

# IMS Project presentation

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AYUB YUSUF

SDET PROGRAMME (SOFTWARE DEVELOPMENT ENGINEER IN TEST)

# Project Objective

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IMS project:

- Build an application which interacts with a managed database
- The application must use supporting tools, methodologies and technologies that encapsulates all modules covered during training

# Technologies used

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- **Version Control System:** Git
- **Source Code Management:** GitHub
- **Kanban Board:** Jira
- **Database Management System:** MySQL
- **Back-End Programming Language:** Java
- **Build Tool:** Maven
- **Unit Testing:** JUnit

# Scope

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- Code fully integrated into a Version Control System using the feature-branch model: master/dev/multiple features.
- A project management board with full expansion on user stories, acceptance criteria and tasks needed to complete the project.
- A risk assessment which outlines the issues and risks faced during the project timeframe.
- A relational database used to persist data for the project, containing the customers, products, orders, and orders\_items tables. Relationships should be modelled using an ERD.
- A functional application 'back-end', following best practices and design principles, in the language that you have covered during training, meeting the requirements set on your project management board.
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# Risk Assessment

Risk	Description	Response Strategy	Likelihood [1-10]	Impact [1-10]	Risk Level (Likelihood*Impact) [1-100]
Java	The OOP training in Java was very fast paced. Therefore, I did not grasp the concepts as well as I would have liked. This could be problematic when working on the IMS project since it requires thorough understanding of OOP principles.	I will read through the OOP chapters on QA community and attempt the exercises in order to solidify my understanding of OOP principles. This will be done before the IMS project is attempted. This will allow me to approach the project with confidence and progress with high productivity.	9	9	81 [VERY HIGH]
MySQL	MySQL was covered in weeks 1 and 2 of the course. It has therefore been a while and it is likely that I will have forgotten some of the commands and syntax.	I will read through the powerpoint slides on MySQL. This will refresh my memory on how to create tables and populate them in MySQL.	6	4	24 [LOW]
COVID-19	Due to COVID-19 it is possible that myself or a family member could fall ill. This could result in myself needing to take time out and therefore significantly reduce the likelihood of delivering the project on time.	I will ensure that I stay safe and minimise contact with members outside of my household. This will reduce the chances of me falling ill and allow me to deliver the project on time.	3	9	27 [MEDIUM]

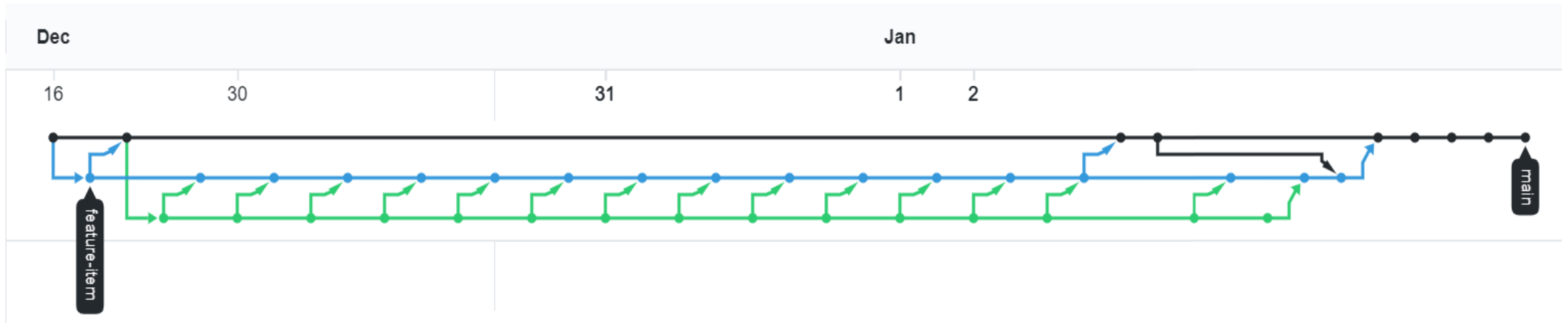
GitHub	It is possible that during the project I make a mistake and delete/alter a file accidentally. This could be detrimental as a lot of time may be wasted trying to manually create another file.	I will make regular commits to my GitHub repository. If I make a mistake in the project that I cannot undo then I can revert to an older commit. This will provide an invaluable time-saving safety net.	4	6	24 [LOW]
Concentration	Remote working has brought with it a wide spectrum of difficulties such as difficulty with communication etc. My neighbours will be carrying out building work during the time I am working on the project. This will make it extremely difficult to concentrate.	I will invest in a pair of noise-cancelling headphones. This will allow me to focus and be productive. As a last resort I will work outdoors at the local park.	9	7	63 [HIGH]

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# Version control system: Git





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# Project management board: Kanban

The screenshot displays a Jira Kanban board. On the left is a sidebar for 'Epic' management, showing a list of epics: 'Issues without epic', 'CRUD functionality' (selected), 'Runnable jar', 'Insights', 'Order manipulation', and 'Testing'. Below this list are fields for 'Start date' and 'Due date' (both set to 'None') and a 'View all details' button. The main board area is divided into two sections: 'Sprint 2' and 'Backlog'.

