Testing

Outline Plan

Test Series	Purpose of Test Series	Testing Strategy	Strategy Rationale
1	Test the flow and navigation between the different menus and interfaces included in the GUI.	Top-Down Testing	
2	Test the validation methods for the data input by the user	Bottom-Up Testing	Each component will be tested after development.
3	Test that all the input data is stored in the correct place	Black Box Testing	
4	Test algorithms to make sure the output is correct	White Box Testing	
5	Test that the system meets the specification.	Acceptance Testing	

Changes to the Test Plan
I have made some changes to the detailed plan since the design section to accommodate for the lack of boundary data in the original plan. The changes were made in test series 2.

Detailed Plan

Test Series and Number	Purpose	Description	Test Data	Test Data Type	Expected Result	Actual Result	Evidence in Appendix
1.1	Test that the password enter	The password dialog should	“ “ - Leave the password lineEdit	Erroneous	The password dialog will	As Expected	

	dialog responds correctly to the wrong password	reopen prompting the user to try again	blank and then click the enter button		reopen		
1.2	Test that the password responds correctly to the correct password	The password dialog should close opening the main interface	“password” - Enter the correct password and then click the enter button	Normal	The main interface will open after the password dialog closes	The password dialog closes and then the main interface opens	**Fig. 1**
1.3	Test that the open button works correctly	The windows file explorer should open to allow the user to select the right database file	Click the open button	Normal	The windows file explorer should open while the main interface remains open	The main interface remains open but shifts out of focus as the window file explorer dialog becomes the main focus	
1.4	Test that the open shortcut in the toolbar works correctly	The windows file explorer should open to allow the user to select the right database file	Click the open button	Normal	The windows file explorer should open while the main interface remains open	The main interface remains open but shifts out of focus as the window file explorer dialog becomes the main	

						focus	
1.5	Test that the table view in the main interface changes to accommodate the opened database	The table view should change to include data from the database selected with each table appearing in a different table	Open a database	Normal	The table view will now contain information stored in the database file	The table view now contains the information stored on the database	**Fig. 2**
1.6	Test that the Add button works correctly	The Add dialog box should open allowing the user to select and input the data they want to add to the database	Click the add button	Normal	The Add dialog box should open while the main interface remains open	The Add dialog opens and shift into focus over the main interface which remains open in the background	**Fig. 3**
1.7	Test that the Add shortcut in the toolbar works correctly	The Add dialog box should open allowing the user to select and input the data they	Click the add button	Normal	The Add dialog box should open while the main interface remains open	The Add dialog opens and shift into focus over the main interface which remains	

		want to add to the database				open in the background	
1.8	Test that the select table combo box works correctly in the Add dialog.	The section in the layout should fill with a form with input options based on the table selected	Change the select table combo box option to all available tables - “Member”, “Payment”, ”Regime”, ”Exercise”	Normal	The input form should change to contain information and input options based on the selected table	The input form changes widgets to display the appropriate input form selected - The member widget was displayed when the member option was selected and the same applies for payment, regime and exercise	
1.9	Test that the Add dialog responds correctly after the Add button has been pushed	The dialog box should close returning the users focus to the main interface	Enter all appropriate data and hit the Add button	Normal	The dialog box should close with the main interface still open	The dialog box closes and the main interface remains open	
1.10	Test that the Edit	The Edit dialog	Click the edit button	Normal	The Edit dialog	The edit dialog	

	button works correctly	box should open allowing the user to select and input the data they want to edit in the database			box should open while the main interface remains open	box opens and switches into focus while the main interface remains in the background	
1.11	Test that the Edit shortcut in the toolbar works correctly	The Edit dialog box should open allowing the user to select and input the data they want to edit in the database	Click the edit button	Normal	The Edit dialog box should open while the main interface remains open	The edit dialog box opens and switches into focus while the main interface remains in the background	
1.12	Test that the select table combo box works correctly in the Edit dialog.	The section in the layout should fill with a form with input options based on the table selected	Change the select table combo box option to all avaibale tables - “Member”, “Payment”, ”Regime”, ”Exercise”	Normal	The input form should change to contain information and input options based on the selected table	The input form changes widgets to display the appropriate input form selected - The member widget was displayed when the member	**Fig. 4**

						option was selected and the same applies for payment, regime and exercise	
1.13	Test that the Edit dialog responds correctly after the Edit button has been pushed	The dialog box should close returning the users focus to the main interface	Enter all appropriate data and hit the Edit button	Normal	The dialog box should close with the main interface still open	The dialog box closes and the main interface remains open	
1.14	Test that the Delete button works correctly	The Delete dialog box should open allowing the user to select the informati on they want to delete while the main interface remains open	Click the Delete button	Normal	The Delete dialog box should open while the main interface is still open	The delete dialog box opens and switches into focus while the main interface remains in the backgrou nd	
1.15	Test that the delete shortcut	The Delete dialog box	Click the Delete shortcut	Normal	The Delete dialog box	The delete dialog box	

	in the toolbar works correctly	should open allowing the user to select the informati on they want to delete while the main interface remains open			should open while the main interface is still open	opens and switches into focus while the main interface remains in the backgrou nd	
1.16	Test that the Select Table combobo x in the delete dialog works correctly	The Select Item combobo x should then include different options for the user to select	Select all possible options from the Select Table combo box	Normal	The Select Item combo box should fill with data based off of the selected table	The select item combo box fills with data retrieved from the selecting table in the database	**Fig. 5**
1.17	Test that the Delete dialog box responds correctly to the Delete or Delete All button being clicked	The dialog box should close bringing the Main Interface into the users focus	Click the Delete and Delete All Buttons	Normal	The Delete Dialog should close leaving just the Main Interface Open	The delete dialog box closes while the main interface stays open and switches back into focus	
1.18	Test that the Search Button	The search Dialog should	Click on the Search button	Normal	The Search dialog should	The search dialog box	

	works correctly	open allowing the user to enter the informati on they wish to search for			open while the Main Interface stays open in the backgro und	opens and switches into focus while the main interface remains in the backgrou nd	
1.19	Test that the Search shortcut in the toolbar works correctly	The search Dialog should open allowing the user to enter the informati on they wish to search for	Click on the Search Shortcut	Normal	The Search dialog should open while the Main Interface stays open in the backgro und	The search dialog box opens and switches into focus while the main interface remains in the backgrou nd	
1.20	Test that the Search button in the Search dialog works correctly	This should display the results of the search for the user	Enter all appropriate information and click the Search button	Normal	A new Results Dialog should open closing the Search dialog but keep the Main Interface open in the backgro und	The search dialog closes and the result dialog opens in its place while the Main Interface window remains open in the backgrou	

						nd	
1.21	Test that the Close button in the result dialog functions correctly	The Results dialog should close drawing the user's focus to the Main Interface again	Click on the Close Button	Normal	The Results dialog should close while the Main Interface window is bought back to the user's attention	The result dialog closes and the Main Interface window opens and is brought back to the user's focus	
1.22	Test the Print Button works correctly	The Print Dialog should open so that the user can select the form and informati on they want to print	Click on the Print Button	Normal	The Print Dialog should open leaving the Main Interface open in the Backgro und	The Print dialog box opens and switches into focus while the main interface remains in the backgrou nd	
1.23	Test the Print shortcut in the toolbar works correctly	The Print Dialog should open so that the user can select the form and informati on they want to print	Click on the Print Button	Normal	The Print Dialog should open leaving the Main Interface open in the Backgro und	The Print dialog box opens and switches into focus while the main interface remains in the	**Fig. 6**

						background	
1.24	Test that the comboboxes in the print function work correctly	The comboboxes should change the information in the subsequent combobox when an item is selected in one of them	Select all the different options in all 3 comboboxes	Normal	The Comboboxes should have different options based on what's entered in the other comboboxes	The comboboxes fill with different items based on the currently selected index in the other comboboxes	
1.25	Test that the Print button in the Print Dialog works correctly	The Print dialog should close bringing the Main Interface back into the user's focus	Click on the Print Button	Normal	The Print Dialog should close leaving only the Main Interface Open	The print dialog closes shifting the main interface window back into the user's function	
1.26	Test that the User Manual Option in the toolbar works	A digital version of the User Manual should open in another window so that the user can easily identify	Click on the User Manual Shortcut	Normal	The User Manual should open up in a dialog box leaving the Main Interface Open	The user manual dialog box opens while the main interface remains open in the background	

