QA- IMS PROJECT

By Mohamud Mussa

Introduction

- First Class Degree in Computer Science. Background in SQL.
- Creativity is everything to me.
  - Web Design, Graphic Design, Documentary Making. YouTube.
- How did I approach the project specification?
  - Understanding
  - Risk Management
  - Design
  - Logic
  - Attempt

Understanding

- Understanding the relationships and flow of the project
  - UML DIAGRAM
- Understanding the MVP specification and creating User stories and tasks based on them.

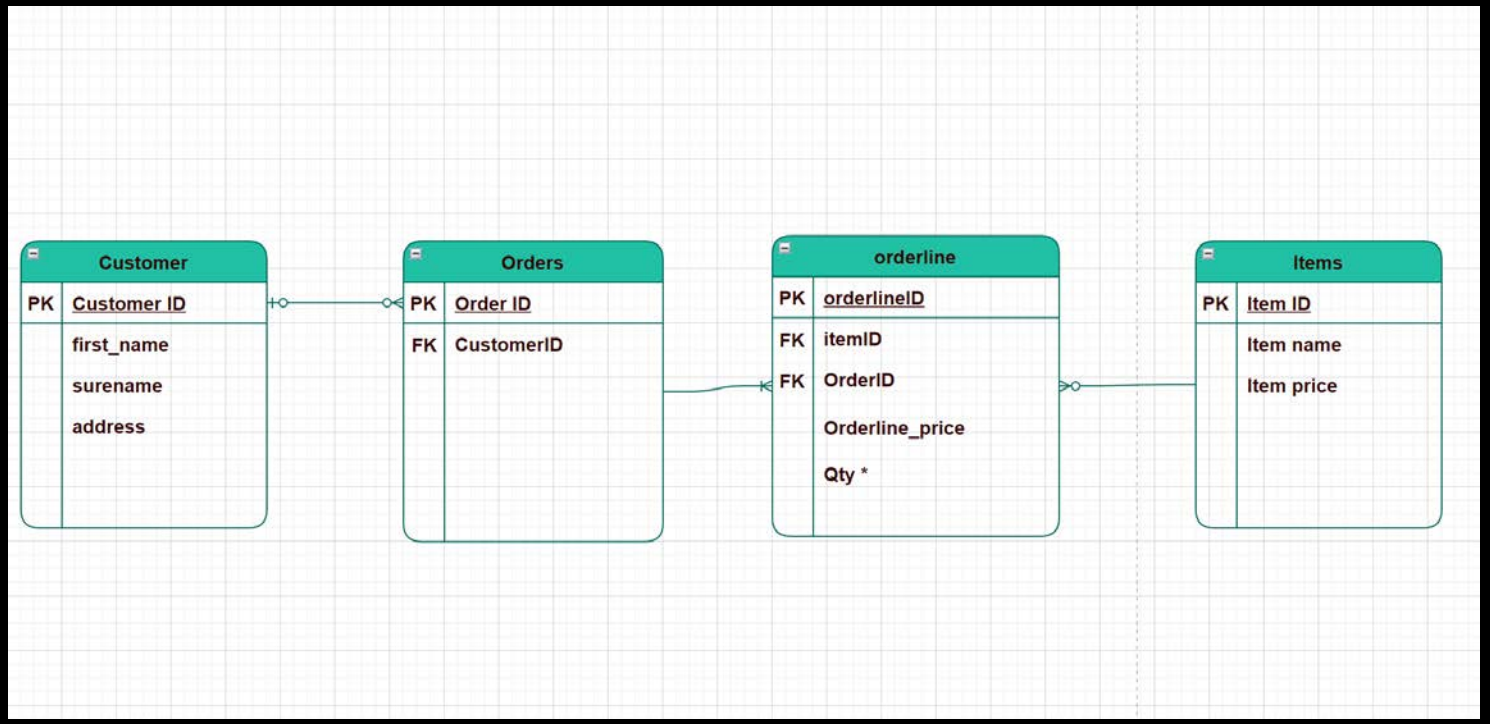
Risk Management

Risk ID	Date registered	Risk area	Risk description	Probability			Risk Level			Project impact	Proximity / Length of impact	Response strategy
1	18/12/2020	Computer Crashing & Losing the data	My Laptop might crash for various reason.		/		/			This will impact the project as I would lose all progress made with this laptop.	N/A	I was given a QA community Laptop as well and this will allow me to switch from my personal Laptop to the QA one if necessary as my personal laptop is what I'm currently using. I would then fork my repository from GitHub and continue the work on there
