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Testing, Debugging & User documentation

Computer club Membership system

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Introduction

This program is a computer club registration system. It connects with a MySQL database to retrieve and update data about users, and the devices they own. One member may have many different devices. This application allows the user to enter personal data for a user, save the data in the database, and later add devices to the user via the 'view members' screen. The users information and their devices can be edited or deleted. The program will also save a 'log' of the time and date that the program was opened to a binary file. Currently, the club only accepts gamers and designers.

Testing strategy

The majority of the testing will be unit and black box testing. The application GUI's will be conducted using black box testing as this will allow us to ensure that everything is aligned, and shown correctly. This test will ensure that the data that is written to the binary file is correct, as well as check the MySQL database to ensure that the data is correctly recorded, updated and deleted.

Test – GUI

Main menu

Item	Item tested	Test Method	Expected result	Result
1	Layout	Compile and execute the program	• Program has a title • Heading text is visible and correctly positioned • All text boxes and buttons align correct and are not outside of the frame • Frame appears in the center of the screen • Computer club image is displayed correctly and on top of the window • Navigation buttons are shown at the bottom of the screen	✓
2	Exit	Click the 'exit' button, or the 'x' at the top right corner of the screen	• The application exits • All processes end	✓
3	Buttons	Click on each button in the main menu	• Do all of the buttons work as intended • Is the main menu hidden when clicking on a button	✓

[1: please note – the test was performed on Windows 10 preview – windows 10 has increased the size of the 'maximize/minimize/exit' buttons, making them overlap with the text on small windows]

Add new member

Item	Item tested	Test Method	Expected result	Result
1	Layout	In the main menu, click the 'add member' button	• Program has a title • All text boxes and buttons align correct and are not outside of the frame • Frame appears in the center of the screen • Navigation buttons are shown at the bottom of the screen (back | submit)	✓
2	Radio buttons	Click on the gamer/designer and male/female radio	• Clicking gamer will uncheck designer (and vice versa) • Clicking male will uncheck female (and vice versa) • clicking on gamer changes price to $140, and designer to $350 • clicking gamer hides the 'favourite software' label and text field, and shows the 'fvourite game' and	✓

Item	Item tested	Test Method	Expected result	Result
			'favourite genre' labels and text fields	
3	Select box	Clicking on the 'state' select box	• Shows a list of all states • Changes the selected state when clicked	✓
4	Back button	Clicking the 'back' button	• Shows the previous main menu • Hides the 'add member' window	✓

[1: heading not long enough to fully]

Member report

Item	Item tested	Test Method	Expected result	Result
1	Layout	In the main menu, click the 'view members' button	• Program has a title • Heading text is visible and correctly positioned • Frame appears in the center of the screen • Navigation buttons are shown at the bottom of the screen • Scroll bar is added when there is too many fields • JTable has appropriate headings	✓
2	Back button	Click the back button	• View members window is hidden • Main menu window is shown	✓
3	Add device	Click on a member in the JTable (selecting it) and click 'add device' button	• 'add device' window is shown • View members window is still shown	✓
4	Delete	Select a member in the JTable and click 'delete'	• Frame is updated, removing the user from the JTable.	x
5	Edit	Select a member and click the 'edit' button	• 'Edit' window is shown with data in appropriate places from the user.	✓

Device report

Item	Item tested	Test Method	Expected result	Result
1	Layout	In the main menu, click the 'Device report button	• Program has a title • Heading text is visible and correctly positioned • Frame appears in the center of the screen • Navigation buttons are shown at the bottom of the screen • Scroll bar is added when there are too many fields	✓

			• JTable has appropriate headings	
	Back	Click the back button	• Current window is hidden • Main menu window is shown	✓
	Edit	Click on a device from the list, and click edit	• The 'edit device' window is shown • The edit device window has appropriate information filled out based on previous selection	✓
	Delete	Click on a device from the list, then click the delete button	• The device is deleted • The JTable is updated	x