		how to perform an operation within the program					
1.27	Test that the About option in the toolbar works	The about section should open so that the user can identified the programs current version, creator and any other necessary information	Click on the About option	Normal	A Dialog box containing information about the program should be opened while the Main Interface remains open in the program	A Dialog box with information about the program opens while the main interface remains open in the background	
2.1	Verify that the password entered is correct	The password will match the one stored inside the program	The correct password The incorrect password	Normal Erroneous	The password will be correct and the program will carry on as so The program will not continue until the correct password is entered and the user will	The Password was correct and the program carried on The password dialog closed and reopened as the password entered was not correct	

					be prompted as such		
2.2	Verify that the file opened is a database (.db) file	Opening the wrong type of file should result in an error	A Database File A Word File	Normal Erroneous	The program will continue and load the database The program will prompt the user with an error	The program continued and loaded the selected database The program doesn't load the database but continues on	
2.3	Verify that the information entered in the Add input form is of the correct type	If the data is not the correct type the user should receive an error message	Appropriate Data Incorrect data type(s)	Normal Erroneous	The program will continue with the data The user will receive an error message and be prompted to change the necessary data	The program continues and the info is added to the database The user receives an error message and is able to change the data through the widget	**Fig. 7**
2.4	Verify that the	If the data is	Appropriate Data	Normal	The program	The program	

	information entered in the Edit input form is of the correct type	not the correct type the user should receive an error message	Incorrect data type(s)	Erroneous	will continue with the data The user will receive an error message and be prompted to change the necessary data	continues and the info is edited in the database The user receives an error message and is able to change the data through the widget	
2.5	Verify that the search term entered in the Search Dialog actually yields results	If the search comes up without results the user should receive a message saying so	A correct search term An incorrect search term	Normal Erroneous	The program continues on with the search results The user receives a message and is prompted to use a different search term	A dialog box containing the correct results is displayed and the program continues as normal The results window displays that there are no results and the user is prompted to try different search terms	**Fig. 8**

2.6	Verify that any Add inputs only accept a certain limit of characters	Certain items have a limit of characters like the Telephone Number should only allow up to 11 characters	01353667829 01111192231312321312312 3	Normal Boundary	The program accepts the input The program rejects the input and display an error message	The program accepts the input The program accepted the boundary data	**Fig. 11**
2.7	Verify that any Edit inputs only accept a certain limit of characters	Certain items have a limit of characters like the Telephone Number should only allow up to 11 characters	01353667829 01111192231312321312312 3	Normal Boundary	The program accepts the input The program rejects the input and display an error message	The program accepts the input The program accepted the boundary data	**Fig. 12**
2.8	Verify that the primary or composite keys exists during an edit function	An item can't be edited if its primary key(s) can not be identified	MemberID: 5 MemberID: 99780453	Normal Boundary	The program accepts the input The program rejects the input and displays an error	The program accepts the input The program rejects the input but doesn't display	**Fig. 13**

					messag e	an error message	
3.1	Verify that all Member details that are input are added to the database	All the details should be added to the correct place in the database	Member information MemberID: 15 Name: Toby Kerslake All Other Items: Leave Blank	Normal	The data should be added into the appropri ate place in the databas e	The correct memberI D and Name are added to the database with the rest of the fields remainin g blank	
3.2	Verify that all Payment details that are input are added to the database	All the details should be added to the correct place in the database	Payment information MemberID: 6 PaymentDa te: 17-03-2015	Normal	The data should be added into the appropri ate place in the databas e	The correct memberI D and Payment Date are added to the database with the rest of the fields remainin g blank	
3.3	Verify that all Exercise details that are input are added to the database	All the details should be added to the correct place in the database	Exercise information ExerciseID: 4 Name: Push Ups	Normal	The data should be added into the appropri ate place in the databas e	The correct Exerciser ID and Name are added to the database with the rest of the fields remainin g blank	**Fig. 9**

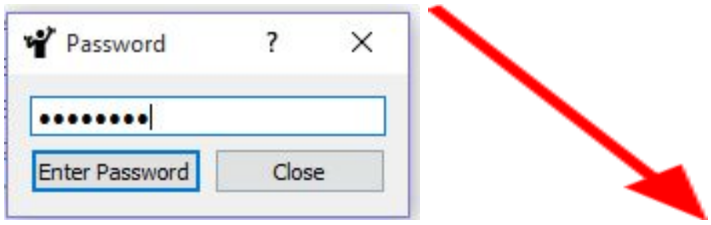
3.4	Verify that all Regime details that are input are added to the database	All the details should be added to the correct place in the database	Regime information MemberID: 3 ExerciseID: 22	Normal	The data should be added into the appropriate place in the database	The correct memberID and exerciseID are added to the database with the rest of the fields remaining blank	
3.5	Verify that all Member details that are input are updated in the database	All the correct details should be updated in the database	Member information MemberID: 6 Name: Toby Smith	Normal	The data should be edited into the appropriate place in the database	The member row with the memberid 6 has its name changed to Toby Smith	
3.6	Verify that all Payment details that are input are updated in the database	All the correct details should be updated in the database	Payment information MemberID: 5 paymentDate: 12-02-2015 Paid: 0	Normal	The data should be edited into the appropriate place in the database	The payment row with the memberid 5 and payment Date 12-02-2015 has its paid column changed to 0	
3.7	Verify that all Exercise details that are	All the correct details should be	Exercise information ExerciseID: 3	Normal	The data should be edited into the	The exercise row with the exercisei	