2	18/12/2020	Covid-19	Contract Covid-19 or a family member getting Covid-19		/			/		This can impact the project in many ways. One being that it would affect my ability to work on the project. If COVID-19 was to happen to a family member I'd need to take care of them whilst working on this project too.	A week	While self isolating I can still use my laptop although I might need time to recover.
3	19/12/2020	Schedule Risk	Not completing the project on time	/					/	Wrong time estimation Resources are not tracked properly. All resources like staff, systems, skills of individuals, etc. Failure to identify complex functionalities and time required to develop those functionalities. Unexpected project scope expansions.	2 Weeks overall project sprint	On agile projects the team is heavily involved in planning and estimating through activities such as XP's planning game and Wideband Delphi workshops. By working in short increments the true velocity of the team quickly emerges and is visible to all stakeholders who are now more closely involved in the project. In short, the true progress is hard to hide and quickly revealed, giving feedback to the stakeholders.
										This could impact the		

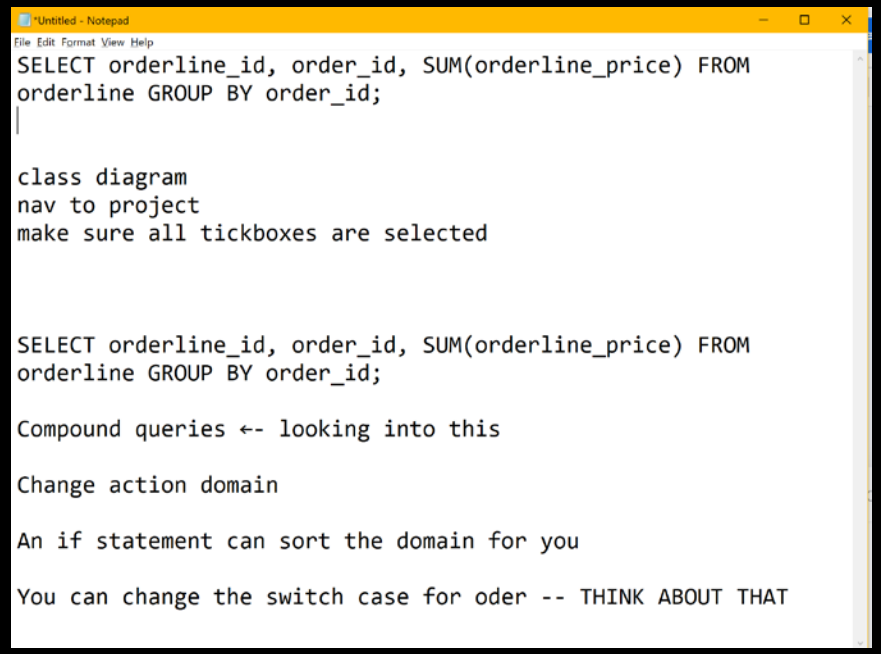
GitHub	https://github.com/MohamudMussa
Project Name:	QA-Project1

