Requirements analysis

6.1 Introduction

This section will list the functional and non-functional requirements in detail for the system we are proposing, “system name”. The functional requirements are grouped into the following sub systems: User subsystem, Inventory subsystem, Order subsystem and administration subsystem.

6.2 Functional requirements list

6.2.1 Subsystem 1- User subsystem

1.1. Login

1.2. Logout

1.3. Create user

1.4. Manage users

1.5 Delete user

6.2.2 Subsystem 2- Inventory subsystem

2.1. Scan inventory

2.2. View inventory

2.3. Update inventory

6.2.3 Subsystem 3- Order subsystem

3.1. Place order

3.2. View order

6.2.4 Subsystem 4- Admin subsystem

4.1. Produce sales report

4.2. Produce stock report

4.3. Report notification

6.3 Functional requirement description and detail

Subsystem 1- User Subsystem

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| Functional  Requirement | Explanation |
| Requirement number: | 1.1 |
| Requirement name (use case name): | Login |
| Requirement short description: | The system should allow for a user to log on to the system. |
| Requirement detailed description and constraints: | Description:  Each user can log onto the system with their user ID and password.  Constraints:   * None |
| Business rules applicable to this requirement | * All passwords should be encrypted and hashed * The login page should be the same for all users |
| Revision date and Revision number: | 2022-05-25 Version 1.0 |
| Criticality/Priority: | High |

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| Functional  Requirement | Explanation |
| Requirement number: | 1.2 |
| Requirement name (use case name): | Logout |
| Requirement short description: | The system should allow a user to log out of the system. |
| Requirement detailed description and constraints: | Description:  The system should provide a simple way for user to log out of the system. This should also be accessible from any screen.  Constraints:   * None |
| Business rules applicable to this requirement | * The user should be able to log out from any page. |
| Revision date and Revision number: | 2022-05-25 Version 1.0 |
| Criticality/Priority: | High |
| Functional  Requirement | Explanation |
| Requirement number: | 1.3 |
| Requirement name (use case name): | Create user |
| Requirement short description: | The system should allow a manager to create a new user. |
| Requirement detailed description and constraints: | Description:  A manager should be able create a new user on the system which will allow different employees to access the system. The manager will enter the employee’s Name and Surname, as well as the password and user ID that will be used to log in.  Constraints:   * A duplicate user cannot be made |
| Business rules applicable to this requirement | * Name, Surname, password and user ID must be provided. * A strong password should be used |
| Revision date and Revision number: | 2022-05-25 Version 1.0 |
| Criticality/Priority: | High |

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| Functional  Requirement | Explanation |
| Requirement number: | 1.4 |
| Requirement name (use case name): | Manage users |
| Requirement short description: | The system should allow a manager to manage all users. |
| Requirement detailed description and constraints: | Description:  The manager should be able to view all users as well as being able to manage their information. The manager will enter their password in order to do this.  Constraints:   * None |
| Business rules applicable to this requirement | * Only a manager should be able to manage users * The manager needs their password |
| Revision date and Revision number: | 2022-05-25 Version 1.0 |
| Criticality/Priority: | High |
| Functional  Requirement | Explanation |
| Requirement number: | 1.5 |
| Requirement name (use case name): | Delete user |
| Requirement short description: | The system should allow a manager to delete a user. |
| Requirement detailed description and constraints: | Description:  The manager should be able to delete a user and their information along with it. The manager will enter their password in order to do this.  Constraints:   * None |
| Business rules applicable to this requirement | * Only a manager should be able to delete a user * A manager’s password is needed |
| Revision date and Revision number: | 2022-05-25 Version 1.0 |
| Criticality/Priority: | High |

Subsystem 2- Inventory Subsystem

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| Functional  Requirement | Explanation |
| Requirement number: | 2.1 |
| Requirement name (use case name): | Scan inventory |
| Requirement short description: | The system should allow a user to scan a product |
| Requirement detailed description and constraints: | Description:  A user can use a barcode scanner to scan a product for it’s information  Constraints:   * None |
| Business rules applicable to this requirement | * A product needs a barcode * Any user can scan a product |
| Revision date and Revision number: | 2020-02-19 Version 1.0 |
| Criticality/Priority: | High |