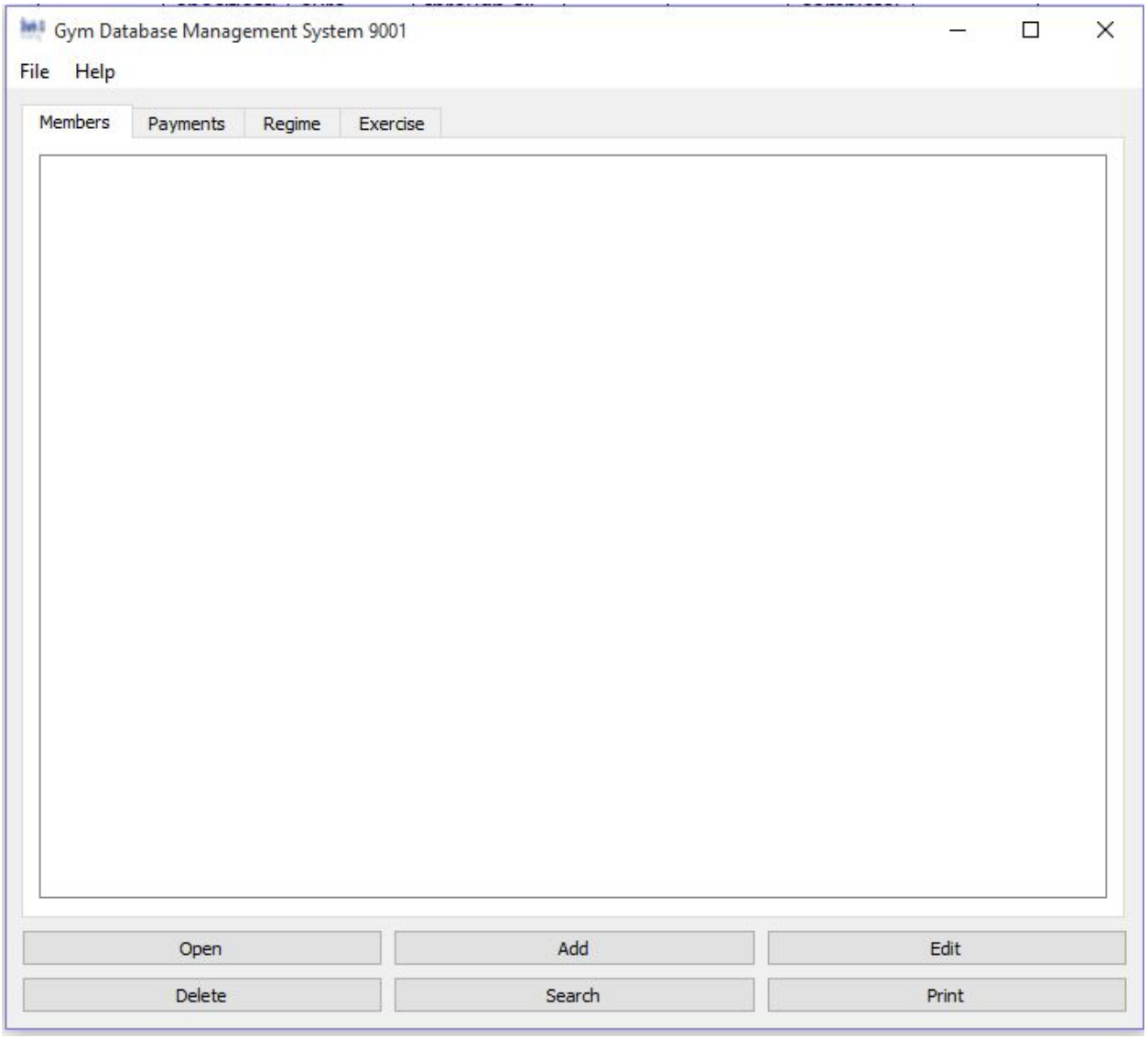
	input are updated in the database	updated in the database	Name: Pull Ups		appropriate place in the database	d 3 has its name changed to Pull Ups	
3.8	Verify that all Regime details that are input are updated in the database	All the correct details should be updated in the database	Regime information MemberID: 4 ExerciseID: 2 StartDate: 12-03-2016	Normal	The data should be edited into the appropriate place in the database	The regime row with the memberid 4 and exerciseId 2 has its startDate changed to 12-03-2016	
3.9	Verify that all Member details that are input are deleted in the database	All the correct details should be deleted from the database	Member information memberID: 5	Normal	The data should be deleted from the appropriate place in the database	The column with the memberID 5 is removed from the database	
3.10	Verify that all Payment details that are input are deleted in the database	All the correct details should be deleted from the database	Payment information memberID: 6 PaymentDate: 13-02-2016	Normal	The data should be deleted from the appropriate place in the database	The column with the memberID 6 and the Payment Date 13-02-2016 is removed from the database	

3.11	Verify that all Exercise details that are input are deleted in the database	All the correct details should be deleted from the database	Exercise information ExerciseID: 2	Normal	The data should be deleted from the appropriate place in the database	The column with the ExerciseID 2 is removed from the database	
3.12	Verify that all Regime details that are input are deleted in the database	All the correct details should be deleted from the database	Regime information MemberID: 7 ExerciseID: 4	Normal	The data should be deleted from the appropriate place in the database	The column with the memberID 7 and the ExerciseID 4 is removed from the database	
4.1	Verify that the Search function works correctly	The search function should allow the user to input a search term and then query that database and return the results	Search some information that is known to be in the database Table: Member Search Term: 1	Normal	The search function should return the correct information	The function returned all of the information from the members table with the memberID “1”	**Fig. 10**
4.2	Test that the Invoice function correctly	The invoice function should add	A member that the user already knows the	Normal	The function should print the correct	An Invoice containing the correct	

	calculates the total money a client needs to pay	together the sums of all the unpad months of a member	total money owed of memberID: 1		total (£120) along with other information	total (£120) along with all the other relevant information	
4.3	Test that the Print function fetches the correct data	The Print function fetches data from the database to print in the forms	Any table and form that the user knows the output of	Normal	The function should retrieve the correct data	The function retrieves the correct data	
5	Make sure that the program fulfills the specification laid out in the analysis and design	Run through the program making sure every function and aspect meets this specification	Add some information to the database and run through all the different methods of data manipulation and view the results	Normal	Program fulfills the specification	The program fulfills the specification completely	

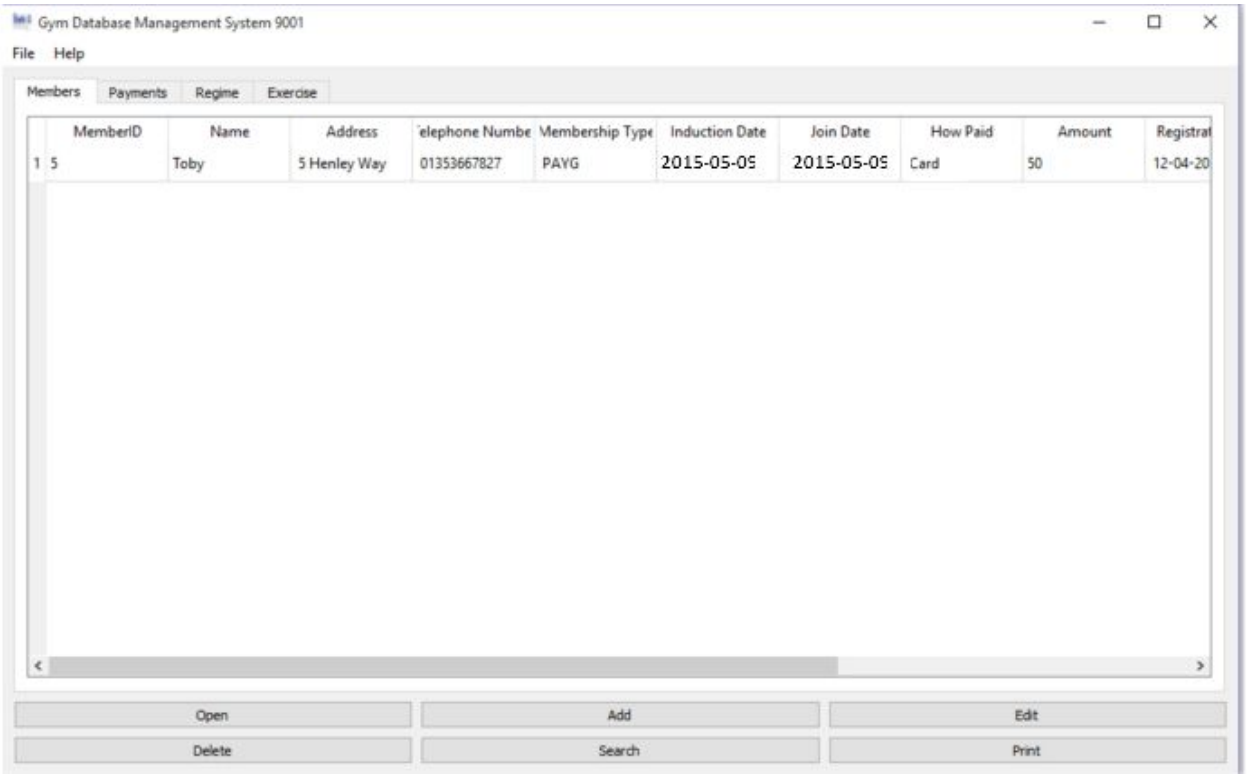
Fig 1.





