Háskólinn á Akureyri

Viðskipta - og raunvísindadeild

Final Year Project Dissertation 2007

Baldvin H. Ásgeirsson

Salmon Sign Up

Baldvin H. Ásgeirsson

Supervisor: Nik Whitehead

School of Computing,
Faculty of Business and Science, University of Akureyri.

Submitted April 2007, in partial fulfilment of the conditions of
the award of the degree BSc.

I hereby declare that this final report is all my own work, except as indicated
in the text:

Signature _____

Date 13/04/2007

Abstract

This dissertation is about a final year project by Baldvin Hermann Ásgeirsson, a student in the faculty of Business and Science at the University of Akureyri. The aim of this document is to give a report about the project in detail.

The name of the project is Salmon Sign Up System (from now on named Salmon Sign). It is designed with Icelandic rivers in mind. The Salmon Sign is designed to register caught fish in rivers and let the user view statistics regarding all registered fish.

The report starts of by giving a description of the project. How the current situation of registering caught fish is. What problems the current situation has and how these problems might be dealt with. Motivation for the work is discussed, the description of the work is discussed in detail where the interface is explained step by step. Related work is discussed, and the design is discussed in detail. The implementation is discussed what i.e. what problems were dealt with, why the design had to be changed and why many of the features of the project had to be changed.

1. Motivation for the Work

The Salmon Sign is a system for managing caught fish in rivers in Iceland. This system is designed for lessee of rivers in Iceland, this system could solve the book that has been used for decades in registering caught fish. This system could make the registering of caught fish easier and simpler. Each year the lessee of the rivers hold meetings where the fisherman come together and look at the past year in the river. At these meeting they are presented with statistics regarding the last summer in the river. As said before today all registering of caught fish is done in a simple book and has to be from there entered into a computer.

The Salmon Sign could do the work that the book has done for decades with more reliability, and could save a lot of work that has to be done from the registering book.

1.1 Introduction

The Salmon Sign contains step by step instructions on how to register a Salmon one at a time. The idea behind the Salmon Sign is to make a program with a friendly GUI and a database that can be used to sign into the system caught Salmon in rivers in Iceland. There are some software's that can do these kind of registration on Salmon e.g. Excel which most people have access to but for people to use Excel a basic knowledge or background is needed, for people to use Salmon Sign no knowledge or background information is needed, the GUI will only contain windows that will be used to register caught fish and buttons to validate these registrations.

There are many Salmon rivers in Iceland and most if not all of them are leased by a group of people. This is the year 2007 and in my own experiment most of these groups that lease the rivers are over 50 years of age, and many of these lease groups have little or no knowledge of computers or software that can be used to register the fish that is caught, this of course does not apply to all the lease groups, but many of them have to pay others to register their caught fish after each summer, these information about caught fish are used in meetings and the yearly meetings, most of the groups have to present how the summer was in that river to other people that spend their summer in that river. The Salmon Sign could be a good solution for

these meetings where a single push of a button would give required average or required graph showing statistics or graphs or what ever information would be needed.

1.2 Background

The purpose of this project is to show that a student can do a project of this size alone and do all the work needed to complete this kind of project, some of the aspects will be learned are as follows:

I. How to work alone on a project of this size.
II. How to take full responsibility for all the work.
III. How to set up a plan when working on a big project like this.
IV. How to deal with problems that might and will occur in this project.

If this project goes well there is always the possibility it might be used by many of the lease groups during these meeting they have.

Salmon fishing in Iceland has been done for decades. Through out the history of Salmon fishing a simple book has been used to register caught fish in each river. Each river in Iceland has one of these books where all information is kept, information such as.

- Name of the river
- Name of the fisherman
- Name of the place the fish was caught
- Number of the place the fish was caught
- The date
- The type of fish
- The gender of the fish
- The size of the fish
- The length of the fish
- The bait used
- Was the fish released back to the river

All these above information are done by a pen and the register book, where the user has to fill in detail everything regarding the caught fish. This takes a long time and it is easy to make error in filling out the book since there is much information on each page and going from one line to the next is a mistake that many people make. After the summer all these books are taken and sent to Veiðimálastofnun which stores these books and uses them to hold information about each year. It is a lot of work for Veiðimálastofnun to take all the information from the books and getting it into digital form.

Taking this information from the book and having them in a digital form is needed since Veiðimálastofnun has to present these numbers after each summer. From Veiðimálastofnun the lessee can get their information which they use in their annual meetings to give the fisherman statistics regarding last summer in the river.

1.3 Existing Systems

There doesn't seem to be a system out there that can do the same things as the Salmon Sign Up system is set out to do. No systems could be found for rivers and to hold information about caught fish and that could give statistics the way Salmon Sign is set out to do. There was no system found not even a hunting system, even though there has to be some kind of hunting system used today, but no one could be found to hold information about caught pray. As said before there are few software that could hold information about caught fish but they are thought of for all kinds of usage and require background knowledge of some kind.

1.4 Problems encountered so far

When designing a project like this there are many things which have to be taken into consideration, most of the problems encountered are what to include since there are in most cases many possibilities for each aspect of the project. The middle ground was chosen and some aspects are left out but all the important and the aspects that are needed are kept and many more. Both problems on the database and the GUI environment have been met. The problems regarding the database were connecting the tables together so they would work as desired. The tables, queries, reports and the forms all had problems on some stages, these problems were dealt with and some took much time but for other problems the solutions were simpler.

