

QA project: IMS

Mahdy Rahman

Introduction

Initial approach to project: How to implement Agile way of work

```
graph TD; A[Initial approach to project: How to implement Agile way of work] --> B[Review of the project specification]; B --> C[Reviewed software that will be needed to complete project:]; C --> D[Analysed IMS to understand how it worked];
```

Review of the project specification

Reviewed software that will be needed to complete project:

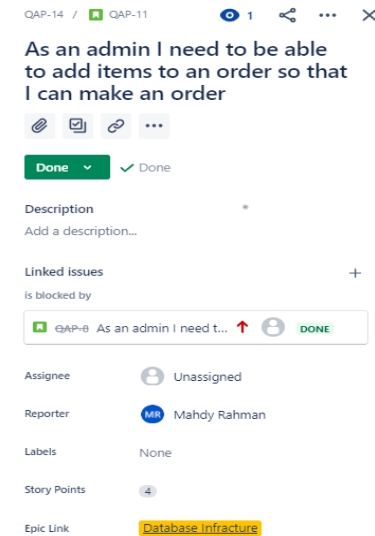
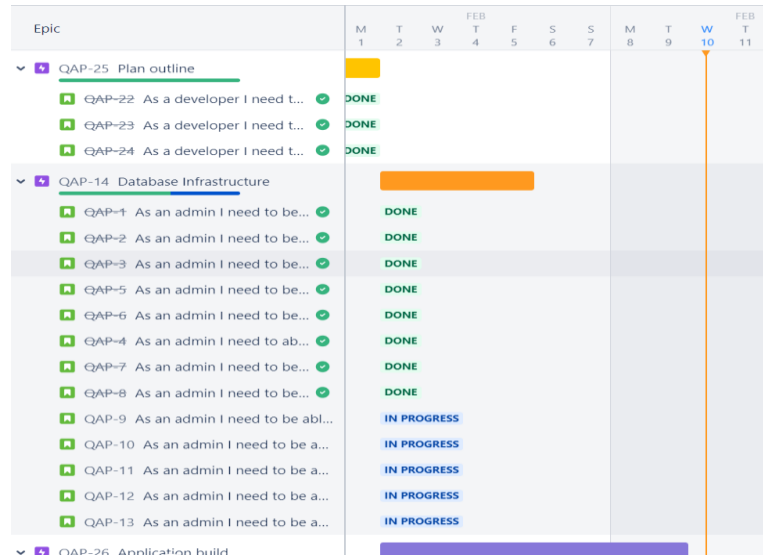
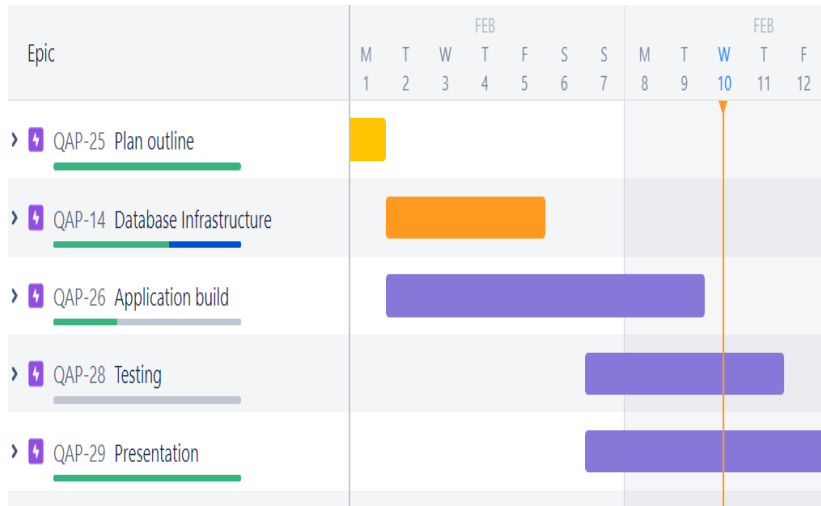
Analysed IMS to understand how it worked

- Git
- GitHub
- Jira
- MYSQL
- Java
- Maven
- JUnit

Software

Jira

Roadmap for project and tasks within the epics



- Jira was used to plan out epics tasks, subtasks, user stories and allocate importance levels to each tasks via story points
- Created epics and subsequent tasks that would go within each epic

Jira Board continued

Story links

QAP-14 / QAP-1

1

As an admin I need to be able to add customers to the system so that I can update my database

Done

✓ Done

Description

Add a description...