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| Functional  Requirement | Explanation |
| Requirement number: | 2.2 |
| Requirement name (use case name): | View inventory |
| Requirement short description: | A user can view the products inventory |
| Requirement detailed description and constraints: | Description:  The system would allow a user to view quantities and information on different products. If inventory is low, the system will notify user.  Constraints:   * None |
| Business rules applicable to this requirement | * Any user can view the inventory. |
| Revision date and Revision number: | 2020-02-19 Version 1.0 |
| Criticality/Priority: | High |

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| Functional  Requirement | Explanation |
| Requirement number: | 2.3 |
| Requirement name (use case name): | Update inventory |
| Requirement short description: | A user can update the inventory information |
| Requirement detailed description and constraints: | Description:  The system allows a user to update the VIN numbers, product information, and the quantity available after the purchase or sale of stock.  Constraints:   * None |
| Business rules applicable to this requirement | * Any user can update the inventory |
| Revision date and Revision number: | 2020-02-19 Version 1.0 |
| Criticality/Priority: | High |

Subsystem 3- Order Subsystem

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| Functional  Requirement | Explanation |
| Requirement number: | 3.1 |
| Requirement name (use case name): | Place order |
| Requirement short description: | The system should allow a manager to place an order |
| Requirement detailed description and constraints: | Description:  A manager should be allowed to place an order to suppliers for stock. A manager’s password is required to place an order  Constraints:   * None |
| Business rules applicable to this requirement | * Only a manager can place an order * Managers password is needed. |
| Revision date and Revision number: | 2020-02-19 Version 1.0 |
| Criticality/Priority: | High |

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| Functional  Requirement | Explanation |
| Requirement number: | 3.2 |
| Requirement name (use case name): | View order |
| Requirement short description: | The system should allow a manager to view orders. |
| Requirement detailed description and constraints: | Description:  A manager should be allowed to view the current order and even past orders from suppliers.  Constraints:   * None |
| Business rules applicable to this requirement | * . Only a manager can place an order |
| Revision date and Revision number: | 2020-02-19 Version 1.0 |
| Criticality/Priority: | High |

Subsystem 4- Administration Subsystem

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| Functional  Requirement | Explanation |
| Requirement number: | 4.1. |
| Requirement name (use case name): | Produce sales report |
| Requirement short description: | The system should produce a sales report |
| Requirement detailed description and constraints: | Description:  The system produces a sales report based on the last 30 days of stock sales as well as services/repairs provided. Should provide total income.  Constraints:   * None |
| Business rules applicable to this requirement | * Sales report depends on sales of stock as well as services provided |
| Revision date and Revision number: | 2020-02-19 Version 1.0 |
| Criticality/Priority: | High |

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| Functional  Requirement | Explanation |
| Requirement number: | 4.2 |
| Requirement name (use case name): | Produce stock report |
| Requirement short description: | The system should produce a stock report |
| Requirement detailed description and constraints: | Description:  The system produces a stock report based on the current stock levels and compares it to that of the stock in the last report.  Constraints:   * There might not be a record of the previous stock report |
| Business rules applicable to this requirement | * Based off the current levels of stock * Compared to last stock report |
| Revision date and Revision number: | 2020-02-19 Version 1.0 |
| Criticality/Priority: | High |

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| Functional  Requirement | Explanation |
| Requirement number: | 4.3 |
| Requirement name (use case name): | Report notification |
| Requirement short description: | The system should send a notification to the manager(s) |
| Requirement detailed description and constraints: | Description:  The system should send a notification to the manager(s) regarding the sales and stock reports so that they can view them.  Constraints:   * None |
| Business rules applicable to this requirement | * Only managers should receive the notification * Should be done every 30 days |
| Revision date and Revision number: | 2020-02-19 Version 1.0 |
| Criticality/Priority: | High |

6.4 Non-functional requirements

6.4.1 Non-functional requirements list:

6.4.1.1 Performance:

1. Throughput

2. Sensible response time

6.4.1.2 Information:

3. Data integrity

4. Stored data

6.4.1.3 Economics:

5. Cost

6.4.1.4 Control and security:

6. Security

6.4.1.5 Efficiency:

7. User friendly

8. Reliable

9. Generation of data

6.4.1.6 Services:

10. Flexible

6.4.2.1 Performance

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| Non-Functional  Requirement | Explanation |
| Requirement & Title | 1. Throughput |
| Requirement text | The system should be able to transfer data from one location to another over the system in a short amount of time with efficiency. |
| Requirement type | Non-functional |
| Details and Constraints | * Throughput should be maximised to ensure high performance. * The system should not lag when being used to view, update information etc. |
| Revision date and Revision number: | 2015-02-19 Version 1.0 |
| Criticality/Priority: | High |

