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**Pathway: Work Integrated Learning 3**

**Module Code: XBCAD7319**

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**Due Date: 27 September 2024**

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# 1. INTRODUCTION

TK and NZ Trading and Projects PTY LTD are a company based in the Johannesburg which specialises in rendering transportation services. They offer a range of transport options from home removals to delivering packaging materials. The company is quite new and is lacking in certain areas. One of the areas is a weak online presence when compared to the competitors. Therefore, the team has been tasked to develop a website where prospective clients may visit and pay for their desired services.

## 1.1 Agreement Of Work

Furthermore, the team comprises of three people, and work has been divided amongst the members based on the expertise. The first member Mehluli Booi has been assigned to be the scrum master of the group and has been assigned to DevOps and quality assurance and testing. He is responsible for ensuring that the infrastructure is running and can keep up with the demand of an increase in the number of active users and that security measures are in place. The second member is Lesego Ramosa who will be the backend developer for this project. His job is to deal with behind-the-scenes processes that are not seen by the registered user, such as server-side logic and the managing of the database. He will also oversee the creation and the integration of the API that is to be used in the application. The third member is Lwazi Mesatywa who will be the frontend developer of the project. His role is to develop and design the user interface (UI) of the system, which is the first and only thing users will be interacting with on the system. He will ensure that the website looks good enough that the users will keep returning to the site.

## 1.2 Definition Of Ready (DoR)

The Definition of Ready is a set of agreed upon criteria that a project backlog item must meet to qualify for development, meaning that it is ready to be worked on (Banica, 2024). The team has decided to breakdown their definition of ready into 9 categories which every feature, user story and task should meet to be approved for development. The criteria are clear definition, identification of dependencies and blockers, clear business value, designs and UX are ready, technical requirements and specifications are provided, proper estimation was made, defined criteria for testing, resource availability confirmed, and stakeholder approval.

Therefore, for a task to be considered ready, the user story or action and desired action should be clearly outlined. The dependencies on resources should be given and whether the task is aligned with the business goals and objectives before allocating resources. Mock up screens should be there along with the technical requirements of the chosen task, such as database models and API contracts. Value estimations based on risk, complexity and required effort are made by the team to check if the suggested task is worth it in the long run and quality acceptance tests are then provided to make sure the tester knows how to assess the functionality of the feature. Stakeholders should give their approval, and the team should check if they have sufficient resources to complete the task whether it be time or human resources.

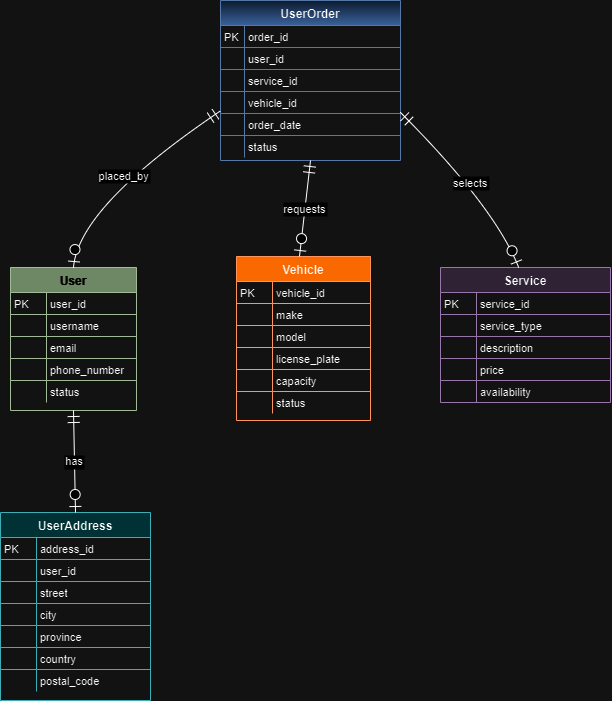
## 1.3 Definition of Done (DoD)

The Definition of Done is a set of exit criteria which an item should meet to ensure that it is done and needs no further work done (Thannermalai, 2019). The team has opted to go for 7 prerogatives the task or the entire project should meet to be considered as complete. These are core functionality is implemented and tested, front and backend are completed, testing and quality assurance have been done, deployment and infrastructure is prepared, documentation and post launch maintenance plans have been drawn up.

Furthermore, for a task to be completed, the core functionality needs to be there and tested and both the development of the front and backends should be thoroughly completed. The infrastructure required for a successful deployment should be in place and the quality of the task needs to be tested and approved. Finally, all documentation concerning the task needs to be completed such as the technical documentation and the user documentation. This needs to be in conjunction with the preparation and completion of the post launch maintenance plans before being considered by the team as done.