Testing procedure – input data

Add new member

Item	Input to test	Test data	Expected result	Result	Description of unexpected result
1	First name & last name	[blank]	Fail	Fail	
		9999	Fail	Accept	Only validating for length, not type of data
		[space][space][space]	Fail	Accept	As above
		Wu	Accept	Accept	
2	Age	[blank]	fail	fail	
		200	Fail	Fail	
		150	Accept	Accept	
		0	Accept	Accept	
		Hello	Fail	Fail	
		18hello	Fail	Fail	
3	Street number	[blank]	Fail	Fail	
		[space][space]	Fail	fail	
		12a	Accept	Accept	
		Twelve	Accept	Accept	
		27/4	Accept	accept	
4	Street name	[blank]	Fail	Fail	
		[space][space]	Fail	Accept	Only checking for length, not type of data
		23 Amazing road	Accept	Accept	
5	Suburb	[blank]	Fail	Fail	
		[space][space]	Fail	Accept	Only checking for length, not type of data

Add new device

Item	Input to test	Test data	Expected result	Result	Description of unexpected result
1	CPU	[blank]	Fail	Fail	

| | | 2.5 | Accept | Accept | |
| | | CORE I7 @ 3.5ghz | Accept | Accept | |

Saved log file

Item	Testing	Method	Expected result	Result
1	File creation	Delete the log file, and compile and run the program	The file is created and the current time and date is saved, followed by ',' to separate the next day	✓
2	File override	Have log file with data and run the program	Log file is not overridden, and has the current time and date added to the end of the file	✓
	Addition to file	Have a log file with data, run the program.	Program adds the current time and date to the end of the binary log file.	✓

Debugging:

1. All pages are created x times, depending on how many times (x) you have already clicked the button. As all items are static, we create one blank frame, then we add the static items to the other screen, resulting in a blank window, on top of the main window with the appropriate buttons and items. Semi resolved – the windows now check for the amount of action listeners (due to duplicate creation of them through the multiple screens)

2. Jtable does not update even though appropriate methods are called. Semi resolved by recreating the table, and reading it to the screen. All validate/repaint methods are skipped over, only way to see visual change is to resize the window/ click back, then click on the appropriate button in the main menu again.

Using the application

Starting the application

When the application starts, you will be presented with the following GUI screen.

In this screen you can click on the below navigation buttons.

Adding a new member

From the main menu, clicking the 'add new member' button will show you the following screen, along with hiding the previous 'main menu' screen.

This window allows the entered data to be saved in the MySQL database when the 'submit' button is pressed.

Firstly, you will need to choose whether the person is a gamer, or a designer – the price and additional fields will change depending on the selection.

The first and last name accepts 2-30 characters, to ensure that even people with unusually short/long names will not have a problem

The age field accepts data between 0-150 years

The street number field accepts both numbers and text, to ensure that a number of '12a' is still acceptable.

The street name and suburb requires at least 2 characters each, these fields accept both text and numbers.

When the selection gamer is selected, the 2 additional text fields are shown. This are optional, and are not required.

When all the required fields are entered, you may click the submit button. This will save the entered data into the MySQL database.
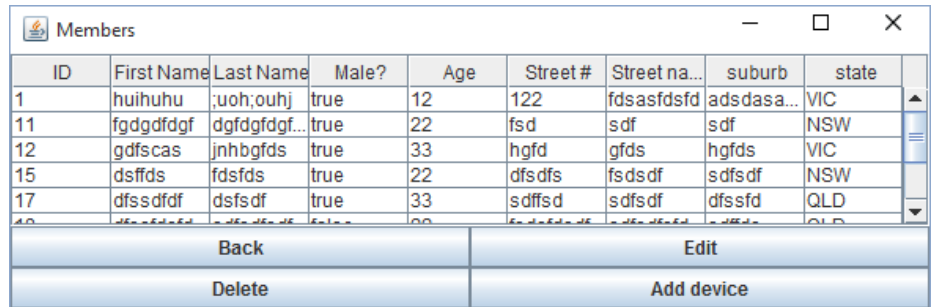
Member report

This window will show you a list of all current available members.

