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| **Requirement to test** | **Test Data Input** | **Expected Outcomes** | **Actual Outcomes** |
| **1. Main Menu** | | | |
| 1.1 Main menu is displayed when the program is run. | none | Main menu form displaying when the program is run. | Main menu form displaying when the program is run. |
| **2. Vendor Maintenance** | | | |
| * 1. Add a new vendor with valid data in all fields. | Vendor name: Books & Books  PB number: 123456  Country: 7 Japan  Email: book@gmail.com | A new Vendor record is saved in the database and the message “Vendor added successfully” is displayed | A new Vendor record is saved in the database and the message “Vendor added successfully” is displayed |
| * 1. Update an existing vendor’s name with valid data. | Vendor ID: 10  Vendor Name: Coffee & NoBooks  PB number: AX23111  Email: bookscoffee@yahoo.co.nz | The vendor record is updated in the database and the message “Vendor updated successfully” is displayed | The vendor record is updated in the database and the message “Vendor updated successfully” is displayed |
| * 1. Update an existing vendor’s post box number with valid data. | Vendor ID: 10  Vendor Name: Coffee & NoBooks  PB number: BN89772  Email: bookscoffee@yahoo.co.nz | The vendor record is updated in the database and the message “Vendor updated successfully” is displayed | The vendor record is updated in the database and the message “Vendor updated successfully” is displayed |
| * 1. Update an existing vendor’s email with valid data. | Vendor ID: 10  Vendor Name: Coffee & NoBooks  PB number: BN89772  Email: nobookscoffee@yahoo.co.nz | The vendor record is updated in the database and the message “Vendor updated successfully” is displayed | The vendor record is updated in the database and the message “Vendor updated successfully” is displayed |
| * 1. Delete an existing vendor that has no books. | Attempt to delete Vendor ID: 10 who has no books | The message “Are you sure want to delete this Vendor?” is displayed. .After that the vendor is deleted from the database and the message “Vendor deleted successfully” is displayed | The message “Are you sure want to delete this Vendor?” is displayed. .After that the vendor is deleted from the database and the message “Vendor deleted successfully” is displayed |
| * 1. Attempt to add a new vendor with an invalid name but with valid data in all other fields. | Vendor name:  PB number: 123456  Country: 7 Japan  Email: book@gmail.com | Error is displayed | The message “You must type in a Vendor name” is displayed. |
| * 1. Attempt to add a new vendor with an invalid post box number but with valid data in all other fields. | Vendor name: Books & NoBooks  PB number:  Country: 7 Japan  Email: book@gmail.com | Error is displayed | The message “You must type in a Post Box Number” is displayed. |
| * 1. Attempt to update an existing vendor with an invalid name. | Vendor name: Books & NoBooks  PB number: 123456  Country: 7 Japan  Email: book1234 | Error is displayed | The message “You must type an email in correct format” is displayed. |
| * 1. Attempt to delete an existing vendor that has books. | Attempt to delete Vendor ID: 1 who has books | Error is displayed | The message “You may only delete Vendors who do not have books” is displayed. |
| **3. Client Maintenance** | | | |
| * 1. Add a new client with valid data in all fields. | Last name: Carl  First name: Carlson  Street address: 12 Street st  Suburb: Suburburb  City: Just City  Country: 2 Australia  Email: [carl@yahoo.com](mailto:carl@yahoo.com)  Credit status: Valid | A new client record is saved in the database and the message “Client added successfully” is displayed | A new client record is saved in the database and the message “Client added successfully” is displayed |
| * 1. Update an existing client’s last name with valid data. | Client ID:13  Last name: Carl  First name: Donald  Street address: 235 Laleham Road  Suburb: Richmond  City: London  Country: 3 UK  Email: donaldlacey@yahoo.co.uk  Credit status: Valid | The client record is updated in the database and the message “Client updated successfully” is displayed. | The client record is updated in the database and the message “Client updated successfully” is displayed. |
| * 1. Update an existing client’s first name with valid data. | Client ID:13  Last name: Carl  First name: Carlson  Street address: 235 Laleham Road  Suburb: Richmond  City: London  Country: 3 UK  Email: donaldlacey@yahoo.co.uk  Credit status: Valid | The client record is updated in the database and the message “Client updated successfully” is displayed. | The client record is updated in the database and the message “Client updated successfully” is displayed. |
| * 1. Update an existing client’s street address with valid data. | Client ID:13  Last name: Carl  First name: Carlson  Street address: 12 Street st  Suburb: Richmond  City: London  Country: 3 UK  Email: donaldlacey@yahoo.co.uk  Credit status: Valid | The client record is updated in the database and the message “Client updated successfully” is displayed. | The client record is updated in the database and the message “Client updated successfully” is displayed. |
| * 1. Update an existing client’s city with valid data. | Client ID:13  Last name: Carl  First name: Carlson  Street address: 12 Street st  Suburb: Richmond  City: Just City  Country: 3 UK  Email: donaldlacey@yahoo.co.uk  Credit status: Valid | The client record is updated in the database and the message “Client updated successfully” is displayed. | The client record is updated in the database and the message “Client updated successfully” is displayed. |