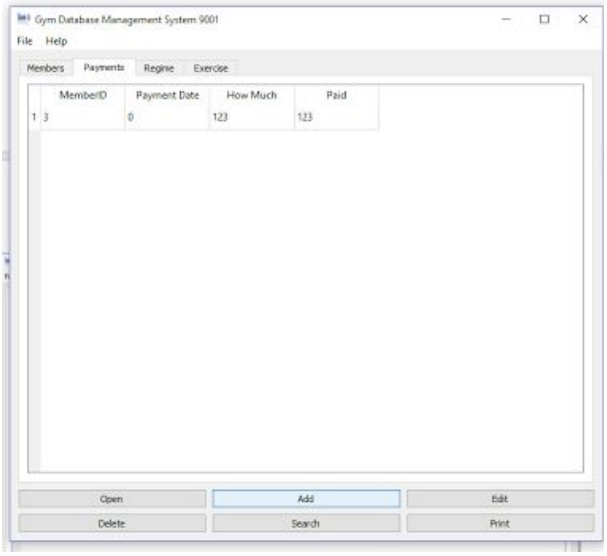
This diagram shows how upon entering the correct password into the dialog box it will open up into the main interface allowing the user to access the rest of the program.

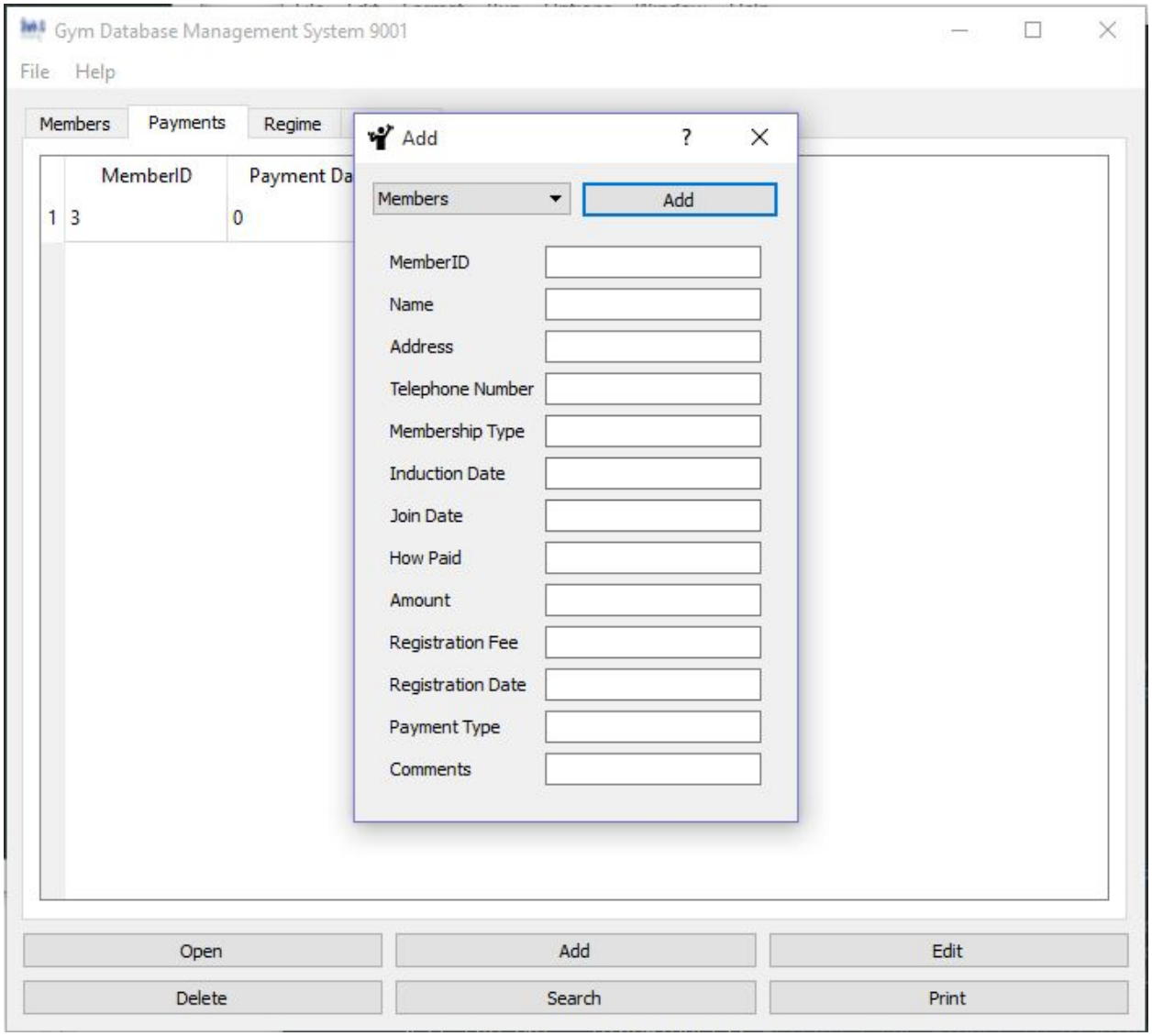
Fig 2.



This diagram demonstrates how after selecting a database from the open dialog window its loaded and presented in the main interfaces tableview

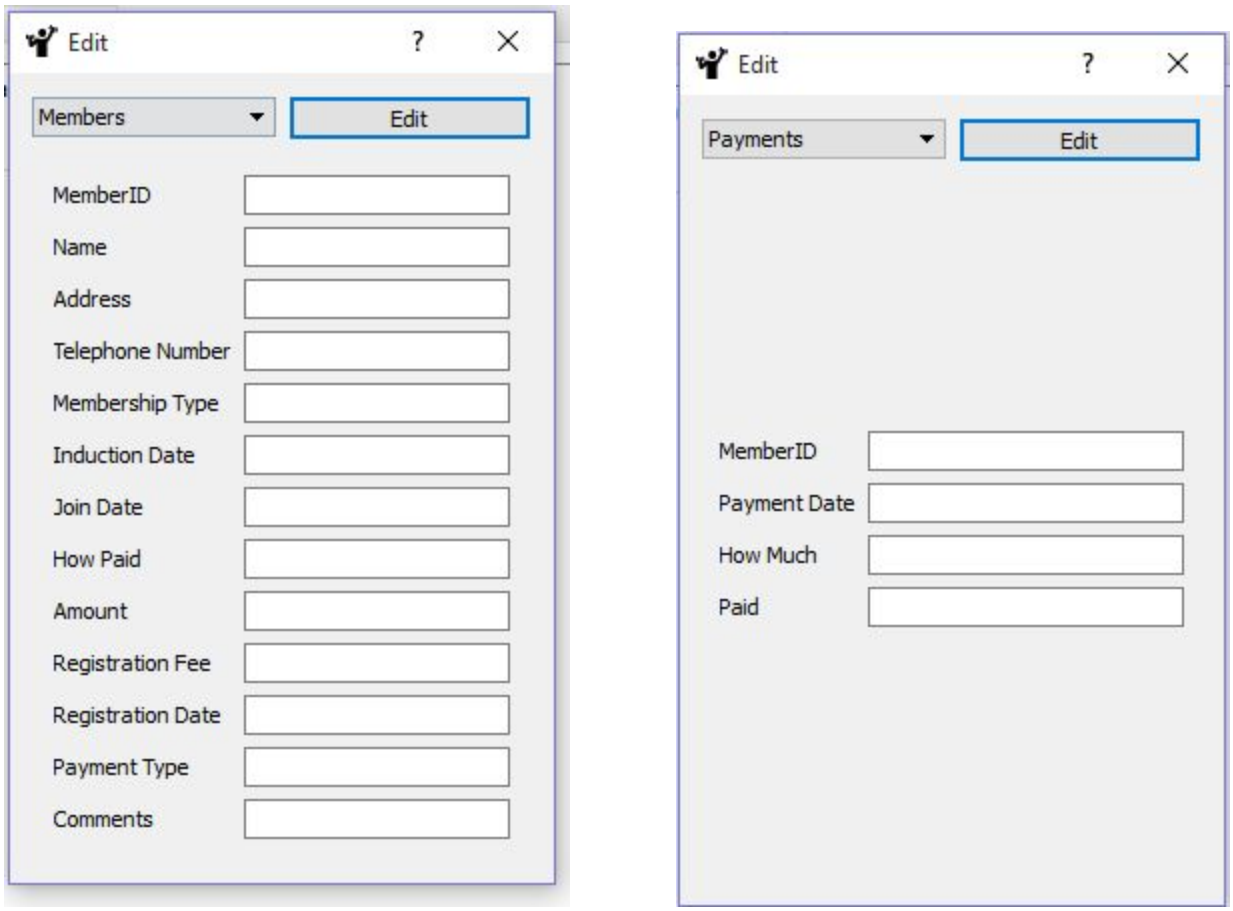
Fig. 3


Gym Database Management System 9001
File Help
Members Payments Regime Exercise
MemberID Payment Date How Much Paid
1 3 0 123 123
Open Add Edit
Delete Search Print