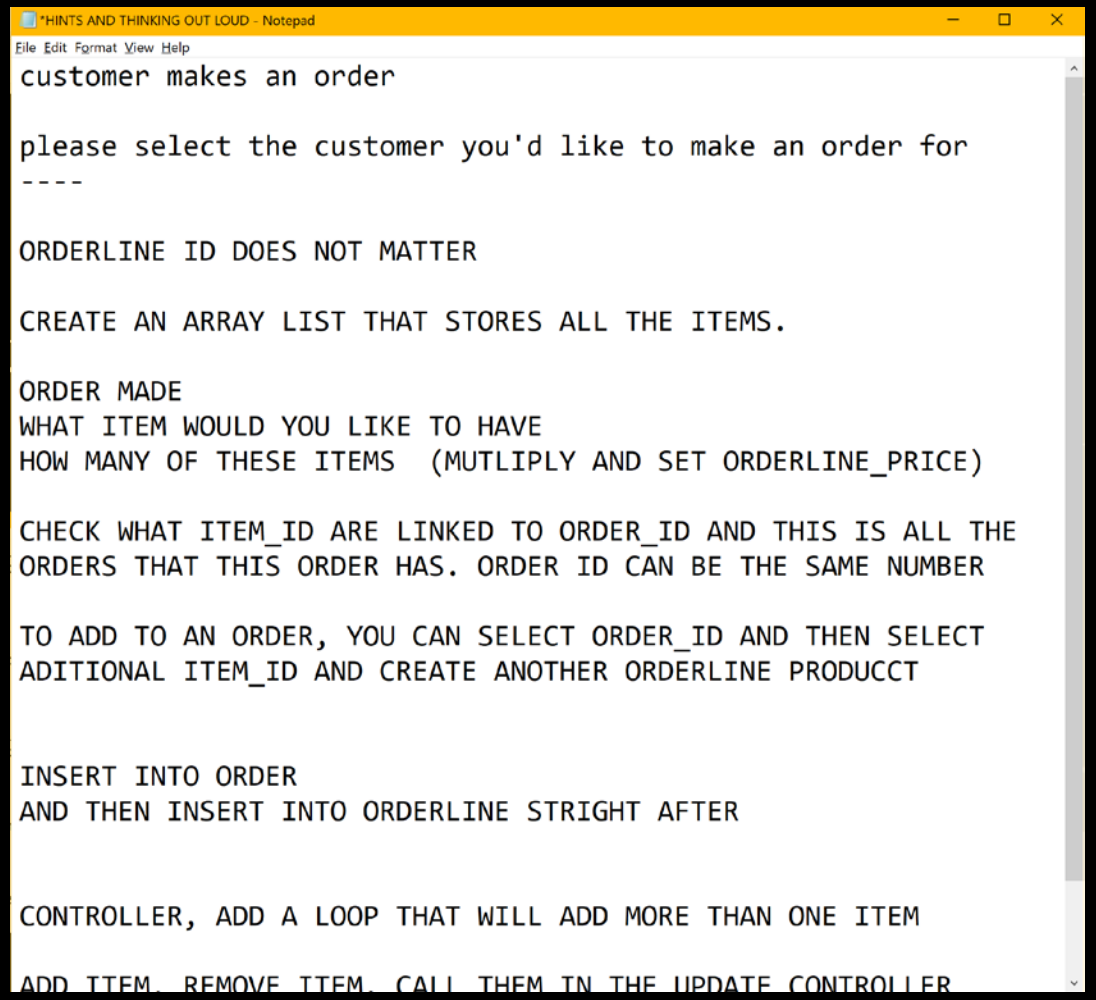
Design

- Designed my ERD to better understand the structure of the database I wanted to create.



Logic


*Untitled - Notepad
File Edit Format View Help
SELECT orderline_id, order_id, SUM(orderline_price) FROM orderline GROUP BY order_id;
class diagram
nav to project
make sure all tickboxes are selected
SELECT orderline_id, order_id, SUM(orderline_price) FROM orderline GROUP BY order_id;
Compound queries ← looking into this
Change action domain
An if statement can sort the domain for you
You can change the switch case for oder -- THINK ABOUT THAT


*HINTS AND THINKING OUT LOUD - Notepad
File Edit Format View Help
customer makes an order
please select the customer you'd like to make an order for

ORDERLINE ID DOES NOT MATTER
CREATE AN ARRAY LIST THAT STORES ALL THE ITEMS.
ORDER MADE
WHAT ITEM WOULD YOU LIKE TO HAVE
HOW MANY OF THESE ITEMS (MUTLIPLY AND SET ORDERLINE_PRICE)
CHECK WHAT ITEM_ID ARE LINKED TO ORDER_ID AND THIS IS ALL THE ORDERS THAT THIS ORDER HAS. ORDER ID CAN BE THE SAME NUMBER
TO ADD TO AN ORDER, YOU CAN SELECT ORDER_ID AND THEN SELECT ADITIONAL ITEM_ID AND CREATE ANOTHER ORDERLINE PRODUCCT
INSERT INTO ORDER
AND THEN INSERT INTO ORDERLINE STRIGHT AFTER
CONTROLLER, ADD A LOOP THAT WILL ADD MORE THAN ONE ITEM
ADD ITEM, REMOVE ITEM, CALL THEM IN THE UPDATE CONTROLLER

My Journey

- The technologies I have learnt for this project;
  - Git – Version Control
  - Markdown – Used to create README
  - MySQL – Local Database Connection.
  - GCP – Cloud Database Connection.
  - Jira – Used to create the two sprints and keep track of user stories and tasks
  - Java – Coding, used to build IMS project.
  - Maven – Used to download Java libraries and Maven plugins & store them in a local cache
  - Testing (Mockito & Junit)

Continuous Integration

- GitHub was used for Version Control and continuous integration. This was done by using feature / dev concept model. Pull Request and Merging into Master