Linked issues

blocks

QAP-2

As an admin I need to be a...

↑

DONE

QAP-4

As an admin I need to able ...

↑

DONE

User story examples

First Sprint report

Priority levels using MosCow method

Projects / QAPProject1 / QAP board / Reports

Sprint Report

Completed issues

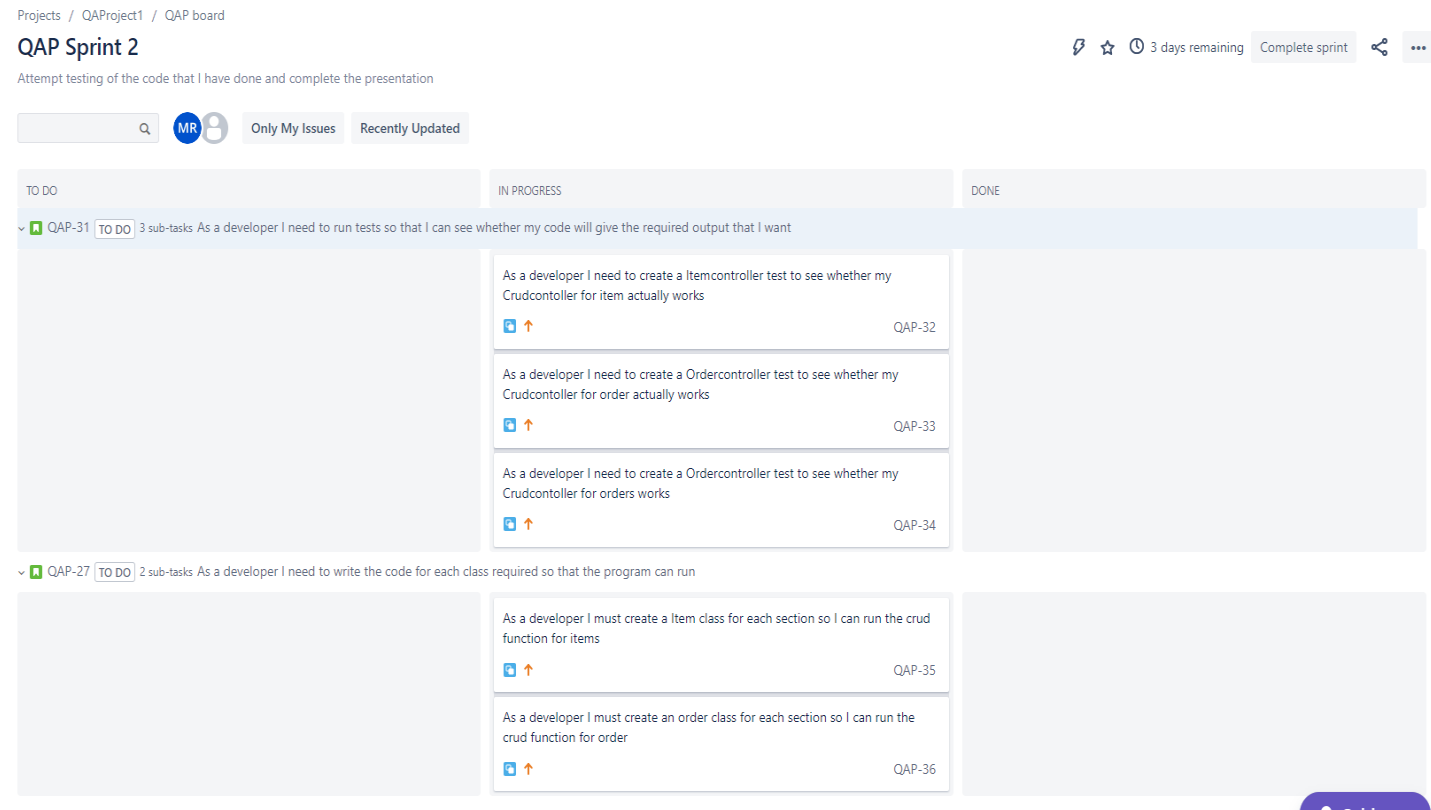
Key	Summary	Issue Type	Priority
QAP-1	As an admin I need to be able to add customers to the system so that I can update my database	Story	High
QAP-2	As an admin I need to be able to view all customers in my database so I can identify customer needs	Story	High
QAP-3	As an admin I need to be able to update the system so if there are any changes to customer details I can amend them	Story	Medium
QAP-4	As an admin I need to be able to delete customers off of the system so they want to be removed they can do	Story	Medium
QAP-5	As an admin I need to be able to add items so that if I get new items I can add them to the database	Story	Highest
QAP-6	As an admin I need to be able to update items so that if an items details are changed, I am able to change it on the system	Story	Medium
QAP-7	As an admin I need to be able to delete items so that if an item is no longer needed I can remove it from the system	Story	Medium
QAP-8	As an admin I need to be able to create orders in the system so if a customer makes an order I can add it	Story	Highest
QAP-22 *	As a developer I need to make a risk assessment so that I can prevent these risks from occurring	Story	Medium
QAP-23 *	As a developer I need to make a ERD so that I can see how my tables are linked to each other	Story	Medium
QAP-24 *	As a developer I need to make a UML so that I know what methods and classes I will need	Story	Medium