Gym Database Management System 9001
File Help
Members Payments Regime
MemberID Payment Da
1 3 0
Add
Members
Add
MemberID
Name
Address
Telephone Number
Membership Type
Induction Date
Join Date
How Paid
Amount
Registration Fee
Registration Date
Payment Type
Comments
Open Add Edit
Delete Search Print

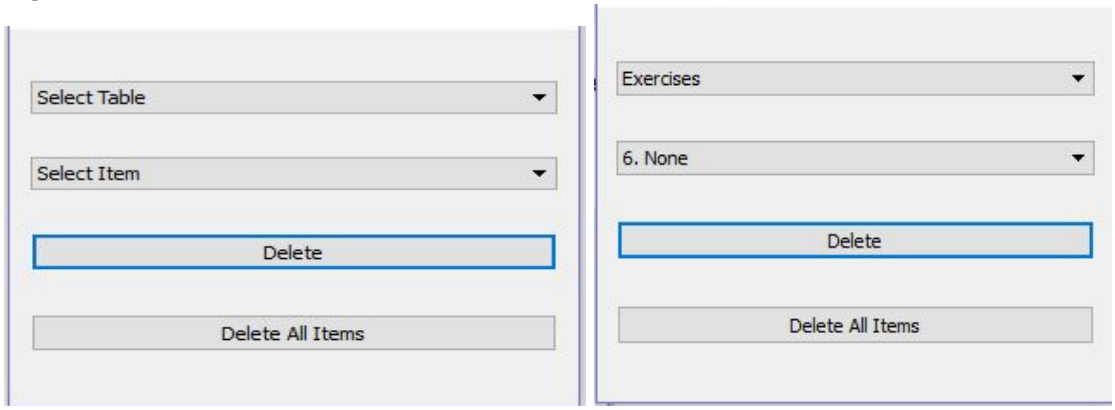
This diagram shows the Add dialog open while the main interface remains in the background after the “Add” push button has been clicked by the user.

Fig. 4



This diagram above demonstrates how when changing the selected index on the combobox the input form changes in the edit dialog box.

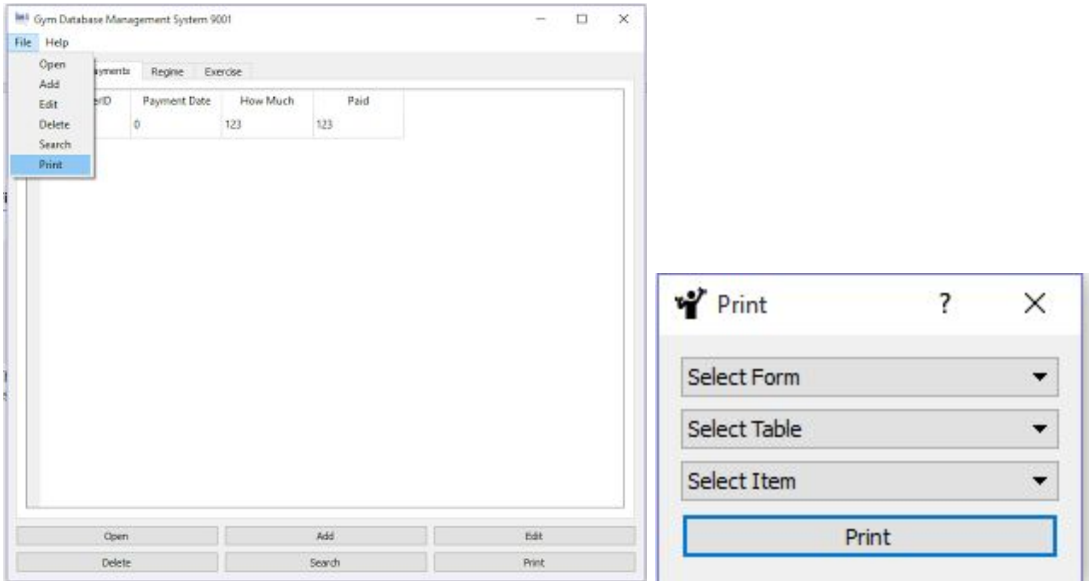
Fig. 5



This diagram show how after a table has been selected from the select table combo box the

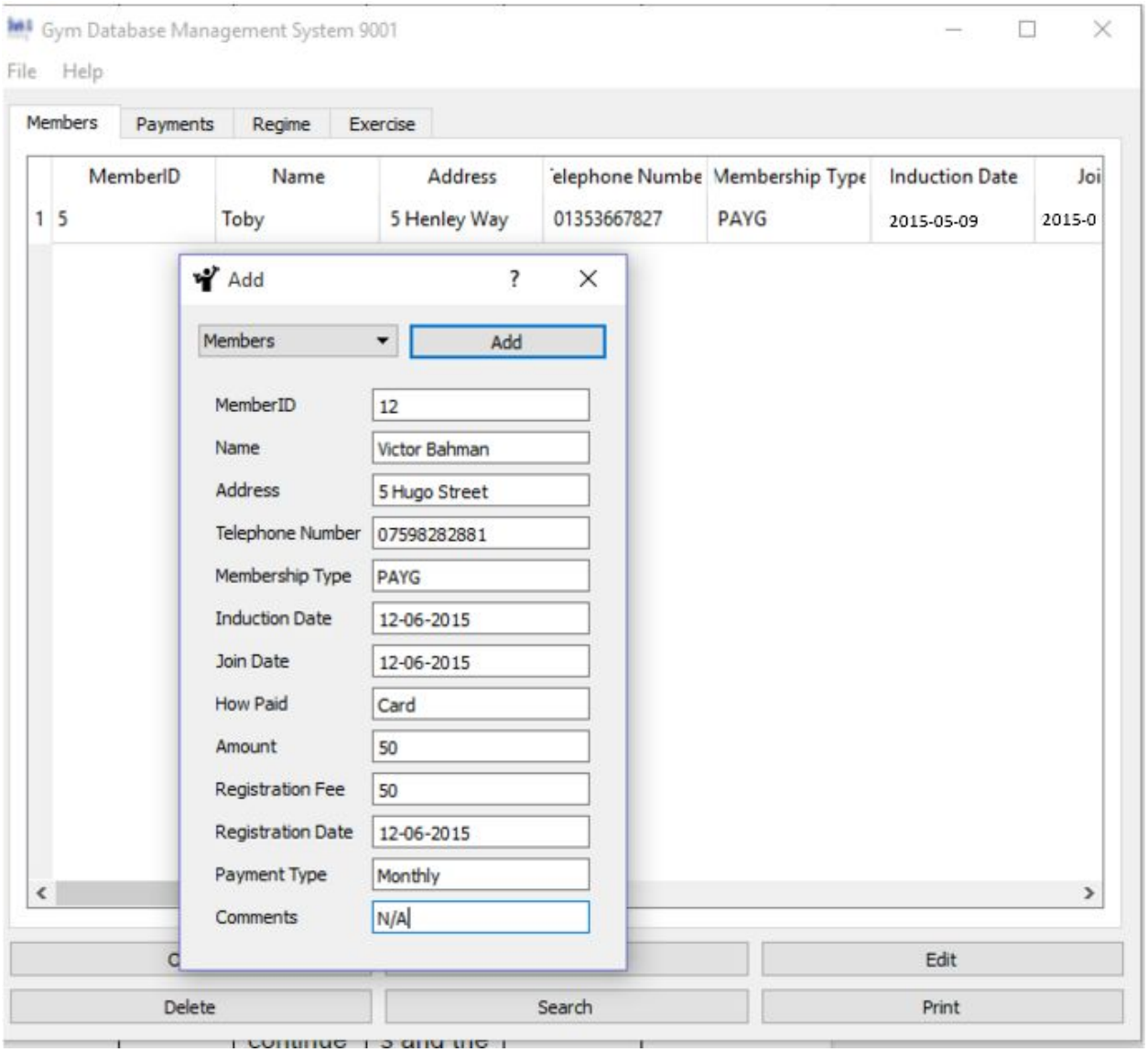
select item combo box populates its index’s with the different items from that table inn the currently loaded database.