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| Non-Functional  Requirement | Explanation |
| Requirement & Title | 2. Sensible response time |
| Requirement text | The system should have a quick response time to user demands. |
| Requirement type | Non-functional |
| Details and Constraints | * Users should not have to wait for screens to load * Use of system should not be time-consuming |
| Revision date and Revision number: | 2015-02-19 Version 1.0 |
| Criticality/Priority: | High |

6.4.2.2 Information

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| Non-Functional  Requirement | Explanation |
| Requirement & Title | 3. Data integrity |
| Requirement text | The data of the system should be maintained and stored in a way that makes sure that the data remains accurate, complete and consistent. |
| Requirement type | Non-functional |
| Details and Constraints | * The data should be accurate, complete and consistent * Data should be well-organised * Human error should be minimalised |
| Revision date and Revision number: | 2015-02-19 Version 1.0 |
| Criticality/Priority: | High |

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| Non-Functional  Requirement | Explanation |
| Requirement & Title | 4. Stored data |
| Requirement text | Large amounts of data should be able to be stored on the system with regards to information about stock and services |
| Requirement type | Non-functional |
| Details and Constraints | * There should be constraints in place to prevent data leaks * There should be no loss of data in the case of the system failing. * The system should comply with the POPI act. |
| Revision date and Revision number: | 2015-02-19 Version 1.0 |
| Criticality/Priority: | High |

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6.4.2.3 Economics

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| Non-Functional  Requirement | Explanation |
| Requirement & Title | 5. Cost |
| Requirement text | The cost of the system should be a minimal as possible |
| Requirement type | Non-functional |
| Details and Constraints | * There should be no costs regarding the maintenance of the system |
| Revision date and Revision number: | 2015-02-19 Version 1.0 |
| Criticality/Priority: | High |

6.4.2.4 Control and security

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| Non-Functional  Requirement | Explanation |
| Requirement & Title | 6. Security |
| Requirement text | The system should have a high level of security to prevent data breaches |
| Requirement type | Non-functional |
| Details and Constraints | * Passwords should be hashed * The security and privacy of user’s contact information must be ensured * Only managers will be able to access certain aspects of the system * The system must comply with the POPI act * Managers can view and change all user’s information after entering their password. |
| Revision date and Revision number: | 2015-02-19 Version 1.0 |

6.4.2.5 Efficiency

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| Non-Functional  Requirement | Explanation |
| Requirement & Title | 7. User friendly |
| Requirement text | The system should allow the user to easily navigate the system and application. |
| Requirement type | Non-functional |
| Details and Constraints | * The interface should remain constant throughout the whole system * The presentation of the system should be clean and organised |
| Revision date and Revision number: | 2015-02-19 Version 1.0 |

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| Non-Functional  Requirement | Explanation |
| Requirement & Title | 8. Reliable |
| Requirement text | The system should be reliable in all tasks as well as in the completion of them. |
| Requirement type | Non-functional |
| Details and Constraints | * The system should not fail while updating the system, inventory or placing an order * Data on the system should not be leaked or lost * There should be no data redundancy |
| Revision date and Revision number: | 2015-02-19 Version 1.0 |

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| Non-Functional  Requirement | Explanation |
| Requirement & Title | 9. Generation of data |
| Requirement text | The system should provide accurate and timely data is provided as an output or being viewed on the system. |
| Requirement type | Non-functional |
| Details and Constraints | * The data used for printing and producing reports must fulfil the tasks through generation. * The reports generated from stored data should be able to accessed easily. |
| Revision date and Revision number: | 2015-02-19 Version 1.0 |

6.4.2.6 Services

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| Non-Functional  Requirement | Explanation |
| Requirement & Title | 10. Flexible |
| Requirement text | The system should include all users through the operation that is based through factors that are easy to adapt and dynamic |
| Requirement type | Non-functional |
| Details and Constraints | * The system should allow for a change of environment that is easy to ensure that the data is still managed correctly and effectively after a change has been made. |
| Revision date and Revision number: | 2015-02-19 Version 1.0 |

6.5 Conclusion

In conclusion, this section has set out the functional and non-functional requirements for the “system name” system and has thus shed more light on how the actors will go about interacting with the system.