Issues Not Completed

Key	Summary	Issue Type	Priority	Sta
QAP-9	As an admin I need to be able to view all my orders so that I can see what items will be needed	Story	Medium	IN
QAP-10	As an admin I need to be able to delete orders off of the system so if an order is no longer required then I can take it off	Story	Medium	IN
QAP-11	As an admin I need to be able to add items to an order so that I can make an order	Story	Medium	IN
QAP-12	As an admin I need to be able to calculate the costs of an order so that I know how much money is required to complete the order	Story	Medium	IN
QAP-13	As an admin I need to be able to delete items of an order so that if the order is wrong, it can be amended	Story	Medium	IN

Jira continued

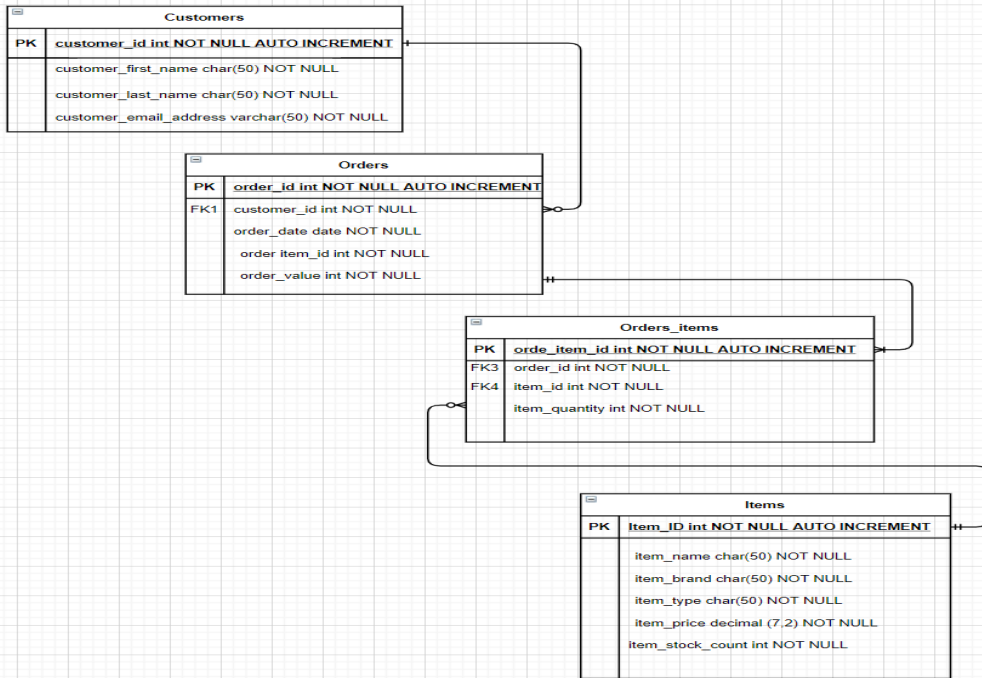
- Two sprints were done for the project
- Sprint one involved planning and configuring the database infrastructure in order to lay the foundations for the programming aspect (ERD, MYSQL, Risk assessments)
- Sprint two involved the CRUD functions and testing and any backlogs found from sprint one and the presentation