1.4.1 Software and Hardware

The software that has been chosen to use for developing the Salmon Sign Project is as follows:

1.4.2 Microsoft Office Access 2003

Microsoft Office Access 2003 was chosen for this project for its ability to create a GUI interface and database. It has all the features needed in constructing this project though some of the project might be prepared before it can be used with Microsoft Office Access 2003.

1.4.3 Adobe Photoshop

Adobe Photoshop will be used for all graphical use required, from editing pictures to editing the interface windows in the Salmon Sign.

1.4.4 Microsoft Office Visio 2003

Microsoft Office Visio 2003 will be used for similar purpose as Adobe Photoshop i.e. graphical use, creating some of the interface i.e. buttons and some of the drawings.

1.4.5 Operating System

Windows XP is the operating system of choice. The reason is that in this project most of the software used is for Windows XP and most of the operating system knowledge comes from Windows XP.

1.4.6 Software Conclusion

The software above Microsoft Office Access 2003, Adobe Photoshop, Microsoft Office Visio 2004 and Windows XP is all the software needed, no other software was needed.

1.4.7 Hardware

The Hardware that will be used are PC computers, all the PC computers are powerful enough to run the software above. The reason for selecting PC is obvious, all the computers around are PC computers and the operating system and all the software that will be used in developing the Salmon Sign project run on PC computers.

One other thing that might fall in the category of hardware is a Casio 7.2 Exilim digital camera, that will be used to take pictures if needed e.g. of river location, flies and any pictures needed. The hardware needed to run Microsoft Access 2003 is as follows.

- Operating System Microsoft Windows® 2000 with Service Pack 3 (SP3), Windows XP, or later.
- Processor Personal computer with an Intel Pentium 233-MHz or faster processor (Pentium III recommended).
- Memory128 MB of RAM or greater.
- Hard Disk 260 MB of available hard-disk space; optional installation files cache (recommended) requires an additional 250 MB of available hard-disk space.
- Drive CD-ROM or DVD drive.
- Display Super VGA (800 × 600) or higher-resolution monitor.
- Internet Connection Internet functionality requires dial-up or broadband Internet access (provided separately); local or long-distance charges may apply.

1.4.8 Hardware Conclusion

The PC computer and the Casio digital camera is the only hardware needed for the development of the Salmon Sign project.

2. Description of the Work

2.1 The Idea

To start the design, and start to think about all the things that are required both from the user view and from the designer view.

Today the Salmon Sign is simpler that it has been since this project started both the Forms and the Tables have been emerged and look and work simpler.

When the user opens the Salmon Sign up he is presented with a form which contains two buttons they are "Sign Up" a salmon or view "Statistics"

When the "Sign Up" button is pressed another form will open which is the main form of the registration process. This form has all the information needed to sign up a fish into the database.

This main form contains buttons, dropdown menus, radio buttons and text boxes which the user fills out when all the information have been filled out there is a button called "Sign Up" which completes the registration.

First option the user is presented with is the "Name of the fisherman" where the user enters his name. The next option that is presented to the user is to enter the "Name of the river" This option is will be used the way that the river will be set as default so the user doesn't have to enter the name of the river. This idea of having the default river is because the Salmon Sign will be located at a specific river and will be used for only one river. The Salmon Sign will of course be in many river locations but for each river the river name will be set as default.

The next option the user is presented is the "Date" where he enters the date the fish was caught. This option is as simple as it can be, the date can only be entered in one way that is the day, month and the year e.g. 24.04.2005 all other attempts to enter the date in other format will give the user error.

Next option the user is presented with is the "Number of the place" the fish was caught. For this option the same applies as for the "River Name" since the Salmon Sign will be located as

a specific river the "Name of the place" will be all pre entered in so the user will then select his name of place from that list.

Species is the next option that the user has to select, is the caught fish a Salmon or a Trout, this is simply done by the use of radio buttons where only one can be selected.

The gender of the fish is the next step in the registration form the options the user has are Snag which is male and Spawn which is the female fish. This is simply done by clicking on one of them by the mouse, and only one option can be selected, radio buttons are used for this selection.

Size in pounds is the next information the user has to fill out, a dropdown menu is used for this selection where the user can select numbers from 0.5 and up to 35+ where 0.5 is in between each number.

Length in centimetres is the next option the user has fill out, this is done by a text box where the user enter the size of the fish with the keyboard. It was considered to use a dropdown menu, since the users often don't know the length of the fish and could there fore misuse the dropdown menu to select some size from the dropdown menu that doesn't apply. A text box where the user has to enter the information in will give more accurate information.

What kind of bait was used is the next option in the registration process the option here are worm, fly or spinner this is done by the use of radio buttons and is done by a click of the mouse, only one bait can be selected.

Fish released is the next option the user has to perform this is only one radio button where the user selects it if the fish was released back to the river.

Weather conditions are the next option in the registration process the option here are sun, rain, fog and snow. Radio buttons are used for this selection and only one can be selected by the click of the mouse.

Air Temperature is the next option in the registration process, a dropdown menu is used for this option which has numbers from -15 and up to 23+.

River Temperature is the next option in the registration process, a dropdown menu is used for this option which has numbers from -15 and up to 23+.

Other information is the next option in the registration process this is the place where the user can basically write what ever information he wants to write. Examples of this would be First fish ever caught, the fish had seal bite, the fish had sea louse and etc.

Now the user has finished the registration of the fish into the database, now he is presented with two options one is "Sign Up" the fish into the database which will save all the entered

information, or the "Cancel" option which will cancel this registration and take him back to the starting form.

