# **Requirements**

The following document outlines the requirements for the Online Plant Store System (OPSS). To ensure that all corners of the requirements finding process were covered, the **FURPS+** model to assess functional and on-functional requirements was considered.

## **Functional**

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| **Requirement ID :** | **FR001:** Select Item |
| **Definition:** | The system shall display detailed information when a user selects an item from the catalogue. |
| **Specification:** | - On click of a product in the BrowsePanel the system should:  - Form a SELECT query on the Product table  - Display a new ProductPanel with the following using JLabel’s: 200x200 image of the product, product name, price and description |

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| **Requirement ID :** | **FR002:** Cart Management |
| **Definition:** | Registered users may add products to their cart, from which they may alter the product quantity via a JSpinner |
| **Specification:** | - On click of the “Add to Cart” button the system must:  - Validate the user is first logged in  - Update the users cart object to display the product quantities and total price |

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| **Requirement ID :** | **FR003:** Checkout Process |
| **Definition:** | Users complete the Order by initiating a checkout process, validated by inputting payment details |
| **Specification:** | - On click of the “Checkout” button the system must:  - Build a form to input: Card Number, Card Holder, Address, CVV and Expiration Date (via JComboBox’s)  - On submit, the system will generate an INSERT query into the Orders table |

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| **Requirement ID :** | **FR004:** Browse Catalogue |
| **Definition:** | The system shall display a populated catalogue of items with a scrollable UI |
| **Specification:** | - A JPanel displaying a series of product item containers which hold information about each product in the Product table.  - Products are retrieved via a SELECT query in the Products table |

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| **Requirement ID :** | **FR005:** Order History |
| **Definition:** | Users must be able to view past orders with the aim of cancelling orders should they wish |
| **Specification:** | - A JTable displaying a history of all orders made by the logged in user.  - The table is populated via a SELECT query on the Customer table which INNER JOINS with the Orders table  - When an order is selected, the user may cancel the order by clicking the “Cancel Order” button.  - Onclick, a DELETE query in the Orders table is generated |

## **Non-Functional**

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| **Requirement ID :** | **NFR001:** Usability |
| **Definition:** | The system must be both learnable and accessible for new users |
| **Specification:** | - Learnability: Users must be able to comfortably adapt to the systems GUI, enabling them to purchase products quickly  - Accessible: The system must be designed bearing in mind users who may have vision impairments, such as font sizes, colours etc.  - Logging errors to a standard text file is a must, ensuring users can learn in more detail what errors may have occurred |

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| **Requirement ID :** | **NFR002:** Reliability |
| **Definition:** | The system must reliably deal with invalid data input from the user |
| **Specification:** | - Data input must be handled appropriately according to what may constitute as “bad data” or malicious data.  - Preventative measures against SQL Injection by using prepared statements |

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| **Requirement ID :** | **NFR003:** Performance |
| **Definition:** | The system must respond quickly and appropriately to user input |
| **Specification:** | - Interaction between the system and database must be seamless, ensuring the customer is met with a responsive application  - Any image scaling must be handled appropriately and with care, to ensure the performance drawback is not apparent to the user |

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| **Requirement ID :** | **NFR004:** Supportability |
| **Definition:** | The system must be maintainable for future iterations and expansion |
| **Specification:** | - Code must be well documented and conform to standard Object-Oriented principles  - System architecture must be well organised and make use of a MVC structure  - Extensive version history must be available on a version control platform |

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| **Requirement ID :** | **NFR005:** Security |
| **Definition:** | The system must be secure for the user to use |
| **Specification:** | - Any sensitive or precious data shall be handled with care  - Passwords must be securely stored in the database by first hashing the input. A standard SHA-256 algorithm may be deployed. |