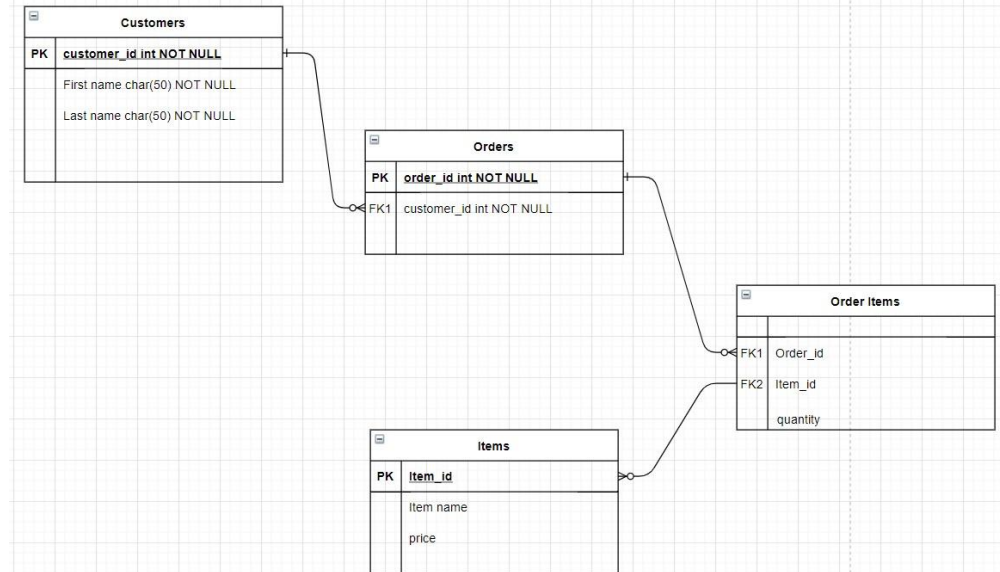
Examples of tasks in sprint two in progress