| * 1. Delete an existing client that has no client orders. | Attempt to delete Client ID: 12 who has no orders | The message “Are you sure want to delete this Client?” is displayed. .After that the Client is deleted from the database and the message “Client deleted successfully” is displayed | The message “Are you sure want to delete this Client?” is displayed. .After that the Client is deleted from the database and the message “Client deleted successfully” is displayed |
| * 1. Attempt to add a new client with an invalid last name but with valid data in all other fields. | Last name: 123sad  First name: Carlson  Street address: 12 Street st  Suburb: Suburburb  City: Just City  Country: 2 Australia  Email: [carl@yahoo.com](mailto:carl@yahoo.com)  Credit status: Valid | Error is displayed | The message “Client's Last Name can contain only letters” is displayed. |
| * 1. Attempt to add a new client with an invalid first name but with valid data in all other fields. | Last name: Carl  First name: ;er;fw65  Street address: 12 Street st  Suburb: Suburburb  City: Just City  Country: 2 Australia  Email: [carl@yahoo.com](mailto:carl@yahoo.com)  Credit status: Valid | Error is displayed | The message "Client's First Name can contain only letters" is displayed. |
| * 1. Attempt to add a new client with an invalid street address but with valid data in all other fields. | Last name: Carl  First name: Carlson  Street address:  Suburb: Suburburb  City: Just City  Country: 2 Australia  Email: [carl@yahoo.com](mailto:carl@yahoo.com)  Credit status: Valid | Error is displayed | The message “You must type in a Client's Street Address” is displayed. |
| * 1. Attempt to add a new client with an invalid suburb but with valid data in all other fields. | Last name: Carl  First name: Carlson  Street address: 12 Street st  Suburb:  City: Just City  Country: 2 Australia  Email: [carl@yahoo.com](mailto:carl@yahoo.com)  Credit status: Valid | Error is displayed | The message “You must type in a Client's Suburb Name” is displayed. |
| * 1. Attempt to update an existing client with an invalid last name. | Client ID:13  Last name: Carl  First name: weer357;;  Street address: 12 Street st  Suburb: Richmond  City: Just City  Country: 3 UK  Email: donaldlacey@yahoo.co.uk  Credit status: Valid | Error is displayed | The message “Client's Last Name can contain only letters” is displayed. |
| * 1. Attempt to delete an existing client that has client orders. | Attempt to delete Client ID: 1 who has orders | Error is displayed | The message “You may only delete Clients who has no orders” is displayed. |
| **4. Client Order Maintenance** | | | |
| * 1. Add a new client order with valid data in all fields. | Client order data: 03 september 2017  Client: 7 Leyton Jim | A new client order record is saved in the database and the message “Client order added successfully” is displayed | A new client order record is saved in the database and the message “Client order added successfully” is displayed |
| * 1. Update an existing client order’s date with valid data. | Client order ID: 25  Client order data: 01 september 2000  Client: 7 Leyton Jim | The client record is updated in the database and the message “Client updated successfully” is displayed. | The client record is updated in the database and the message “Client updated successfully” is displayed. |
| * 1. Delete an existing client order that has no books. | Attempt to delete Client order ID: 23 that has no books | The message “Are you sure want to delete this Client Order?” is displayed. After that the Client Order is deleted from the database and the message “Client deleted successfully” is displayed | The message “Are you sure want to delete this Client Order?” is displayed. After that the Client Order is deleted from the database and the message “Client Order deleted successfully” is displayed |
| * 1. Mark as shipped an existing current client order. | Attempt to mark as shipped Client order ID: 25 | The client order’s status is changed to ‘Shipped’ in the database, and the message “Client Order marked as shipped” is displayed | The client order’s status is changed to ‘Shipped’ in the database, and the message “Client Order marked as shipped” is displayed |
| * 1. Mark as paid an existing shipped client order. | Attempt to mark as Paid Client order ID: 25 | The client order’s status is changed to ‘Paid’ in the database, and the message “Client Order marked as Paid” is displayed | The client order’s status is changed to ‘Paid’ in the database, and the message “Client Order marked as Paid” is displayed |
| * 1. Attempt to delete an existing client order that has at least one book. | Attempt to delete Client order ID: 1 that has books | Error is displayed | The message “You may only delete a client order that has no books” is displayed. |
| * 1. Attempt to mark as shipped an existing paid client order. | Attempt to mark as Shipped Client order ID: 25 | Error is displayed | The message “Only current client orders can be marked as shipped” is displayed. |
| * 1. Attempt to mark as paid an existing current client order. | Attempt to mark as Paid Client order ID: 1 | Error is displayed | The message “Only shipped client orders can be marked as paid” is displayed. |
| **5. Book Info Maintenance** | | | |
| * 1. Add a new book info record with valid data in all fields. | Title: Drunken Hedgehog  Author: 3 Chang Jung  Notes: | A new book info record is saved in the database and the message “Book Info added successfully” is displayed. | A new book info record is saved in the database and the message “Book Info added successfully” is displayed. |