Testing

- Junit

I used assertions to prove that the code I ran had behaved correctly an example

```
@Test
public void ReadTest() {
Action action = Action.READ;
assertTrue(action.getDescription().toLowerCase().contains("read"));
}
```

Testing

- Mockito

I used Mockito to verify the behaviour of the IMS system under test without establishing connections first. Here is an example;

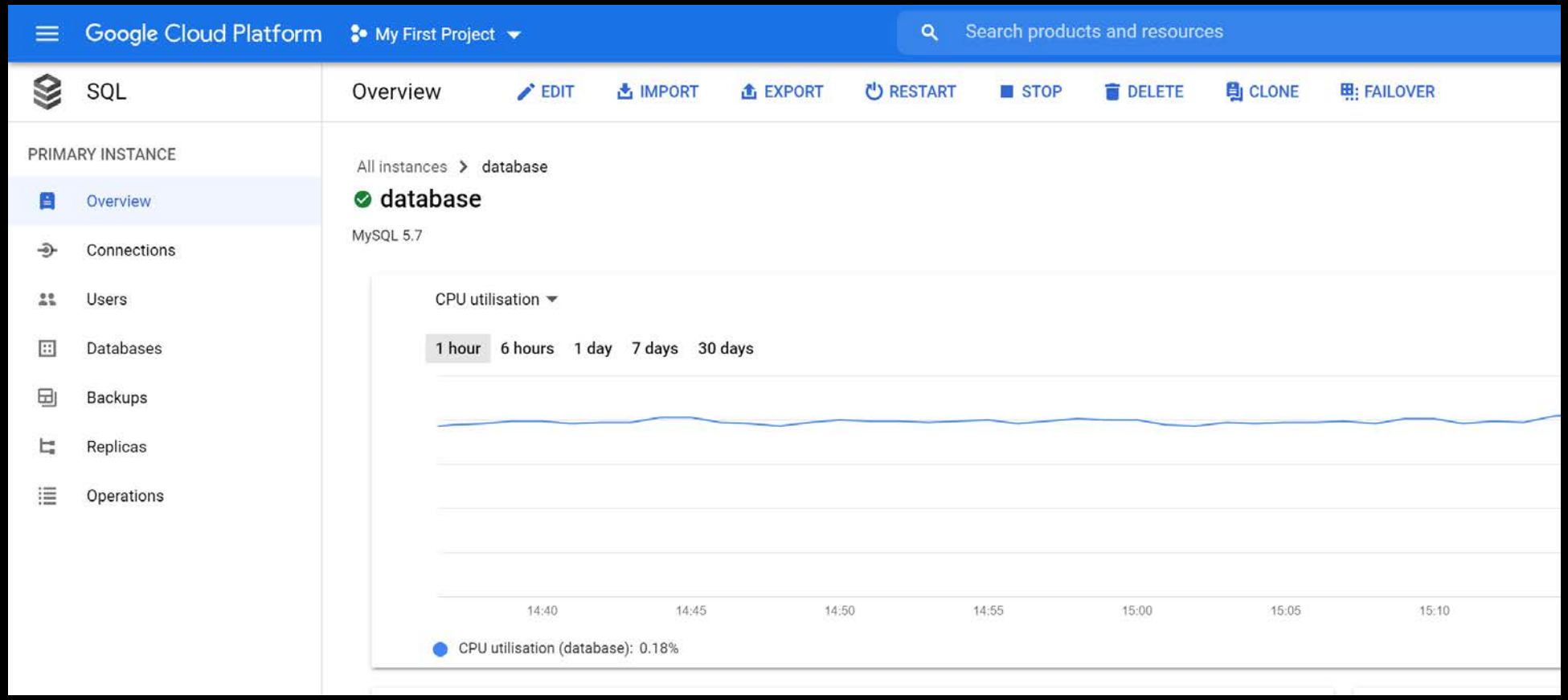
```
@Before
public void setup() {
try (Connection connection = DriverManager.getConnection(jdbcConnectionUrl, username,
password);
Statement statement = connection.createStatement();) {
statement.executeUpdate("delete from customers;");
} catch (Exception e) {
LOGGER.debug(e.getStackTrace());
LOGGER.error(e.getMessage());
                    }
            }
}
```

Testing

Project Coverage.