ERD

- Initial ERD created

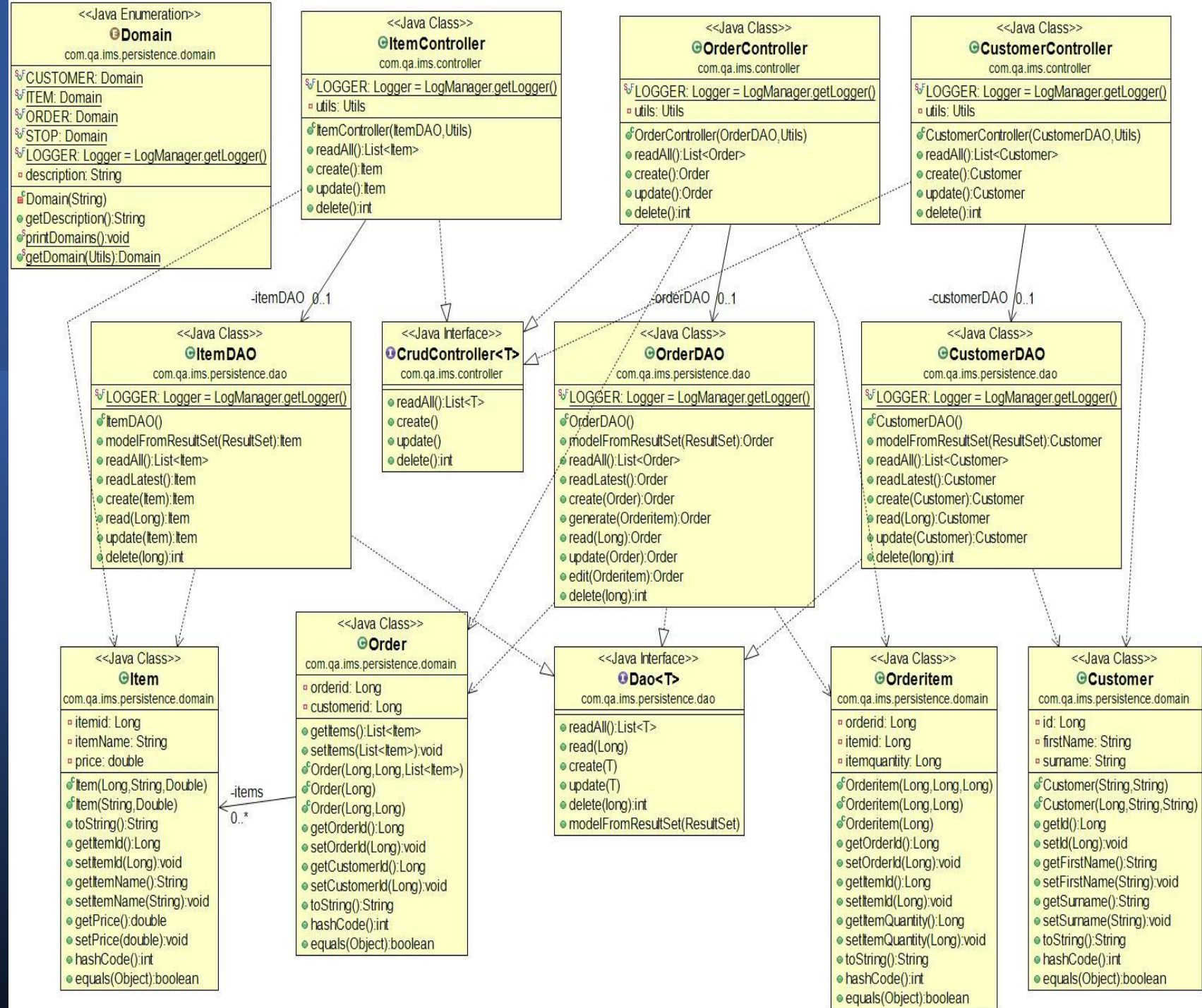


- Updated ERD



Risk Assessment

UML



MYSQL

```
1 DROP TABLE IF EXISTS `customers`;
2
3 CREATE TABLE IF NOT EXISTS `customers` (
4   `id` INT(11) NOT NULL AUTO_INCREMENT,
5   `first_name` VARCHAR(40) DEFAULT NULL,
6   `surname` VARCHAR(40) DEFAULT NULL,
7   PRIMARY KEY (`id`)
8 );
9
10 CREATE TABLE IF NOT EXISTS item (
11   item_id INT NOT NULL AUTO_INCREMENT,
12   item_name CHAR(50) NOT NULL,
13   price DECIMAL (7, 2) NOT NULL,
14   PRIMARY KEY (item_id)
15 );
16
17 CREATE TABLE IF NOT EXISTS orders (
18   order_id INT NOT NULL AUTO_INCREMENT,
19   customer_id INT NOT NULL,
20   order_value DECIMAL (7, 2) NOT NULL,
21   order_date DATE NOT NULL,
22   PRIMARY KEY (order_id),
23   FOREIGN KEY (customer_id) REFERENCES customers(id)
24 );
25
26 CREATE TABLE IF NOT EXISTS orderitems (
27   order_id INT NOT NULL,
28   item_id INT NOT NULL,
29   item_quantity INT NOT NULL,
30   FOREIGN KEY (order_id) REFERENCES orders(order_id),
31   FOREIGN KEY (item_id) REFERENCES item(item_id)
32 );
33
34
```

