regularly under normal circumstances	Almost Certain	High	Low	Low	Low		
	Expected to occur at some time	Likely	High	Medium	Medium	Low		
	May occur at some time	Possible	High	Medium	Medium	Medium		
	Not likely to occur in normal circumstances	Unlikely	Low	Low	High	High		
	Could happen, but probably never will	Rare	Low	Low	Medium	High		

CI – Version Control


- The o'l reliable: Three feature branch Model
- Benefits: Continuous Integration & Development
- Don't break the main branch
- Rollbacks!

Could have branched tasks more tasks into separate ones

Your branches

SIA-55_Feature__JUnit_Orders Updated 18 hours ago by SehunB-QA


0 | 36

 New pull request



SIA-10_Feature__CreateOrder Updated 23 hours ago by SehunB-QA


0 | 34

 New pull request



dev Updated 4 days ago by SehunB-QA


0 | 21

 New pull request



SIA-39_Feature_JUnitTest_CreateItems Updated 4 days ago by SehunB-QA


0 | 19

#6  Merged



SIA-8_Feature_DeleteItems Updated 4 days ago by SehunB-QA

0 | 18

#5  Merged




[View more of your branches](#) >

Active branches

SIA-55_Feature__JUnit_Orders Updated 18 hours ago by SehunB-QA


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 New pull request



SIA-10_Feature__CreateOrder Updated 23 hours ago by SehunB-QA


0 | 34

 New pull request



dev Updated 4 days ago by SehunB-QA


0 | 21

 New pull request



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0 | 19

#6  Merged



SIA-8_Feature_DeleteItems Updated 4 days ago by SehunB-QA

0 | 18

#5  Merged



- SehunQA-IMS A Next-gen software
- Roadmap
- Backlog
- Board
- Code
- Project pages
- Add item
- Project settings
- You're in a next-gen project
- Give feedback Learn more

CRUD - IMS / SIA-6

🔒 👁 1 👍 🔗 ⋮ ✕

As Admin I would like to add a item in the database so I can see the item's details in my database and CLI.

- 📎 Attach
- 👤 Add a child issue
- 🔗 Link issue
- ⌵
- ⋮

Description

Add a description...

Activity

Show: **Comments** History

SB

Add a comment...

Pro tip: press **M** to comment

Assignee	SB sehun babatunde
Labels	Basic_CRUD_Functionality
Sprint	IMS Assignment
Story point estimate	None
Reporter	SB sehun babatunde
Development	1 branch 8 commits 4 days ago 4 pull requests MERGED

Created January 19, 2021, 10:40 PM ⚙️ Configure
Updated 5 days ago

SehunQA-IMS A
Next-gen software

Roadmap

Backlog

Board

Code

Project pages

Add item

Project settings

You're in a next-gen p

Give feedback Learn more

Development SIA-6

🔊 Give feedback ✕

Branches Commits Pull requests Builds Deployments Feature flags

👤 20DecSDET2-IMS-Starter (GitHub)

[Show all files](#)

Author	Commit	Message	Date	Files
👤	cd7211	Merge pull request #4 from SehunB-QA/SIA-6_Feature_Createltems Sia 6 feature...	25/01/2021	7 files
👤	692dd3	SIA-6 Added many items related classes, added item functionality to IMSEntryPoi...	24/01/2021	5 files
👤	6a2edc	SIA-6 Possibly fixed a potential sql error on the readLatest method in the Itemda...	23/01/2021	1 file
👤	203bbd	SIA-6 Removed unnecessary customer domain class import. Changed the read m...	23/01/2021	1 file
👤	5bebd1	SIA-6 Added ItemsDao.java class to ims/persistence/dao folder (still need to test...	23/01/2021	1 file
👤	6e36d5	Merge pull request #3 from SehunB-QA/SIA-6_Feature_Createltems SIA-27 Actu...	23/01/2021	2 files
👤	9b6afe	Merge pull request #2 from SehunB-QA/SIA-6_Feature_Createltems SIA-28 Third...	22/01/2021	3 files
👤	057c3d	Merge pull request #1 from SehunB-QA/SIA-6_Feature_Createltems SIA-27 Seco...	21/01/2021	3 files