When the "Sign Up" button is pressed the user will be presented with another window which has the following option "Sign up another Salmon", "View Statistics" or "Quit Program". The above options basically do exactly what their name indicates.

When the main registration window is open where the user enters all the information about the caught fish, if he starts to write something into the e.g. first two options and presses the "Cancel" button that record will be stored into the database, if nothing has been entered into the information windows and the "Cancel" button is pressed that record will be cancelled and nothing will be stored into the database.

2.2 Type of Users

Three types of users will have access to the Salmon Sign first there is the administrator access, operator access and user access.

Administrator will have full access to everything i.e. every part of software and can therefore modify everything.

Operator has access to change some functions e.g. set a specific river as default set the place name as default since the software could likely be in a computer at a specific river. Fix error that the user has reported that he entered which could be written in e.g. "Weather conditions" the "other" window, and delete entered information if required.

User is the typical user can only se the GUI and the windows needed to register caught fish, and therefore can't modify anything.

- Administrator access
- Operator access
- User access

These three user groups are enough for all needed operations and maintenance.

2.3 The Interface

The interface is as simple as I could make it, it is not fully developed since there are some graphical changed that will be made and some functions of the interface that will be changed, these changes will be done for the demonstration which is in the 27th April.

The interface has in total four windows, there is the first window which is presented to the user which has the option of "Sign Up" a salmon or "View Statistics" or "Quit Program"

The "Sign Up" button will take the user to the registration form where all the information about the fish is filled out. The "View Statistics" is the button which will take the user to the statistics window where he can select what kind of statistics he wants to view.

The user has to fill in all the information into the main registration form, if some information are not entered and the "Sign Up" button is pressed the user will be presented with a message that has to enter desired information to be able to proceed.. The interface was shown to a friend of mine who has been fishing for 10 years, and to a man who is the head of a lease group called Laxmenn, both these persons did not think of any thing to add to the interface. But one of them talked about that the windows were too many and it would be better to take some of them and join them together. This idea was considered i.e. having fewer windows and after merging the windows together they are only four windows today instead of nine windows at the first design.

2.3.1 Menu Sections First Interface

Figure 1: First interface window

This is the first window that will appear in the interface, the red numbers stand for the following:

1. Name of the window.
2. User enters a new river.
3. Here the user can browse for river that have already been signed up.
4. The final button of the first registration window, which will open next window.
5. Offers the user to skip this section of the registration, which will open next window.

Figure 2: Second interface window

This is the second window that will appear in the interface, the red numbers stand for the following:

1. Name of the window.
2. Place where the user enters the date the fish was caught.
3. Sign up is used to complete this step of the registration and will start next window.
4. Skip is used to skip this part of the registration it will start next registration window.

Figure 3: Third interface window

This is the third window that appears in the interface, the red numbers stand for the following:

1. The name of the window.
2. Description what to do in window 3.
3. User selects the Salmon or Trout.
4. Sign up is used to complete this step of the registration and will start next window.
5. Skip is used to skip this part of the registration it will start next registration window.

Figure 4: Fourth interface window

This is the fourth window that appears in the interface, the red numbers stand for the following:

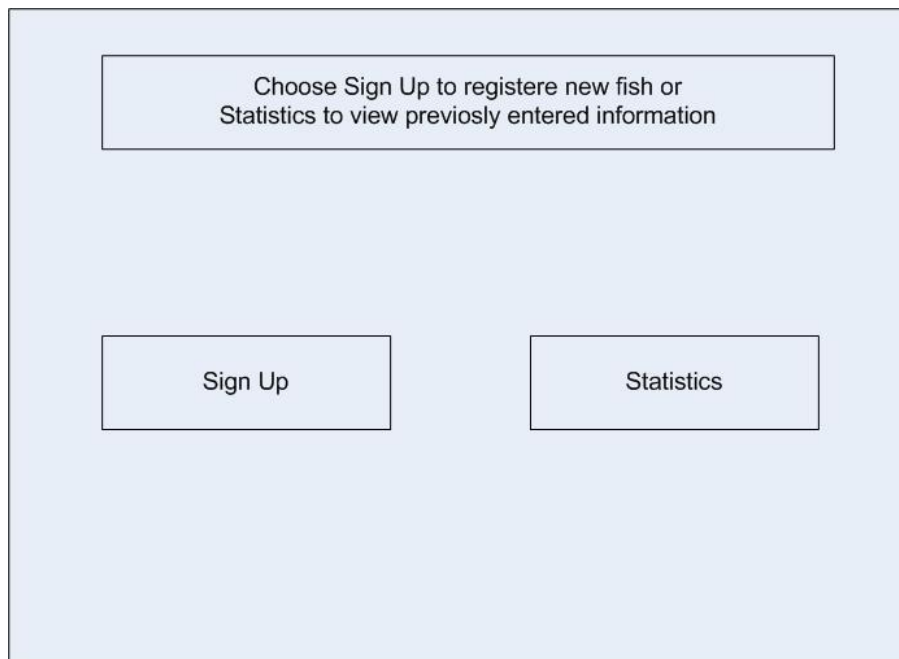1. Name of the window.
2. Description of what to select.
3. Snag or Spawn chosen i.e. male or female.
4. Sign up is used to complete this step of the registration and will start next window.
5. Skip is used to skip this part of the registration it will start next registration window.

Figure 5: Fifth interface window

This is the fifth window that appears in the interface, the red numbers stand for the following:

1. Name of the window.
2. User enters name of the place the fish was caught.
3. Number of the place fish was coughed is written here.
4. Sign up is used to complete this step of the registration and will start next window.
5. Skip is used to skip this part of the registration it will start next registration window.