New schema with updated MYSQL codes

```
1 DROP TABLE IF EXISTS `customers`;
2
3 CREATE TABLE IF NOT EXISTS `customers` (
4   `id` INT(11) NOT NULL AUTO_INCREMENT,
5   `first_name` VARCHAR(40) DEFAULT NULL,
6   `surname` VARCHAR(40) DEFAULT NULL,
7   PRIMARY KEY (`id`)
8 );
9
10 CREATE TABLE IF NOT EXISTS item (
11   item_id INT NOT NULL AUTO_INCREMENT,
12   item_name CHAR(50) NOT NULL,
13   price DECIMAL (7, 2) NOT NULL,
14   PRIMARY KEY (item_id)
15 );
16
17 CREATE TABLE IF NOT EXISTS orders (
18   order_id INT NOT NULL AUTO_INCREMENT,
19   customer_id INT NOT NULL,
20   order_value DECIMAL (7, 2) NOT NULL,
21   order_date DATE NOT NULL,
22   PRIMARY KEY (order_id),
23   FOREIGN KEY (customer_id) REFERENCES customers(id)
24 );
25
26 CREATE TABLE IF NOT EXISTS orderitems (
27   order_id INT NOT NULL,
28   item_id INT NOT NULL,
29   item_quantity INT NOT NULL,
30   FOREIGN KEY (order_id) REFERENCES orders(order_id),
31   FOREIGN KEY (item_id) REFERENCES item(item_id)
32 );
33
34
```

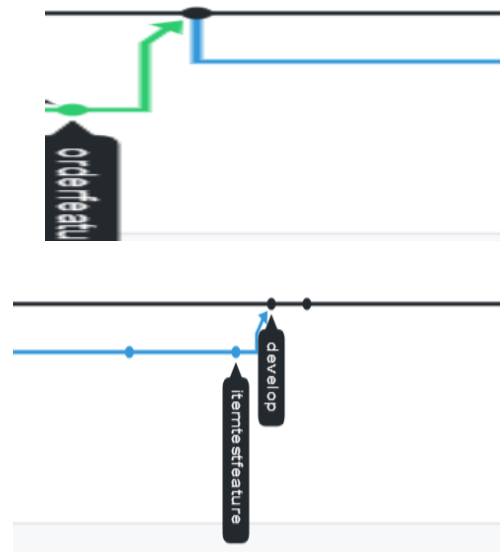
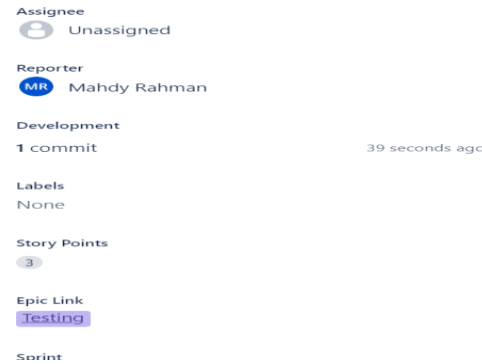
Original schema with original MYSQL codes

```
1 INSERT INTO `ims`.`customers` (`first_name`, `surname`) VALUES ('mahdy', 'rahman');
2 INSERT INTO `ims`.`customers` (`first_name`, `surname`) VALUES ('jordan', 'harrison');
3 INSERT INTO `ims`.`customers` (`first_name`, `surname`) VALUES ('michael', 'jordan');
4 INSERT INTO `ims`.`customers` (`first_name`, `surname`) VALUES ('lebron', 'james');
5 INSERT INTO `ims`.`customers` (`first_name`, `surname`) VALUES ('kevin', 'durant');
6 INSERT INTO `ims`.`customers` (`first_name`, `surname`) VALUES ('kyrie', 'irving');
7
8
9 INSERT INTO `ims`.`items` (`item_name`, `price`) VALUES ('glasses', '29.99');
10 INSERT INTO `ims`.`items` (`item_name`, `price`) VALUES ('ps5', '499.99');
11 INSERT INTO `ims`.`items` (`item_name`, `price`) VALUES ('watch', '200.00');
12 INSERT INTO `ims`.`items` (`item_name`, `price`) VALUES ('backpack', '15.99');
```