Fig. 6



This image demonstrates how the print dialog open after the print shortcut is selected by the user in the file menu in the tool bar.

Fig. 7


Gym Database Management System 9001
File
Help
Members
Payments
Regime
Exercise
MemberID
Name
Address
elephone Numbe
Membership Type
Induction Date
Joi
1
5
Toby
5 Henley Way
01353667827
PAYG
2015-05-09
2015-0
Add
Members
Add
MemberID
12
Name
Victor Bahman
Address
5 Hugo Street
Telephone Number
07598282881
Membership Type
PAYG
Induction Date
12-06-2015
Join Date
12-06-2015
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Registration Date
12-06-2015
Payment Type
Monthly
Comments
N/A
Edit
Delete
Search
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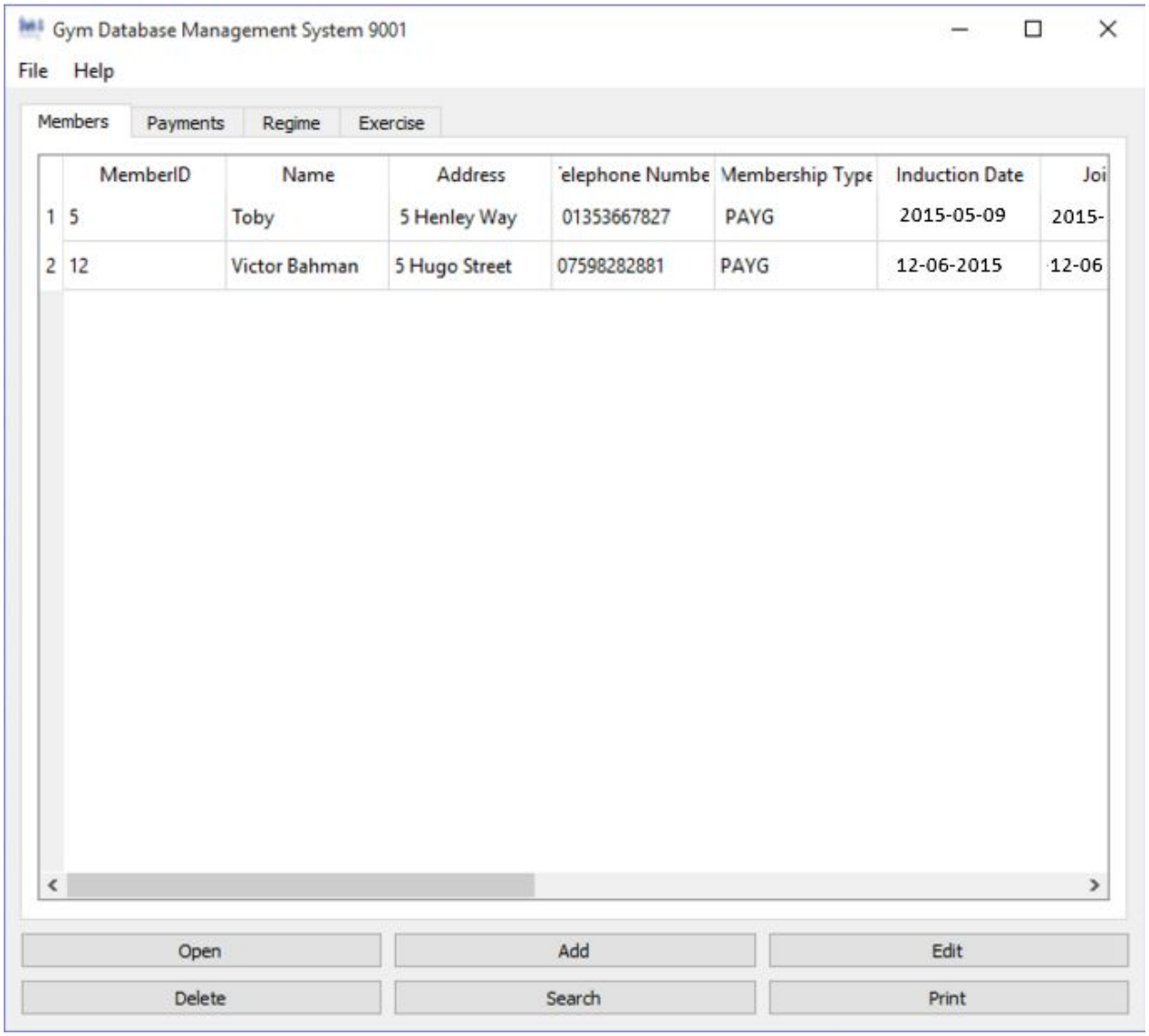
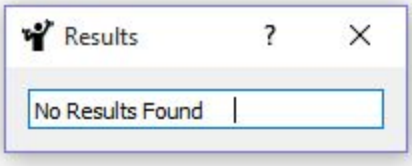


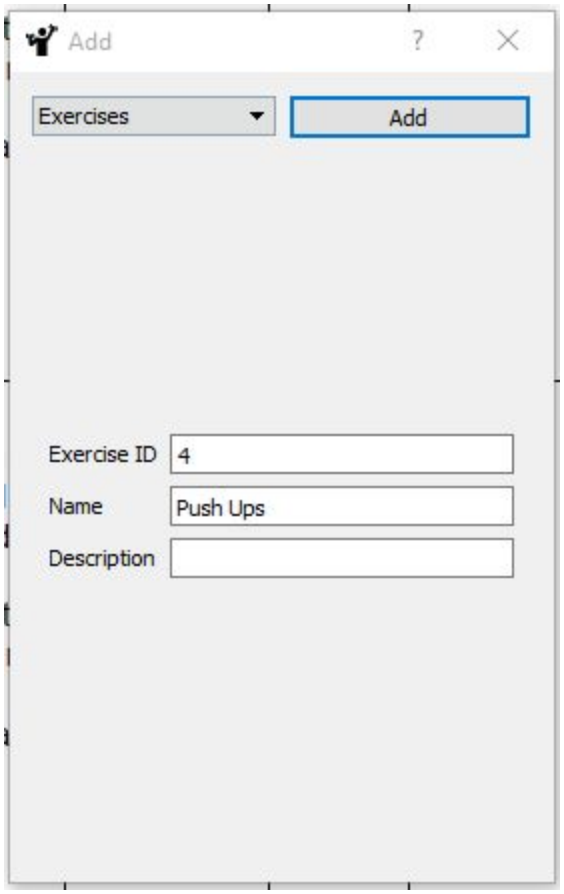
The figures above demonstrate how the information entered into the input form in the Add dialog is inserted into the currently loaded database and verifies how it's the correct data types as the program has proceeded to enter the data and not prompted the user to change their information.