Figure 6: Sixth interface window

This is the sixth window that appears in the interface, the red numbers stand for the following:

0.   Name of the window.

1.   Choose Bait describing what to do with window 2.

2.   Worm, Fly or spinner is chosen by clicking on it with the mouse.

3.   Fish released describing what to chose in window 4.

4.   Fish released or fish not released is chosen by clicking with the mouse.

5.   Sign up is used to complete this step of the registration and will start next window.

6.   Skip is used to skip this part of the registration it will start next registration window.

Figure 7: Seventh interface window

This is the seventh window that appears in the interface, the red numbers stand for the following:

1. Name of the window.

2. Description what to do in window 3.

3. Conditions user can choose as many as needed.

4. Sign up is used to complete this step of the registration and is the last registration window.

5. Skip is used to skip this part of the registration and is the last registration window.

2.3.2 Menu Sections Second Interface

Choose Sign Up to registere new fish or
Statistics to view previosly entered information

Sign Up

Statistics

Figure 8: Eight interface window

The above window is the first window that the user is presented with when the Salmon Sign is started. The user can select two ways i.e. select the "Sign Up" button which will start the register fish process or select the "Statistics" which will let the user select from different statistics which he can view.

The "Sign Up" button will open another following window letting the user start register his caught fish.

Figure 9: Ninth interface window

This window opens when the "Sign Up" button is pressed on the previous window.
Here the user has to enter the name of the river or use a dropdown menu for selecting the
river, the idea behind the dropdown menu is so that the same river will not be entered into the
database with different names or with typos.
The same applies to when the user enters his name if his name has been entered into the
database before he should use the dropdown menu to select his name.
After these information have been filled out the user can press the "Sign Up" button which
will give the following window or press the "Back" button to go to previous window to fix
errors he might have made.

Figure 10: Tenth interface window

This window hold information about the name of the place in the river the fish was caught the number of the place and the date. The name of the place is entered by the user, this option could be pre entered if the software is at a specific river so the user can then use a dropdown menu to select the name of the place. The number of the place is entered and can also be pre entered so the user selects from a dropdown menu if the software is located at a specific river. The date is just the date the fish was caught and is entered in the form 25.10.2007 i.e. 25 October 2005, the user can't enter a date in a wrong format since the Salmon Sign will present the user with an error.

After entering all the information needed the user can press the "Sign Up" button or the "Back" button, pressing the "Sign Up" button will present the user with the next window in registering the fish, or he can press the "Back" window If he wants to go back and fix errors.

Figure 11: Eleventh interface window

This is the next window in the register process here the user enters the kind, gender, size and the length of the fish.

For the kind radio buttons are used so the user can only select Salmon or Trout the same goes for gender of the fish radio buttons are used so the user can only click one of these button, as soon as the user has chosen snag or spawn the other option is no longer available. Size in pounds is chosen by a dropdown menu where the numbers are 0.5 and up to 35+ these numbers all have 0.5 between them. The number 35+ is the highest numbers since the largest fish ever caught in Iceland is less than 35 pounds. The length in centimetres is done by the keyboard i.e. the user enters the numbers him self. After talking to fishermen I decided not to use a dropdown menu for the length in cm since fisherman often don't know the length of the fish and could use the dropdown menu to choose any length.
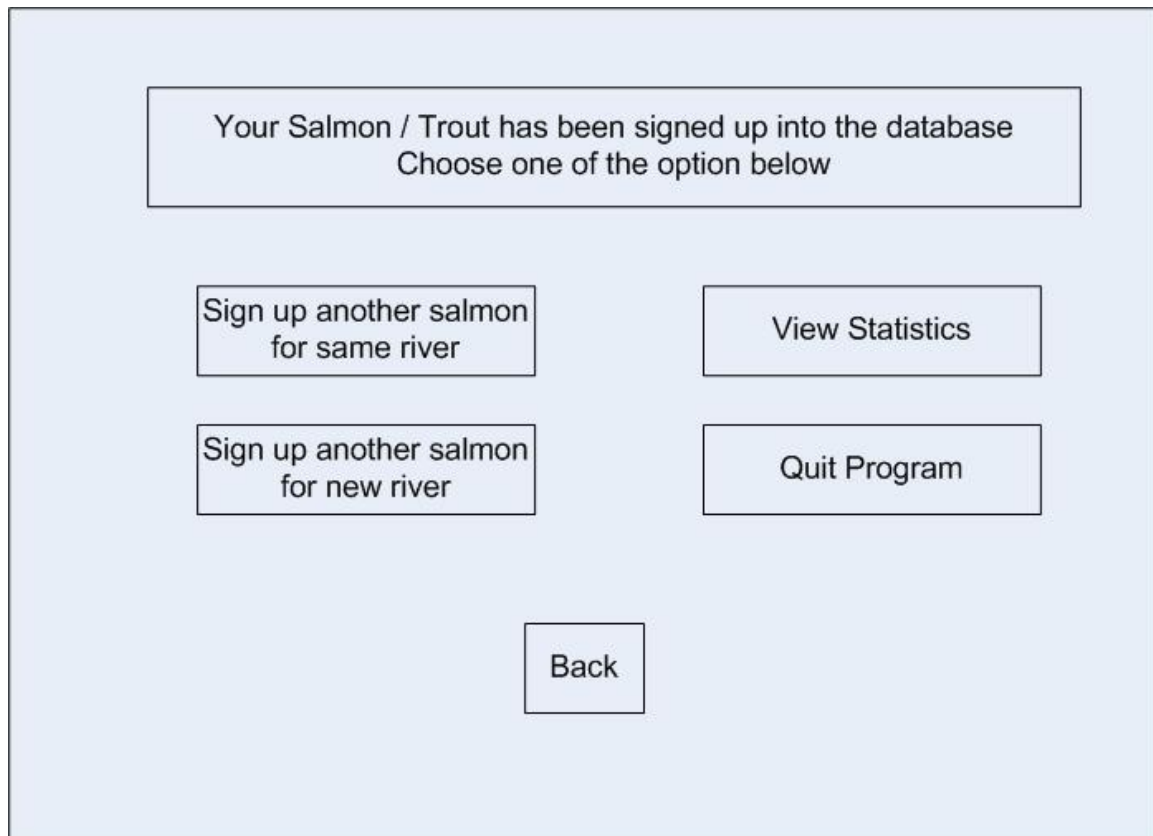
Figure 12: Twelve interface window