Insertions

CI – Continuous integration

- Starting off by forking original repository
- Created a develop branch
- Created feature branches off the develop branch
- Continuously made commits and constantly pushed back to the origin feature branches to ensure work is saved
- Made pull requests from Github to merge feature and develop branches
- Pulled from develop to ensure most up to date version of project was being used
- Commits were also recorded on JIRA



```
initialized empty git repository in C:/users/mahdy/OneDrive/Desktop/QA first project/IMS-Starter/.git/

Mahdy@DESKTOP-G0301QM MINGW64 ~/OneDrive/Desktop/QA first project/IMS-Starter (main)
$ git remote add origin https://github.com/mahdyrahman98/IMS-Starter.git

Mahdy@DESKTOP-G0301QM MINGW64 ~/OneDrive/Desktop/QA first project/IMS-Starter (develop)
$ git checkout -b itemfeature
Switched to a new branch 'itemfeature'

Mahdy@DESKTOP-G0301QM MINGW64 ~/OneDrive/Desktop/QA first project/IMS-Starter (itemfeature)
$ git add .

Mahdy@DESKTOP-G0301QM MINGW64 ~/OneDrive/Desktop/QA first project/IMS-Starter (itemfeature)
$ git commit -m "committing what I have done for items into my feature branch"
On branch itemfeature
nothing to commit, working tree clean

Mahdy@DESKTOP-G0301QM MINGW64 ~/OneDrive/Desktop/QA first project/IMS-Starter (itemfeature)
$ git status
On branch itemfeature
nothing to commit, working tree clean

Mahdy@DESKTOP-G0301QM MINGW64 ~/OneDrive/Desktop/QA first project/IMS-Starter (itemfeature)
$ git push origin -u itemfeature
MINGW64/c/Users/Mahdy/OneDrive/Desktop/QA first project/IMS-Starter
Your branch is up to date with 'origin/itemfeature'.

Mahdy@DESKTOP-G0301QM MINGW64 ~/OneDrive/Desktop/QA first project/IMS-Starter (develop)
$ git pull origin develop
remote: Enumerating objects: 39, done.
remote: Counting objects: 100% (39/39), done.
remote: Compressing objects: 100% (9/9), done.
remote: Total 12 (delta 4), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (12/12), 2.27 KiB | 36.00 KiB/s, done.
From https://github.com/mahdyrahman98/IMS-Starter
* branch develop -> FETCH_HEAD
ab24ce5..4aa80e1 develop -> origin/develop
Updating ab24ce5..4aa80e1
Fast-forward
 src/main/java/com/qa/ims/IMS.java      | 12 +-
 src/main/java/com/qa/ims/Runner.java   | 4 +-
 .../java/com/qa/ims/controller/CrudController.java | 3 +-
 .../com/qa/ims/controller/OrderController.java    | 38 +---
 .../com/qa/ims/controller/OrderitemController.java | 75 -----
 .../java/com/qa/ims/persistence/dao/OrderDAO.java  | 24 +++-
 .../com/qa/ims/persistence/dao/OrderitemDAO.java  | 153 -----
 .../java/com/qa/ims/persistence/domain/Order.java | 10 +-
 src/main/resources/sql-schema.sql      | 5 +
 9 files changed, 64 insertions(+), 260 deletions(-)
```


Sprint Review

What was completed?