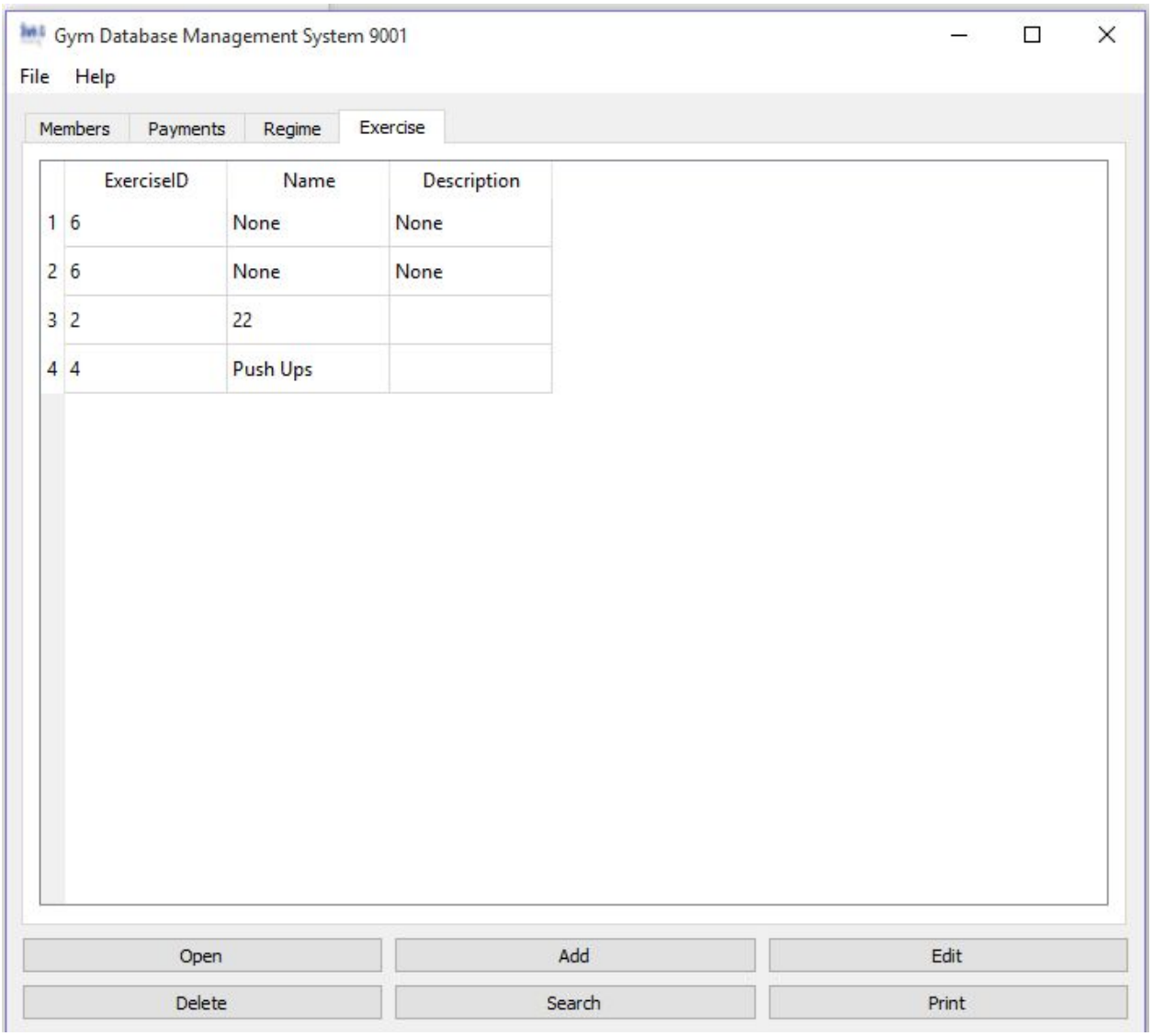
Fig. 8



This figure shows the results window when the entered search term doesn't yield any results.

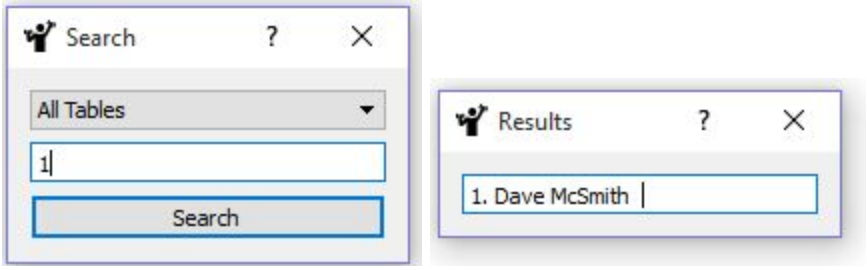
Fig. 9





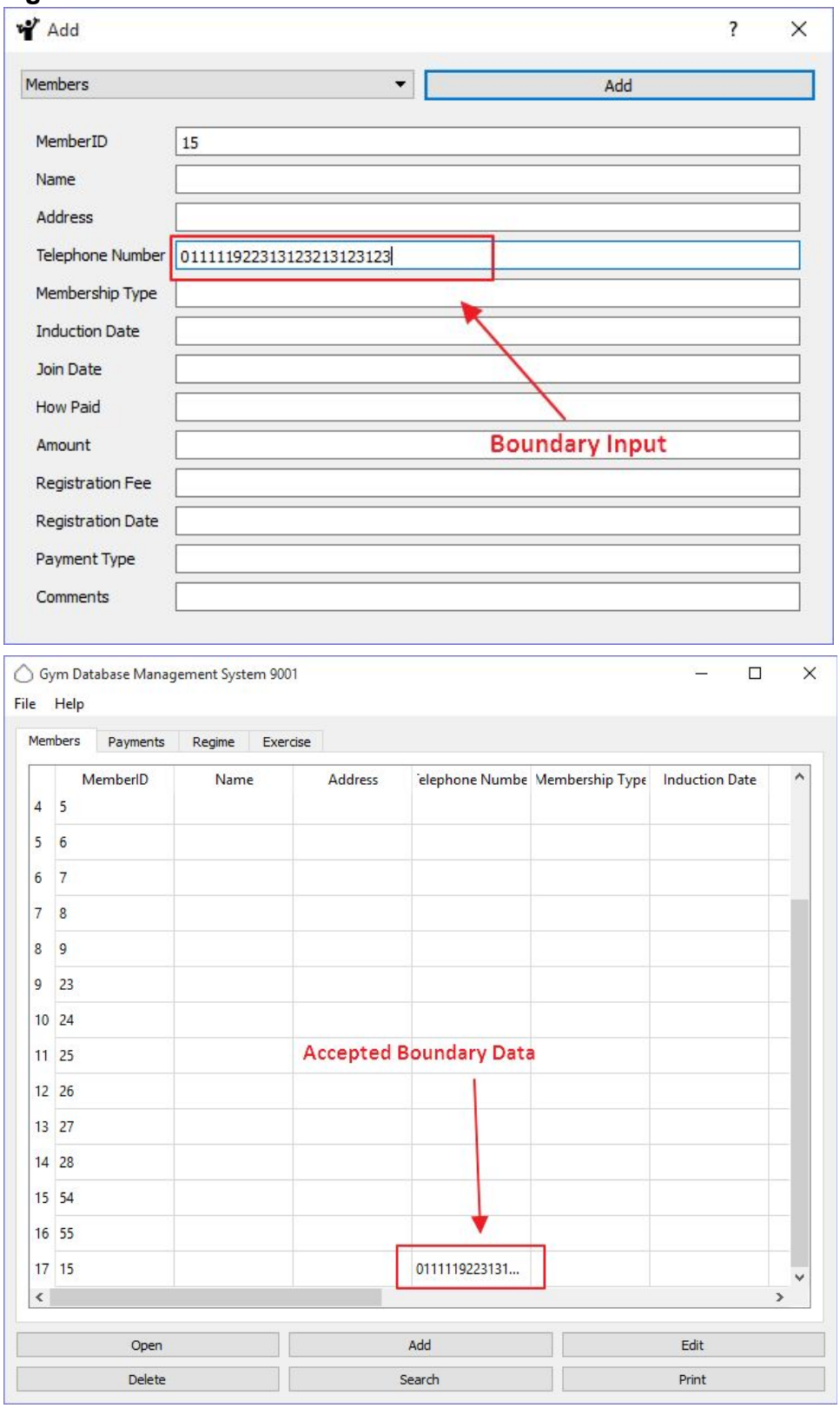
The above figures show how after entering the test data and clicking the Add push button the data was inserted into the Exercise table in the open database.

Fig. 10



The above figure shows how when the test data is entered and search through with the programs search function the correct member information is returned.