The above window is the window the user fills in the bait used and weather conditions that day. The bait used is chosen by clicking with the mouse on a radio button only one can be chosen i.e. worm, fly or spinner. A radio button is also used for fish released, which stands for was the fish released back to the river.

The weather conditions i.e. sun, rain, fog or snow is chosen by a radio button and only one can be chosen. The air temperature is chosen by a dropdown menu which contains the number from -25 and up to 30 the measurement is Celsius.

The river temperature is chosen by a dropdown menu which contains the numbers from -25 and up to 25 the measurement used is Celsius. The user can press the "Back" button do go to previous window and fix error or press the "Sign Up" button which will finish the registration of that fish the next window that appears is as follows.
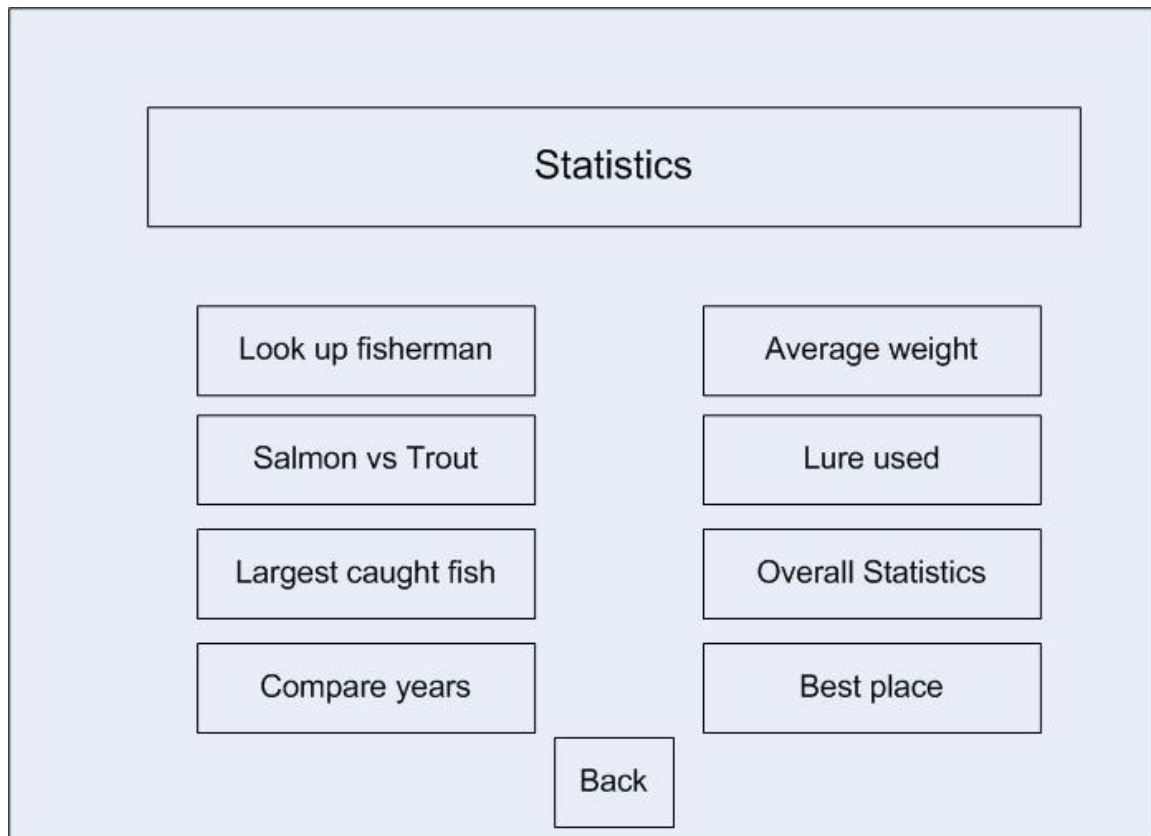
Figure 13: Thirteenth interface window

This window appears after the registration of the fish has been entered. Now the user has the option of signing up another salmon for the same river, which will let the user skip the first window in the registration process i.e. river name and fisherman name.

If the "Button sign up another salmon for new river" is pressed the user will be taken back to the first window where he has to enter the river name and fisherman name again.

"Quit Program" window will simply close the Salmon sign up software, Only Administrator and Operator access will have the option of pressing this button, the normal user cant close the program.

"View Statistics" button will give the user the option of viewing statistics as the following window shows. This is the same window that will appear if the user selects this option from the first window.