**Sprint 2** (2 Jan – 9 Jan, 4 issues):

- ✓ I1-2 As a User, I want to be able to create a customer record (CRUD FUNCTIONALITY) DONE
- ✓ I1-3 As a User, I want to be able to read all customers in the system (CRUD FUNCTIONALITY) DONE
- ✓ I1-4 As a User, I want to be able to update a customers' details in the system (CRUD FUNCTIONALITY) DONE
- ✓ I1-5 As a User, I want to be able to delete a customer from the system (CRUD FUNCTIONALITY) DONE

**Backlog** (13 issues):

- ✓ I1-11 As a User, I want to be able to add an item to the system (CRUD FUNCTIONALITY)
- ✓ I1-12 As a User, I want to be able to view all items in the system (CRUD FUNCTIONALITY)
- ✓ I1-13 As a User, I want to be able to update an item in the system (CRUD FUNCTIONALITY)
- ✓ I1-14 As a User, I want to be able to delete an item in the system (CRUD FUNCTIONALITY)
- ✓ I1-15 As a User, I want to be able to create an order in the system (CRUD FUNCTIONALITY)
- ✓ I1-16 As a User, I want to be able to view all orders in the system (CRUD FUNCTIONALITY)
- ✓ I1-17 As a User, I want to be able to delete an order in the system (CRUD FUNCTIONALITY)
- ✓ I1-18 As a User, I want to be able to add an item to an order (ORDER MANIPULATION)
- ✓ I1-20 As a User, I want to be able to delete an item in an order (ORDER MANIPULATION)
- ✓ I1-10 As a User, I want to be able to access the IMS via a "Runnable jar" (RUNNABLE JAR)
- ✓ I1-19 As a User, I want to be able to calculate the cost of an order (INSIGHTS)
- ✓ I1-23 As a User, I want to be notified if an order exceeds an item's stock (INSIGHTS)
- ✓ I1-25 As a User, I want the IMS to be rigorously tested to the industry standard of 80% to increase reliability (TESTING)

To effectively manage my project, I adopted an Agile approach.

I used a Kanban board (a feature of Jira) to manage my project.

The first step of the planning was to add to the backlog.

# Project management board: Kanban

Projects / IMS\_1

## Sprint 4

AY | Epic ▾

TO DO

IN PROGRESS

DONE 4 ✓

As a User, I want to be able to add an item to the system

CRUD FUNCTIONALITY

✓ II-11 ✓

As a User, I want to be able to view all items in the system

CRUD FUNCTIONALITY

✓ II-12 ✓

As a User, I want to be able to update an item in the system

CRUD FUNCTIONALITY

✓ II-13 ✓

As a User, I want to be able to delete an item in the system

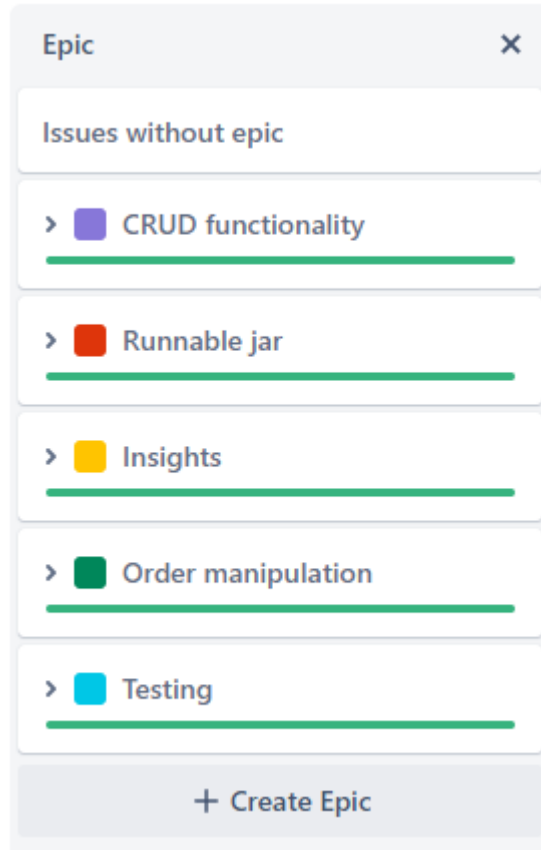
CRUD FUNCTIONALITY

✓ II-14 ✓

At the start of the day I would create a sprint and work on it throughout the day until marking it as done.

# Project management board: Kanban

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The following epics were created:

- CRUD functionality
- Runnable jar
- Insights
- Order manipulation
- Testing

All epics were successfully completed.

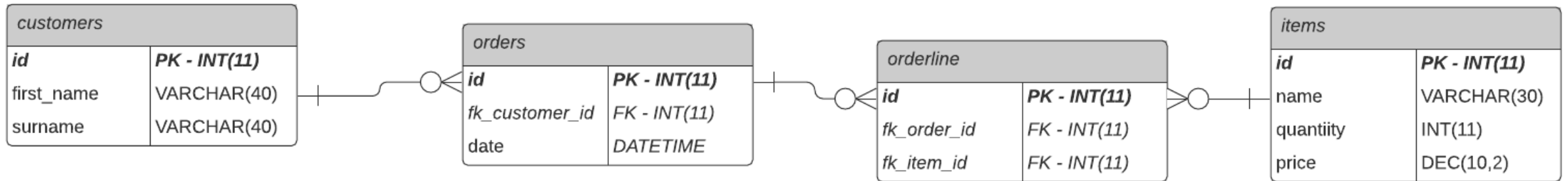
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# Relational database: ERD model

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## Back-end: UML diagram



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# Build of application: fat .jar

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I will now provide a demonstration of the application and its features.

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# Testing

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A coverage of 68.8% was achieved.

Due to this being my first project using Junit testing, I fell short of the industry standard of 80% coverage.

# Test Demonstration

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I will now demonstrate some of the tests I carried out.

# Questions?

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