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| --- | --- | --- | --- | --- | --- |
| Subroutine / form | purpose | Input data | Expected outcome | Actual outcome | action |
| Various code from entities, dbcontext, datafunctions and testconsole) | Determining whether database is created on entering data for first user | ("Sample", "User", "myemail@email.com", "password", "salt", "student", 21) | Database created, and this data shown in first record of users table. All other tables are empty. | As expected |  |
| Remove user | Determine if a user can be deleted by calling removeuser | LibraryDataFunctions.RemoveUser("myemail@email.com", "password"); | User removed from users table in database | **System.InvalidOperationException**  due to there being two identical rows in the table | change .single() to .FirstOrDefault() |
| Remove user | Determine if a user can be deleted by calling removeuser | LibraryDataFunctions.RemoveUser("myemail@email.com", "password"); | User removed from users table in database | As expected |  |
| Edit user | Determine if a user can be deleted using the edituser function | LibraryDataFunctions.EditUser("myemail@email.com", "password", "FirstName", "changed") | First name of record in user table is changed from sample to changed | As expected |  |
| Edit user | Check if changing year works, as this had a parse operation not present in other fields | LibraryDataFunctions.EditUser("myemail@email.com", "password", "Year", "01"); | As above | Parse failed and throw statement caused an invalidcastexception | Fix errors in if statement so exception only runs when tryparse fails |
| Edit user | Check if changing year works, as this had a parse operation not present in other fields | LibraryDataFunctions.EditUser("myemail@email.com", "password", "Year", "01"); | As above | As expected |  |
| data validation on register form | Check if missing data is recognised | Holly, Wheeldon, “”, year 9, password, password | Messagebox prompts user to add missing details | As expected |  |
|  | Check if missing year group (as different form of entry) | Holly, Wheeldon, [myemail@email.com](mailto:myemail@email.com), “”, password, password | As above | As expected |  |
|  | Check if password validation works | Holly, Wheeldon, [myemail@email.com](mailto:myemail@email.com), year 9, password, 12345 | Messagebox prompts user to reenter passwords | As expected |  |
| Register form | User added to database | Holly, Wheeldon, [07hwheeldon@mybest.org.uk](mailto:07hwheeldon@mybest.org.uk), year 12, password | Return to login form, and user shows in database | **System.InvalidOperationException** | Change system.data.entity to Microsoft.entityframeworkcore and edit dbcontext accordingly |
|  | User added to database | Holly, Wheeldon, [07hwheeldon@mybest.org.uk](mailto:07hwheeldon@mybest.org.uk), year 12, password | Return to login form, and user shows in database | System.ArgumentException | Change usesqlserver() to useInMemorydatabase() |
|  | User added to database | Holly, Wheeldon, [07hwheeldon@mybest.org.uk](mailto:07hwheeldon@mybest.org.uk), year 12, password | Return to login form, and user shows in database | **System.FormatException** | Fixed data types of parameters, and reorganised constructor data interpretation |
|  | User added to database | Holly, Wheeldon, [07hwheeldon@mybest.org.uk](mailto:07hwheeldon@mybest.org.uk), year 12, password | Return to login form, and user shows in database | as expected | After adding connection string to config file |
| Admin home form | Book added to database | This is your brain on music, Daniel levitin, 781, isbn barcode | Book shows in database | **Microsoft.Data.SqlClient.SqlException** (due to model changes not having been applied) | Create migration to sync model and database |
| User home form | Barcode data entry works | This is your brain on music, Daniel levitin, 781, isbn barcode entered via scanner | Data inputted successfully | As expected |  |
| Admin home form | Book added to database | This is your brain on music, Daniel levitin, 781, isbn barcode | Book shows in database | As expected |  |
| App.config | Test storing of logged in user’s email in app.config | 07hwheeldon@mybest.org.uk | Email shows in app.config username | System.NullReferenceException | Add setting to app.config for data to be stored in |
| App.config | Test storing of logged in user’s email in app.config | 07hwheeldon@mybest.org.uk | Email shows in app.config username | Data not shown (as app.config compiled to bin in order to run) program accepts data from config but later causes **System.NullReferenceException**  when trying to access user | Fix accessing app.config. |
| Returns log / adminhomeform | Check out books functionality | This is your brain on music, Daniel levitin, 781, isbn barcode | Log added to database | Error due to returns log entity needing migration | Try to migrate |
| Migration | Migration |  | Migration created and database updated | System.InvalidOperationException in returnslog entity | Add fluid api to dbcontext to replace data annotations |
| Adminhomeform/returns log | Check out book | a-level comsci textbook, rsu Heathcote, 000, isbn barcode | Log added to database | **System.NullReferenceException** this.user not assigned a value when useremail is assigned | Added getuser function to access status property |
| Adminhomeform / returns log | Return book | a-level comsci textbook, rsu Heathcote, 000, isbn barcode | Returned updated to true | Nothing happened | Added call to closelog function |
| Take photo | Camera connect and takes photo |  | Video feed shows on left, and on click of capture button photo taken and displayed on right | Video feed shown, but stretched and distorted. Camera doesn’t capture photo on clicking button | Change size of videosourceplayer to aspect ratio 4:3, linked new frame event and function in videosourceplayer |
| Take photo | Camera connect and takes photo |  | Video feed shows on left, and on click of capture button photo taken and displayed on right | Capture displays, but not scaled to size of box. | Change sizemode attribute to zoom |
| Save photo | Camera saves photo from capture |  | Image from capture saved to folder imagecapture | **System.ArgumentException:** 'Parameter is not valid.' |  |
| cameraform | Camera turns off when save button is clicked and form closes |  |  | As expected |  |
| updateAddressEventArgs | Passing file location and name |  | When save button is clicked, path of file is copied to tbxfilename is adminhomeform | Doesn’t happen | Make the textbox visible |
| updateAddressEventArgs | Passing location and name |  | When save button is clicked, path of file is copied to tbxfilename is adminhomeform | As expected |  |
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