Figure 14: Fourteenth interface window

The statistics window gives the user the option of viewing statistics from the information previously entered into the Salmon Sign.

Look up fisherman will give the user the option of selecting a fisherman name by a dropdown menu, and getting all information about him that are stored in the database.

Salmon vs. Trout will present the user with information on how many salmon has been caught versus how many Trout have been caught.

Largest caught fish simply shows the largest caught fish that is stored in the database, the name of the fisherman will follow as for the river name, name of the place and what bait was used.

Compare years will present the user with information which the user can select from different rivers and compare all the years of the caught fish that is stored in the database. If there is only one river stored in the database then the user can compare years for the same river.

Average weight will compare the average weight of caught Salmons versus average weight of caught Trouts.

Lure used option will present the user with all the caught fish both salmon and trout and compare the lure used.

Overall statistics will give the user overall statistics about a certain river, this will contain

- Salmon vs. Trout
- Largest caught fish
- Average weight
- Lure used
- Best Place

The overall statistics will not present the user with detailed information of all the statistics but an overall statistic window which is thought of as for quick viewing.

Best place option will present the user with a list of names in the river, with the best place at the top of the list and the second best place below the fist place and so on.

The best place is the place where most fish has been caught.

2.3.3 Menu Sections Current Interface

As has been said before in this report the interface of the Salmon Sign got simpler by each design, today the interface looks like this.

Figure 15: Fifteenth interface window

This is the first window the user is presented with, is has only three options i.e. "Sign Up", "Statistics" and "Quit Program". The "Sign Up" button will take the user into the main registration form, the "Statistics" button will take the use into the main statistics window and the "Quit Program" will close the program.

When the user pressed the "Sign Up" button the main registration form opens and is as follows.
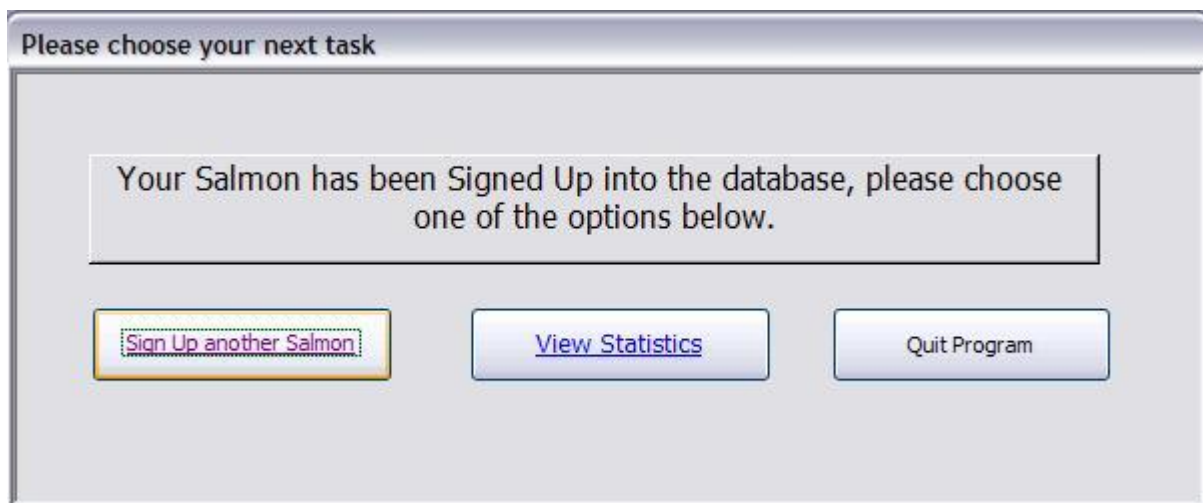

Figure 16: Sixteenth interface window

This is the main registration form here the user has to enter all requested information about the caught fish. To start the name of the fisherman is entered. Following that is the name of the river is entered, this option as said before in the report will be said as default river, depending on what river the Salmon Sign is used at each time. The date when the fish was caught is simply entered. The number of the place in the river is entered. Species i.e. Salmon or Trout is chosen by the use of radio buttons. The gender of the fish i.e. Snag or Spawn is chosen by the radio buttons. Size in pounds is chosen from the drop down menu, the length of the fish is entered in centimetres. What bait was used i.e. worm, fly or spinner is chosen by radio buttons and was the fish released back to the river is chosen by a radio button.

The weather conditions i.e. sun, rain, fog or snow is chosen by the ratio buttons. The air temperature is chosen by a dropdown menu as goes for the river temperature is chosen by a dropdown menu. The option "Other" stands for any information the user wants to write which he thinks are important for other fisherman to know.

Now the registration of the fish has been completed the user has two options i.e. "Sign Up" or "Cancel" the "Sign Up" button will finish the registration taking the user to another window

where he can select from signing up another salmon, viewing statistics or closing the program. When the "Sign Up" button is pressed the next window is as follows.

Figure 17: Seventeenth interface window

Here the user has three options "Sign up another salmon" which will take the user back to the main registration form where he can sign up another salmon.