| * 1. Update an existing book info record’s title with valid data. | Book Info ID: 25  Title: The Pickwick Glitches | The book info record is updated in the database and the message “Book Info updated successfully” is displayed. | The book info record is updated in the database and the message “Book Info updated successfully” is displayed. |
| * 1. Delete an existing book info record that has no books. | Attempt to delete Book Info ID: 22 that has no books | The message “Are you sure want to delete this Book Info?” is displayed. .After that the Book Info is deleted from the database and the message “Book Info deleted successfully” is displayed | The message “Are you sure want to delete this Book Info?” is displayed. .After that the Book Info is deleted from the database and the message “Book Info deleted successfully” is displayed |
| * 1. Attempt to add a new book info record with an invalid title but with valid data in all other fields. | Title:  Author: 3 Chang Jung  Notes: | Error is displayed | The message “You must type in a Book Title” is displayed. |
| * 1. Attempt to update an existing book info record with an invalid title. | Book Info ID: 25  Title: | Error is displayed | The message “You must type in a Book Title” is displayed. |
| * 1. Attempt to delete an existing book info record that has books. | Attempt to delete Book Info ID: 1 that has books | Error is displayed | The message “You may only delete book info records that have no books” is displayed. |
| **6. Book Maintenance** | | | |
| * 1. Add a new book  with valid data in all fields. | Book Info: 4 On Her Majesty’s Secret Service  Cost: 125  Price: 125  Date Published: 15.08.2017  Vendor: 7 Taylor’s Books | A new book record is saved in the database (with the client order id set to null) and the message “Book added successfully” is displayed. | A new book record is saved in the database (with the client order id set to null) and the message “Book added successfully” is displayed. |
| * 1. Update an existing book’s cost with valid data. | Book ID:37  Cost:1 | The book record is updated in the database and the message “Book updated successfully” is displayed. | The book record is updated in the database and the message “Book updated successfully” is displayed. |
| * 1. Delete an existing book that has a null client order id. | Attempt to delete Book ID: 30 | The message “Are you sure want to delete this Book?” is displayed. After that the Book is deleted from the database and the message “Book deleted successfully” is displayed | The message “Are you sure want to delete this Book?” is displayed. After that the Book is deleted from the database and the message “Book deleted successfully” is displayed |
| * 1. Attempt to add a new book with an invalid cost but with valid data in all other fields. | Book Info: 4 On Her Majesty’s Secret Service  Cost: aed11  Price: 125  Date Published: 15.08.2017  Vendor: 7 Taylor’s Books | Error is displayed | The message “You must type in a Cost as a number” is displayed. |
| * 1. Attempt to add a new book with an invalid price with valid data in all other fields. | Book Info: 4 On Her Majesty’s Secret Service  Cost: 125,15  Price: ddrgf22  Date Published: 15.08.2017  Vendor: 7 Taylor’s Books | Error is displayed | The message “You must type in a Price as a number” is displayed. |
| * 1. Attempt to update an existing book that has a client order id that is not null. | Attempt to update Book ID: 1 | Error is displayed | The message “You may only update Books which weren't ordered” is displayed. |
| * 1. Attempt to delete an existing book that has a client order id that is not null. | Attempt to delete Book ID: 1 | Error is displayed | The message “You may only delete Books which weren't ordered” is displayed. |
| **7. Add Books to a Client Order** | | | |
| * 1. Add a book to a current client order | Attempt to add BookID:2 to ClientOrderID:1 | The client order id in the book record is set to the client order id of the selected client order and the message “Book added successfully” is displayed | The client order id in the book record is set to the client order id of the selected client order and the message “Book added successfully” is displayed |
| * 1. Remove a book from a current client order | Attempt to remove BookID:22 from ClientOrderID:1 | The message “Are you sure want to remove this book?” is displayed. Then the client order id of the selected book record is set to null and the message “Book removed successfully” is displayed. | The message “Are you sure want to remove this book?” is displayed. Then the client order id of the selected book record is set to null and the message “Book removed successfully” is displayed. |
| * 1. Attempt to add a book to a shipped client order | Attempt to add BookID:9 to ClientOrderID:2 | Error is displayed | The message “Books can only be added to current orders” is displayed. |
| * 1. Attempt to remove a book from a shipped client order | Attempt to remove BookID:3 from ClientOrderID:2 | Error is displayed | The message “Books can only be removed from current orders” is displayed. |
| * 1. Attempt to add a book to a paid client order | Attempt to add BookID:9 to ClientOrderID:13 | Error is displayed | The message “Books can only be added to current orders” is displayed. |
| **8. Invoices Report** | | | |
| * 1. Produce the report with all requested fields present. | none | Report is produced | Report is produced |
| **9. Vendors Report** | | | |
| 9.1 Produce the report with all requested fields present. | none | Report is produced | Report is produced |