📌 SIA-21

🔗 Quickstart

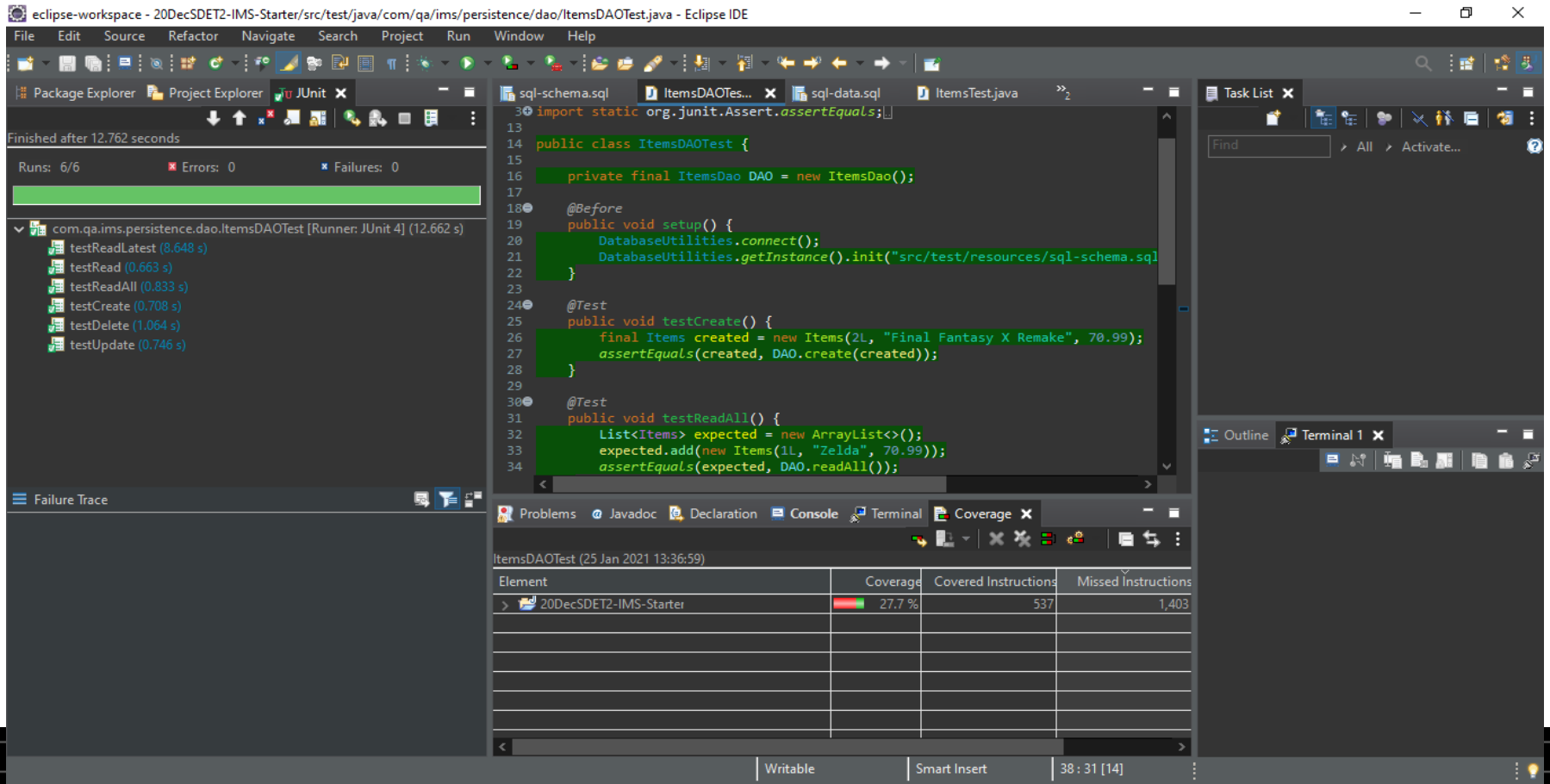
Testing

Why use JUnit & what's the purpose of Unit Testing? –

To confirm that our program and it's behaviour works as intended!