# 6. DATA SCHEMA DOCUMENTATION

## 6.1 Entity Relationship Diagram



## 6.2 JSON Schemas

### 6.2.1 User Document

{

"UserID": "u123",

"UserName": "John Doe",

"Email": "john.doe@example.com",

"Password": "hashed\_password",

"PhoneNumber": "123-456-7890",

“Status”: “Registered”

}

### 6.2.2 Service Document

{

"ServiceID": "s456",

"ServiceType": "Local Delivery",

"Description": "Delivering items within the same neighbourhood",

"Price": 5.00,

“Availability”: “Available”

}

### 6.2.3 UserOrder Document

{

"OrderID": "o789",

"UserID": "u123",

"ServiceID": "s456",

"OrderDate": "2024-09-27T10:00:00Z",

“VehicleID”: “v702”,

"Status": "Delivered"

}

### 6.2.4 Vehicle Document

{

“VehicleID”: “v702”,

“Make”: “Hyundai”,

“Model”: “H100”,

“LicensePlate”: “MB 23 LR GP”,

“Capicity”: “150 KG”,

“Status”: “Available”

}

### 6.2.5 UserAddress Document

{

“AddressID”: “ad184”,

“UserID”: “u123”,

“Street”: “Trite Avenue”,

“City”: “Midrand”,

“Province”: “Gauteng”,

“Country”: “South Africa”,

“PostalCode”: “1947”

}

# 8. SECURITY

According to John ( 2024) there were 2,365 recorded cyberattacks in 2023, with 343,338,964 victims. This is why the team will secure this application against the most common cyber attacks. The team has decided to host the website on Coderly.online where it will be secured using SSL/TLS. The user’s data is also encrypted when they use the payment portal to ensure that the user’s data is not transferred as plain text which can be read by any attacker.

# 8.1 Common Types Of Attacks Mitigated Using SSL/TLS

* Man-In-The-Middle (MITM) attacks: According to Venafi (2024), SSL/TSL encryption generally protects against MITM attacks. This is achieved by encrypting the data in transit, making it harder to intercept and change the communication between the client and the server.
* Session Hijacking: SSL/TLS encryption protects session data by encrypting it and ensuring attackers are unable to steal session credentials and data (Certera, 2024).
* Downgrade attacks: These attacks trick websites into implementing older less secure versions of TLS. SSL/TSL ensures that only the most secure protocols are in use when the website is being used (Baran, 2023)
* Phishing and Spoofing: SSL certificates authenticate any website to ensure that users are not being lured to fraudulent websites by attackers with malicious intentions (Venafi, 2024).
* Data tampering: SSL/TSL maintains data integrity by using cryptographic checksums that alert all parties if any data has been changed in transit (Certera, 2024).
* Distributed Denial of Service (DDoS) attacks: Although it does not directly prevent DDoS attacks, by providing secure connections SSL can mitigate the effects by protecting the vulnerabilities that attackers exploit (Baran, 2023).
* Exhaustion Attacks: These attacks aim to overwhelm the server by making many requests. SSL/TSL manages resources efficiently to prevent this attack (Certera, 2024).

# 12. APPENDICES

## 12.1 Declaration Of Authenticity

Declaration of authenticity

Mehluli Ofentse Booi 0309085197080

Lesego Ramosa 0402235195086

Lwazi Mesatywa 0210165063087

**I, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ID Number, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**hereby declare that this portfolio, and any evidence included therein, contains**

**my own independent work and that I have not received help from other groups.**

**I confirm that we have not committed plagiarism in the accomplishment of this**

**work, nor have I falsified and/or invented experimental data.**

**I accept the academic penalties that may be imposed for violations of the**

**above.**

**CODE\_\_ADDICTS\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_M.O.B\_L.R\_\_L.M\_\_\_\_\_**

**STUDENT SIGNATURE DATE 27 September 2024**

## 12.2 Scrum Details

Scrum Agile Board: <https://trello.com/invite/b/66f3ec71915caa196897689b/ATTIef1728e5d554052d2e321f8c6618193111439D30/code-addicts>

A screenshot of a computer

Description automatically generated

As Code Addicts, we are making use of an agile scrum board namely Trello. In Part 1, we had a sprint goal on Friday, 27 September 2024 and we separated tasks on the documentation amongst each other.

In Part 2, we have a sprint goal on Friday, 25 October 2024 and we planned on how we’re going to build the website making use of Figma. After that we started building the frontend of the pages which were the Home, Services, Payment, and Contact Us.

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