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| Test Case # | Test Purpose | Test Data | Expected Result | Actual Result |
| 1 | Database connect status can be correctly display | Enter a wrong database name | Error: connection can not establish | Error: connection can not establish |
| 2 | Database connect status can be correctly display | Correct db name: tool\_store\_143 | Message: Database connected! | Message: Database connected! |
| 3 | Menu can be correctly displayed | Start the program, select 1 | Main menu and query menu displayed | Main menu and query menu displayed |
| 4 | Main menu does not accept invalid input | Start the program, type in 4 | Error: Please enter 1-3 or x. | Error: Please enter 1-3 or x. |
| 5 | Query menu does not accept invalid input | Query menu select 5 | Error: Please enter 1-4. | Error: Please enter 1-4. |
| 6 | Query results can be displayed | Main menu selects 1, then query menu selects 1, 2, 3, or 4 | Query results displayed | Query results displayed |
| 7 | None exists customer can be detected when a customer name been typed in | Insert a rental record with none exist customer name: Qichen Jia | Error: The customer can not be found. | Error: The customer can not be found. |
| 8 | None exists tool can be detected when a tool name been typed in | Insert a rental record with none exist tool name | Error: The tool can not be found. | Error: The tool can not be found. |
| 9 | Insert rental record with proper return date populated | Insert a Hacksaw rental record | Return date (2020/04/19)= current date (2020/04/12) + tools.rental\_days (7) | Return date = 2020/04/19 |
| 10 | When inserting a new record, if the tool already been rented to this customer, it can be detected | Insert an already existed rental record. Customer: Walter White. Tool name: Hammer | Error: The tool has rented to this customer. | Error: The tool has rented to this customer. |
| 11 | When deleting a rental record, if the record does not exist, it can be detected | Delete a none existed record. Customer: Walter White. Tool name: Handsaw | Error: The tool did not rent to this customer. | Error: The tool did not rent to this customer. |
| 12 | When inserting records, the current rentals of customer and all existing tools displayed | Insert record: Walter White | Current rentals of customer and all existing tools displayed | Current rentals of customer and all existing tools displayed |
| 13 | Program keep running unless user select x in the main menu | Main menu select 1, query menu select 1, menu displayed again | Menu displayed again | Menu displayed again |
| 14 | Record updated after insert | Insert a new record: Walter White, Plunger | Record updated | Record updated |
| 15 | Record updated after delete | Delete a record: Walter White, Plunger | Record updated | Record updated |
| 16 | Keyboard interrupt properly handled | Run the program and press ctrl+c | Message: Exit by user keyboard interrupt. | Message: Exit by user keyboard interrupt. |