Testing



```

37 ● @Test
38     public void testReadLatest() {
39         assertEquals(new Items(1L, "Zelda", 70.99), DAO.readLatest());
40     }
41
42 ● @Test
43     public void testRead() {
44         final long itemsID = 1L;
45         assertEquals(new Items(itemsID, "Zelda", 70.99), DAO.read(itemsID));
46     }
47
48 ● @Test
49     public void testUpdate() {
50         final Items updated = new Items(1L, "Zelda", 40.00);
51         assertEquals(updated, DAO.update(updated));
52     }
53
54
55 ● @Test
56     public void testDelete() {
57         assertEquals(1, DAO.delete(1));
58     }
59

```

 Outline

Terminal 1 X

Problems Javadoc Declaration Console Terminal Coverage X

[illegible]

File Edit Source Refactor Navigate Search Project Run Window Help

Debug Project Explorer Servers

- ICrudController.java
- ItemsController.java
- OrdersController.java
- OrdersTotalPriceController.java
- com.qa.ims.persistence.dao
 - CustomerDao.java
 - IDomainDao.java
 - ItemsDao.java
 - OrdersDao.java
- com.qa.ims.persistence.domain
 - Customer.java
 - Items.java
 - Orders.java
- com.qa.ims.utils
 - DatabaseUtilities.java
 - JavaUtilities.java
- src/main/resources
- src/test/java
 - com.qa.ims.persistence.dao
 - com.qa.ims.persistence.domain
- src/test/resources
- JRE System Library [JavaSE-1.8]
- Maven Dependencies
- bin
- IMS Assignment Documents
- IMS Assignment JUnit Test Screenshots
- src
 - main
 - java
 - resources
 - ER Diagram.mgc

OrdersDAOte... OrdersContr... ER Diagram.mgc Runner.java »_2

```

1 package com.qa.ims.persistence.dao;
2
3 import static org.junit.Assert.assertEquals;
12
13 public class OrdersDAOTest {
14
15     private final OrdersDao DAO = new OrdersDao();
16
17     @Before
18     public void setup() {
19         DatabaseUtilities.connect();
20         DatabaseUtilities.getInstance().init("src/test/resources/sql-schema.sql", "src/test/resources/test-data.sql");
21     }
22
23
24     @Test
25     public void testCreate() {
26         Customer customer = new Customer(1L, "Nick", "Johnson");
27         // final Orders created = new Orders(1L, "Nick", "Johnson", 1L, 0L, "", 0.0);
28         long customerID = 1;
29         final Orders created = (new Orders(new Customer(customerID, null, null), 0.0));
30         System.out.println("Created Result : " + created);
31         assertEquals(created, DAO.create(created));
32     }
33
34
35
36
37

```

(x)= Variables x Breakpoints Expressions

Console Problems Debug Shell Coverage x

Element	Coverage	Covered Instructions	Missed Instructions	Total Instructions
20DecSDET2-IMS-Starter	48.5 %	1,628	1,731	3,359
src/main/java	43.4 %	1,323	1,724	3,047
src/test/java	97.8 %	305	7	312

JUnit helped me catch a bug in my program!

Example- I got a constraint sql error in my customer delete test when deleting a customer that has a related order attached to it.