From here, you are able to click on a field, selecting it, and clicking the delete/edit/add new device. Not selecting a field will result

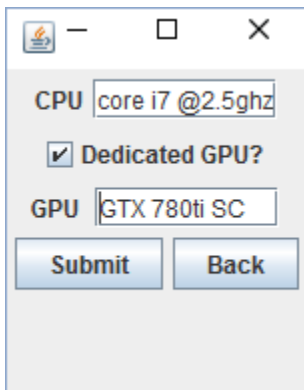| ID	First Name	Last Name	Male?	Age	Street #	Street na...	suburb	state
1	huihuhu	;uoh;ouhj	true	12	122	fdsasfdsfd	adsdasa...	VIC
11	fgdgdfdgf	dgfdgfdgf...	true	22	fsd	sdf	sdf	NSW
12	gdfscas	jnhbgfds	true	33	hgfd	gfds	hgfds	VIC
15	dsffds	fdsfds	true	22	dfsdfs	fsdsdf	sdfsdf	NSW
17	dfssdfdf	dsfsdf	true	33	sdffsd	sdfsdf	dfssfd	QLD

Back / Edit / Delete / Add device

When an item is deleted or updated, you must resize the window, or click the 'back' button, and reopen the window to see the changes.
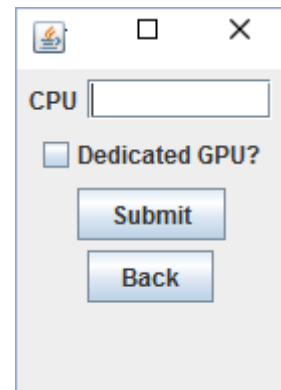
Adding a device to a member

When wanting to add a device to a member, the member must first be created. From there, you will need to click on the 'member report' button located in the main menu, then, select the member you wish to add a device for, then click the 'add device' button (see 'member report').

This window only requires you to enter the CPU. The CPU must be at least 2 characters. When the user has a dedicated GPU, you may click the 'dedicated GPU' checkbox, which will allow you to enter the members graphics card. Clicking submit will save the device to the user.

CPU core i7 @2.5ghz
☑ Dedicated GPU?
GPU GTX 780ti SC
Submit / Back

CPU
☐ Dedicated GPU?
Submit
Back
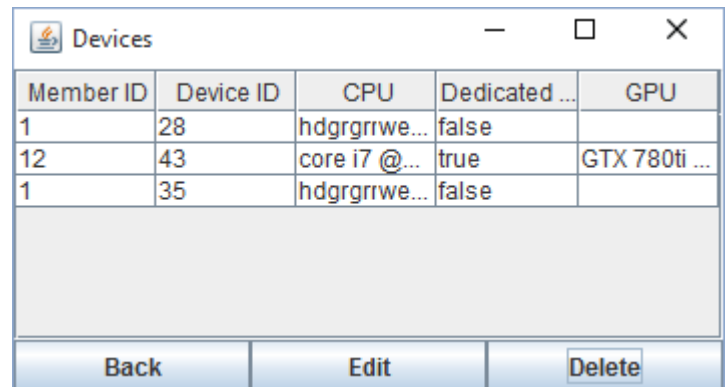
Viewing devices

When in the main menu, you may click the 'device report' button, to show a list of the devices, and which member they are assigned to.

Similarly, to how you are able to edit/delete members, editing and deleting a device works in the same manner; select a device, and click the edit/delete button. To see the table update you need to resize the window, to reopen the window.

Member ID	Device ID	CPU	Dedicated ...	GPU
1	28	hdgrgrrwe...	false	
12	43	core i7 @...	true	GTX 780ti ...
1	35	hdgrgrrwe...	false	

Back / Edit / Delete