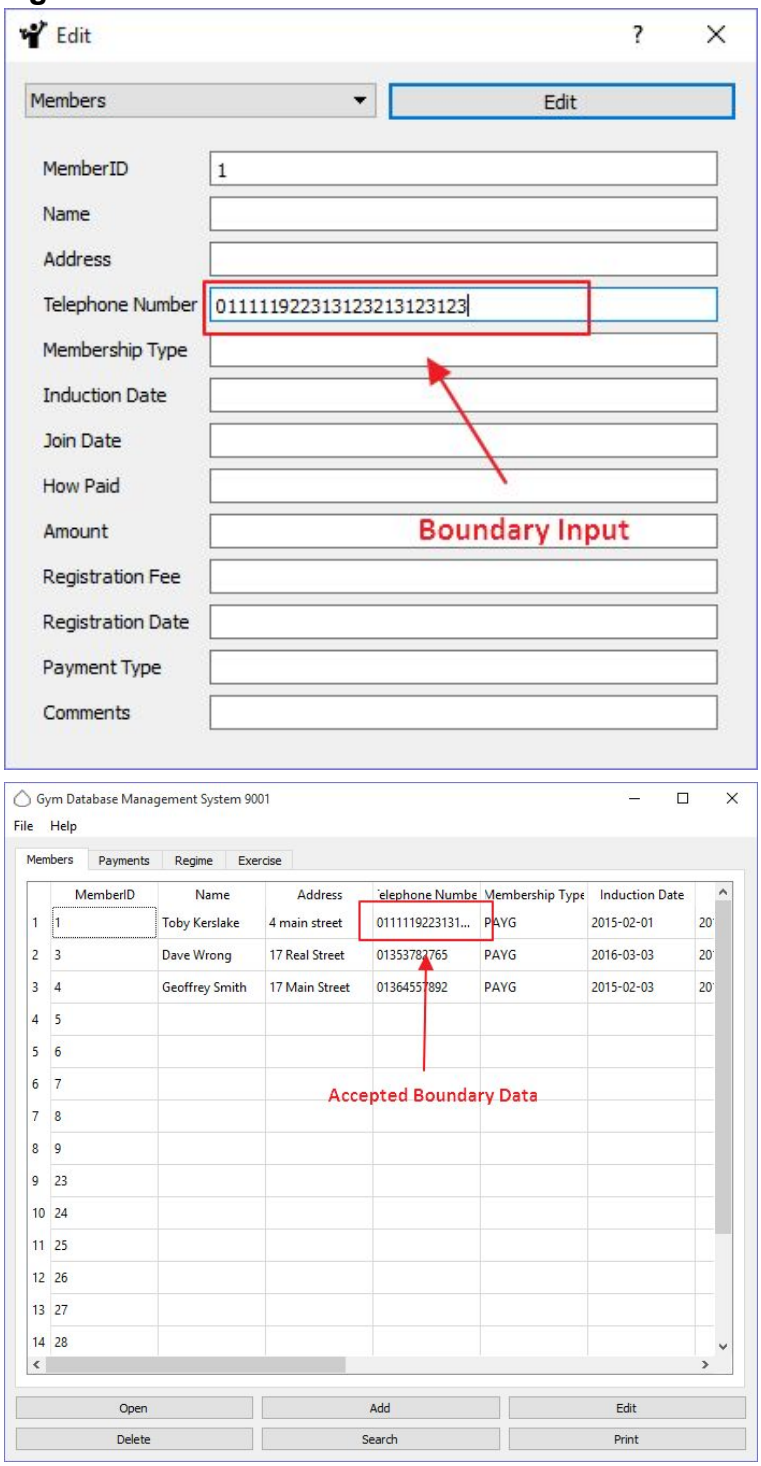
Fig. 11



The above figure demonstrates how after entering some boundary data into the add input form

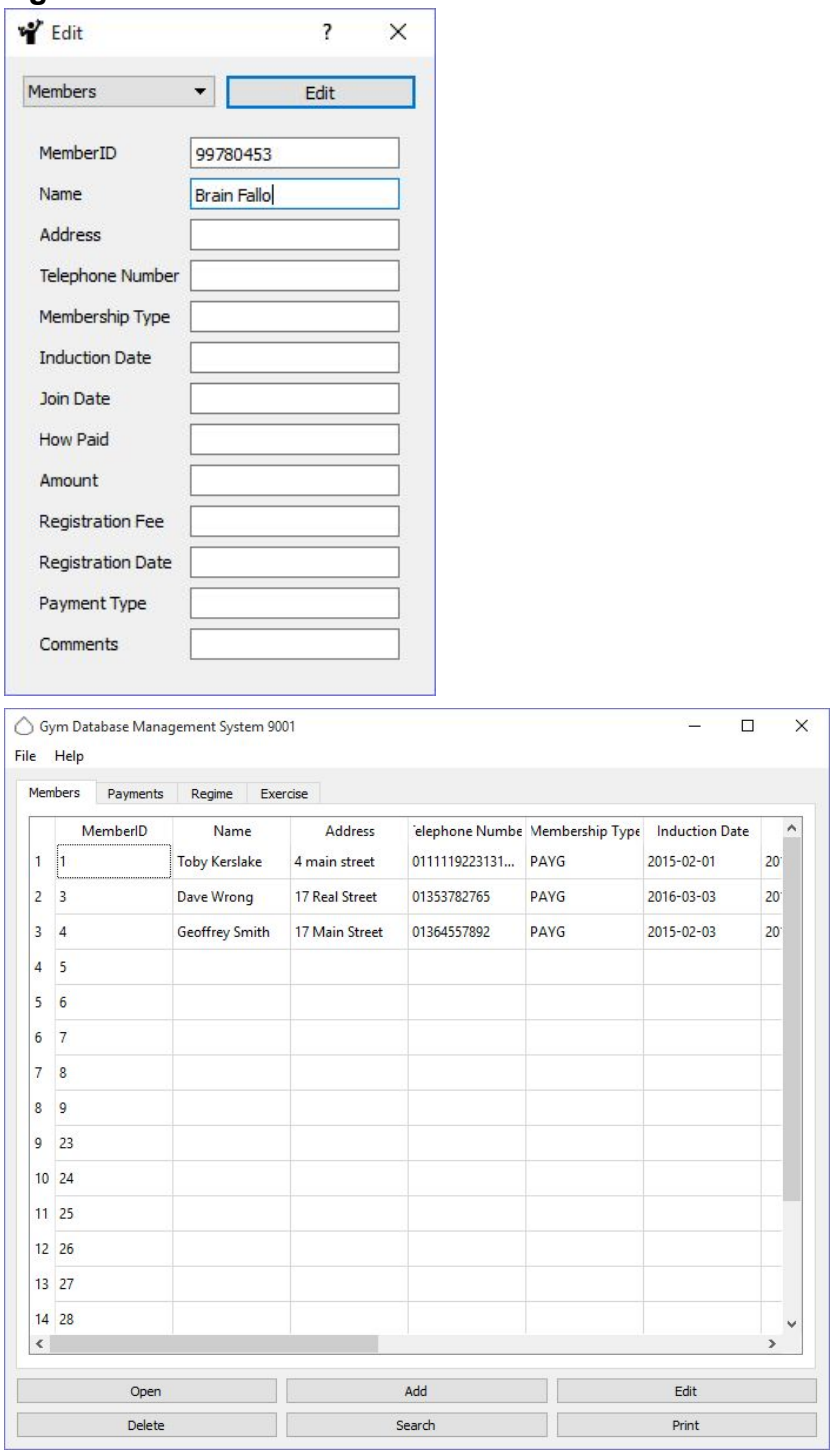
the program incorrectly accepts it as a valid input.

Fig. 12



The above figure demonstrates how after entering some boundary data into the edit input form the program incorrectly accepts it as a valid input.

Fig. 13



The above figure demonstrates how after entering data into an edit form with an invalid primary key the input gets rejected and not added to the table despite an error message not being displayed.