Debug Project Explorer Servers

com.qa.ims.utils
DatabaseUtilities.java
JavaUtilities.java
src/main/resources
src/test/java
com.qa.ims.persistence.dao
CustomerDAOTest.java
ItemsDAOTest.java
OrdersDAOTest.java
com.qa.ims.persistence.domain
src/test/resources
JRE System Library [JavaSE-1.8]
Maven Dependencies
bin
IMS Assignment Documents
IMS Assignment JUnit Test Screenshots
src
main
java
resources
ER Diagram.mgc
test
target
errors.log
jiratest.txt
jiratest2.txt
LICENSE.md
pom.xml
README.md
animaltask
arrays_exercise1

OrdersDAOTe... ER Diagram.mgc Runner.java CustomerDAO... »3

```
32 expectedCustomerExpected = new ArrayList<>();
33 expected.add(new Customer(1L, "jordan", "harrison"));
34 assertEquals(expected, DAO.readAll());
35 }
36
37 @Test
38 public void testReadLatest() {
39     assertEquals(new Customer(1L, "jordan", "harrison"), DAO.readLatest());
40 }
41
42 @Test
43 public void testRead() {
44     final long ID = 1L;
45     assertEquals(new Customer(ID, "jordan", "harrison"), DAO.read(ID));
46 }
47
48 @Test
49 public void testUpdate() {
50     final Customer updated = new Customer(1L, "nick", "johnson");
51     assertEquals(updated, DAO.update(updated));
52 }
53
54
55 @Test
56 public void testDeleteCustomerWithoutOrders() {
57     assertEquals(1, DAO.deleteCustomerWithoutOrders(1));
58 }
59 }
60
```

Console Problems Debug Shell Coverage

Element	Coverage	Covered Instructions	Missed Instructions	Total Instructions
20DecSDET2-IMS-Starter	48.5 %	1,628	1,731	3,359
src/main/java	43.4 %	1,323	1,724	3,047
src/test/java	97.8 %	305	7	312

Writable Smart Insert 54: 1 [136]

```

@Override
public int delete() {

    LOGGER.info("Do you have any pending orders with your customer account?");
    String answer = javaUtilities.getString();
    if(answer.equalsIgnoreCase("yes"))
    {
        OrdersDao ordersDao = new OrdersDao();
        LOGGER.info("Please first enter the id of an order you have");
        Long orderID = javaUtilities.getLong();
        ordersDao.deleteWholeOrder(orderID);

        LOGGER.info("Please enter the id of the customer you would like to delete");
        Long id = javaUtilities.getLong();
        return customerDao.deleteCustomerWithOrders(id);
    }

    else if (answer.equalsIgnoreCase("no"))
    {
        LOGGER.info("Please enter the id of the customer you would like to delete");
        Long id = javaUtilities.getLong();
        return customerDao.deleteCustomerWithoutOrders(id);
    }

    else

```

```

public int deleteCustomerWithoutOrders(long id) {
    try (Connection connection = DatabaseUtilities.getInstance().getConnection());

        PreparedStatement statement = connection
            .prepareStatement("delete from customers where id = (?) ");){
        statement.setLong(1, id);
        return statement.executeUpdate();
    } catch (Exception e) {
        LOGGER.debug(e);
        LOGGER.error(e.getMessage());
    }
    return 0;
}

public int deleteCustomerWithOrders(long id) {
    try (Connection connection = DatabaseUtilities.getInstance().getConnection());

        PreparedStatement statement2 = connection
            .prepareStatement("delete from orders where fk_customers_id = (?) ");) {
        statement2.setLong(1, id);
        statement2.executeUpdate();

        PreparedStatement statement = connection
            .prepareStatement("delete from customers where id = (?) ");
        statement.setLong(1, id);
        return statement.executeUpdate();
    }
}

```

The Fun Part: The demo!

Sprint Review

Jira Board -

<https://sehunqaimsassignment.atlassian.net/jira/software/projects/SIA/boards/1>

Complete: Full User stories, Added a multiple item to order function, refactored sql statements that deal with user input to prepared statements.

Left of: Junit testing of OrderDAO, Additional functions ideas

Sprint Retrospective

Overall : Went well and helpful

Things to improve: More breakdown of tasks

- Full Junit tests of the OrdersDAO

Conclusion

Successes :

- I have learned a lot
- Proud of project
- Good Challenge & working project
- Met great people

Improvements and moving ahead:

- Don't overstress
- Have regular updates with my trainers ang
- Do some more learning on concepts covered
- Better management on time and tasks

Questions?

Thank you for listening! :)