The "View statistics" which will take the user to the statistics window or "Quit Program" which sill simply close the program. When the "View Statistics" button is pressed the user will be presented with the following window.
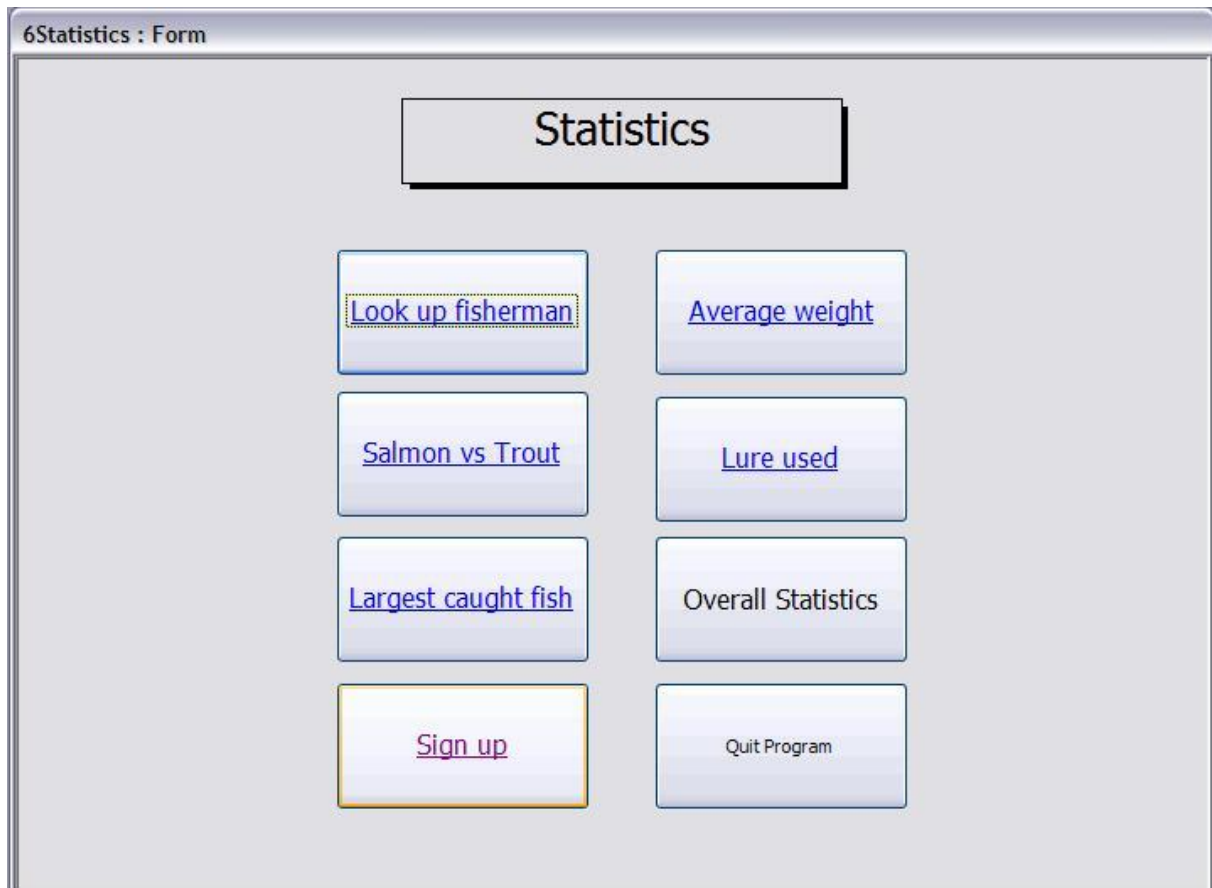
Figure 17: Seventeenth interface window.

This window has all the option the user can select what kind of statistics he wants to view. The "Look up fisherman" will give the user the choice of selecting the name of the fisherman and getting all information about that fisherman that are stored in the database.

The "Salmon vs. Trout" will present the user with statistics which will give the user numbers about the all caught Salmons versus all caught Trout's in the database.

The "Largest caught fish" will present the user with the largest fish in the database and all information about that fish that are stored in the database.

The "Sign Up" will take the user back to the main registration form where he can register another salmon.

The "Average weight" will present the user with information about the average weight of the salmon versus the average weight of the Trout.

The "Lure Used" will present the user with information about all caught fish and what lure was used, this is presented in Salmon versus Trout.

The "Overall Statistics" will present the user with overall statistics in a summary.

2.3.4 Demonstration Section Summary

The Salmon Sign starts of as one interface window where the user selects if he want to register a new fish into the database or view statistics about caught fish previously entered into the database.

When the option of registering new fish into the database is selected a main registration window will open, in that window the user enters all the information about the fish and then presses a button to finish that registration. After the registration is completed the user can select if he want to register another fish into the database or view statistics. The view statistics window will then give the user options of what statistics he wants to view.

2.3.5 Demonstration Section Detailed

The interface has been changed from the first design, it has been made as simple as possible, there is simply one window appearing at a time were information can be entered.

Figure 15 is the first window the user will see when he starts to use the Salmon Sign, this window only has three options i.e. "Sign Up" a fish, "View Statistics" or "Quit Program". To start this demonstration we will pretend the user pressed the "Sign Up" button, when the "Sign Up" button is pressed another window will appear which the main window in registering caught fish. Figure 16, or the main registration window it has all the information needed to complete the registration.

Name of the fisherman is the first option the user is presented with, here the user enters his name with the keyboard. The next option in the registration process is where the user enters the river name by the keyboard. Date is the next option that the user has to fill out, after the date there is the number of the place in the river which is entered using the keyboard. The name of the place the fish was caught done by the keyboard. Species or the kind of fish is the next option where the user has the option of selecting Salmon or Trout this is done by choosing one option by the mouse. Gender of the fish is the next option which has snag for male and spawn for female, this option is done by the mouse.

Size in pounds is selected by a dropdown menu where the user selects the size of the fish. Length of the fish is selected by a dropdown menu where the user selects the length of the fish in centimetres.