- Developed a comprehensive jira board implementing MosCow method and agile way of work
- Created a risk assessment
- Created ERDS and UMLs
- Used continuous integration, utilising feature branch models
- Developed CRUD functions of items and partially for orders

Backlog









 Only My Issues Recently Updated

VERSIONS  QAP Sprint 3 4 issues

Start sprint

Plan sprint 

...

VERSIONS EPICS	 As an admin I need to be able to calculate the costs of an order so that I know how much money is required to complete the order	Database Infrastructure	QAP-12		2
	 As a developer I need to run tests so that I can see whether my code is successful	Testing	QAP-31		3
	 As a developer I need to write the code for each class required so that the program can run	Application build	QAP-27		7
	 As a developer I need to make a fat jar so that I can run my program on command prompt	Application build	QAP-38		2

+ Create issue

Sprint Retrospective

What was left behind?

- Did not finish testing coverage and final crud function of the order controller - calculating costs of items
- As a result could not implement fat.jar which could be then deployed from the command line

Testing

Item	Coverage	ed Instructions	ed Instructions	tal Instructions
ims	11.7 %	382	2,875	3,257
src/main/java	8.0 %	206	2,384	2,590
src/test/java	26.4 %	176	491	667
com.qa.ims.controllers	41.3 %	176	250	426
CustomerControllerTest	0.0 %	0	206	206
ItemControllerTest	80.0 %	176	44	220
com.qa.ims.persistence.da	0.0 %	0	225	225
ItemDAOTest	0.0 %	0	115	115
CustomerDAOTest	0.0 %	0	110	110

```
msd@DESKTOP-G0301QM: C:\Users\msd\OneDrive\Desktop\QA\IMS-Starter (master)
$ mvn clean
[INFO] Scanning for projects...
[INFO]
[INFO] -----< com.qa:ims >-----
[INFO] Building ims 0.0.1
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- maven-clean-plugin:2.5:clean (default-clean) @ ims ---
[INFO] Deleting C:\Users\msd\OneDrive\Desktop\QA\IMS-Starter\target
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 0.405 s
[INFO] Finished at: 2021-02-12T00:16:56Z
[INFO]
msd@DESKTOP-G0301QM MINGW64 ~/OneDrive/Desktop/QA/IMS-Starter (master)
$ mvn package
[INFO] Scanning for projects...
[INFO]
[INFO] -----< com.qa:ims >-----
[INFO] Building ims 0.0.1
[INFO] -----[ jar ]-----
```

```
[INFO] -----
[INFO] BUILD FAILURE
[INFO] -----
[INFO] Total time: 21.202 s
[INFO] Finished at: 2021-02-12T00:18:10Z
[INFO] -----
[ERROR] Failed to execute goal org.apache.maven.plugins:maven-surefire-plugin:2.
12.4:test (default-test) on project ims: There are test failures.
[ERROR]
[ERROR] Please refer to C:\Users\Mahdy\OneDrive\Desktop\QA\IMS-Starter\target
\surefire-reports for the individual test results.
[ERROR] -> [Help 1]
[ERROR]
[ERROR] To see the full stack trace of the errors, re-run Maven with the -e swit
ch.
[ERROR] Re-run Maven using the -X switch to enable full debug logging.
[ERROR]
[ERROR] For more information about the errors and possible solutions, please rea
d the following articles:
[ERROR] [Help 1] http://cwiki.apache.org/confluence/display/MAVEN/MojoFailureExc
eption
msd@DESKTOP-G0301QM MINGW64 ~/OneDrive/Desktop/QA/IMS-Starter (master)
```

Conclusion/Reflection

- Project was partially a success however some tasks from the MVP was not completed
- Developed a better understanding of Java/Maven and J unit
- Improved understand of Jira boards and the significance of ERDS

The image features a dark gray background with four overlapping circles in two shades of blue. A horizontal white band runs across the center of the image. The word "End" is centered within this band.

End