Element	Coverage	Covered Instructions	Missed Instructions	Total Instructions
chris-ims	76.4 %	5,255	1,624	6,879
src/test/java	96.1 %	2,968	122	3,090
src/main/java	60.4 %	2,287	1,502	3,789

Demonstration


Google Cloud Platform
My First Project
Search products and resources
SQL
Overview
EDIT
IMPORT
EXPORT
RESTART
STOP
DELETE
CLONE
FAILOVER
PRIMARY INSTANCE
Overview
Connections
Users
Databases
Backups
Replicas
Operations
All instances > database
database
MySQL 5.7
CPU utilisation
1 hour
6 hours
1 day
7 days
30 days
14:40
14:45
14:50
14:55
15:00
15:05
15:10
CPU utilisation (database): 0.18%

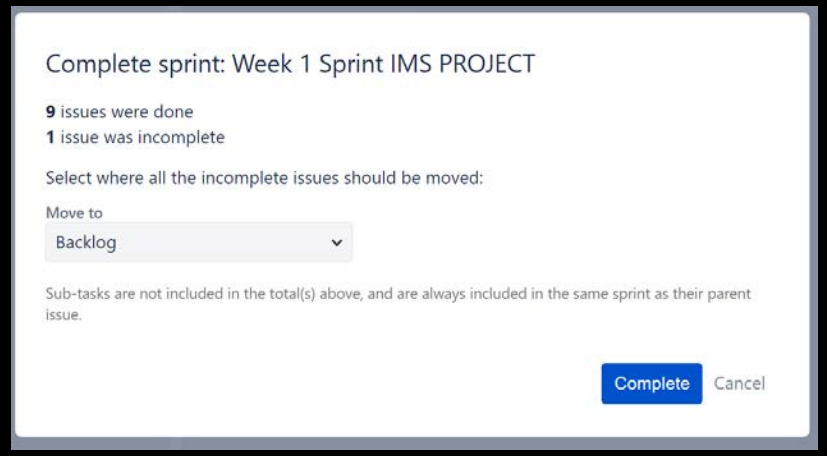
MINGW64:/c/Users/Asus/Documents/GitHub/ims-demo/target

```
Asus@Mussa MINGW64 ~/Documents/GitHub/ims-demo/target (dev)
$ java -jar mussa-ims-1.0.1-jar-with-dependencies.jar
INFO - What is your username
root
INFO - What is your password
root
DEBUG - java.base/java.io.FileInputStream.open0(Native Method
DEBUG - java.base/java.io.FileInputStream.open(FileInputStrea
DEBUG - java.base/java.io.FileInputStream.<init>(FileInputStr
DEBUG - java.base/java.io.FileInputStream.<init>(FileInputStr
DEBUG - java.base/java.io.FileReader.<init>(FileReader.java:6
DEBUG - com.qa.ims.Ims.init(Ims.java:133)
DEBUG - com.qa.ims.Ims.init(Ims.java:108)
DEBUG - com.qa.ims.Ims.imsSystem(Ims.java:37)
DEBUG - com.qa.ims.Runner.main(Runner.java:11)
ERROR - src\main\resources\sql-schema.sql (The system cannot
fied)
INFO - Which entity would you like to use?
INFO - CUSTOMER: Information about customers
INFO - ITEM: Individual Items
INFO - ORDER: Purchases of items
INFO - EXIT: To close the application
```

Sprint Review Week 1

- Built Customer & Items as they didn't have any foreign keys
- Built up understanding of the project
- Added features to Customers and Items such as Address and Item Price.

- Did not complete Item testing.



Sprint Review Week 2

- Built Orders and Order functionality
  - Corrected other related issues and bugs that appeared in Items & Customer
- Ensured all CRUD functionality met the MVP.
- Created a test database, and spent more time testing.

- Did not complete Testing for ORDERS, hence the low coverage.

Sprint retrospective

- What went right?
  - Completed all CRUD functionality for Order, Item & Products
  - Connected to local and GCE databases.
  - Added a SUM method that allows a user to calculate an order
- What went wrong?
  - Testing, more time was needed to complete the testing.
- What would we change?
  - Adapt Testing further up in the Sprint.
  - Test as I create.
  - Add new features such as security or read only feature.
  - Add more try catch statements to stop user error and return user friendly errors

Conclusion

- Project MVP was met successfully.
- Leant a lot and will continue to add features and testing in my spare time to improve my understanding of all the technologies I learnt.
- Built an understanding on how to take on a Project from ground up.
- Built an understanding of best practices throughout the project.

THANK YOU

Any Questions?