What bait was used to catch the fish is selected the option are

- Worm
- Fly
- Spinner

Here the user can only select one option which is done by the mouse. Was the fish released back to the river is the next option where the mouse is used to select. Weather conditions are selected by the mouse and are as follows.

- Sun
- Rain
- Fog
- Snow

This selection is made by the mouse and only one can be selected.

Air temperature is chosen by a dropdown menu where the user selects the temperature that day.

River temperature is chosen by a dropdown menu where the user selects the temperature of the river that day.

The last option on the main registration form is called other, in this option the user can write any information he wants this information could be e.g.

- First fish ever caught
- The fish had sea louse
- The fish had a seal bite

This last option "Other" is important since the user can write any information he thinks is important for other fishermen to know.

3.0 Related Work

An investigation about systems capable of solving this kind of work i.e. registering caught fish was conducted the results were that a system that meets all the requirements does not exist at this time. There is no system available at this time that can handle this kind of registration and give statistics like the Salmon Sign is capable of doing.
Software that can do this kind of statistics is available such software is e.g. Excel. For the user to use Excel some background knowledge is required. For this reason that there is no system out there that can be used and fills all the requirements to do what Salmon Sign does, that's why the Salmon Sign is something that is needed for registering caught fish in rivers.

4.0 Design

The design started of with a pen and a paper with drawing up the interface windows, the interface started of with nine windows. Each window was drawn and all the information needed to register caught fish was made e.g. buttons, text boxes, dropdown menus and radio buttons. The design was taken to a fisherman that has been fishing for many years and lessee of a river called Mýrarhvísl both the fisherman and the lessee found that the design looked good but if I could make it simpler then it would look even better. After considering their advice the interface windows were decreased down to six, with emerging them together. Again the design of the interface was taken to the fisherman and the lessee and they liked it better but still they thought the interface had too many windows. Again this problem was tackled and the interface windows today are four. The first interface window is where the user selects if he wants to sign up a new fish or view statistics. The second interface window is the window where the user registers the fish into the database. The third form is if the user wants to view statistics. The fourth form is where the use can select if he wants to sign up another salmon or go straight to viewing statistics or quit program. The quit program option is only available to the administrator access and the operator access.

The design of the tables started with nine tables i.e. one table for each form, soon it was discovered that there was no reason to have some tables active. Forms where the user was registering caught fish needed tables other forms didn't need any table. Today the tables are five one main table that hold most of the information needed and then there are three other tables that hold information about the bait, the gender and the weather.
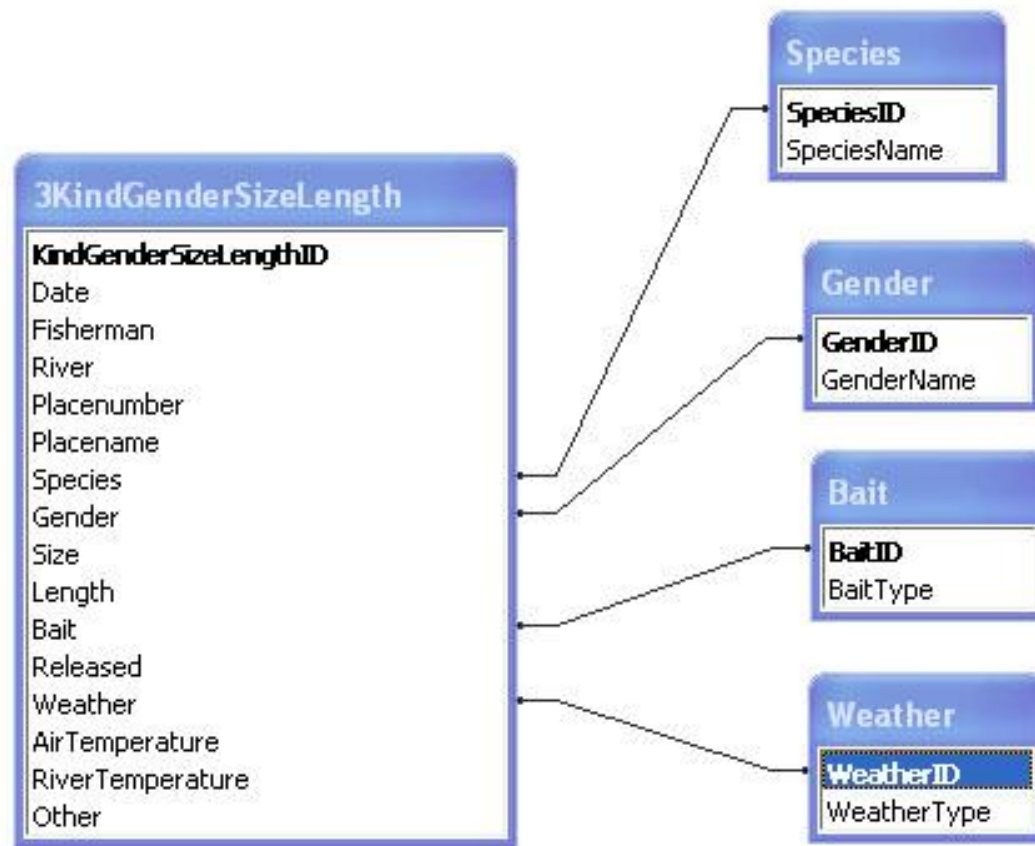
Figure 18. The tables.

The above picture shows the tables in the database as can be seen the
3KindGenderSizeLength table holds all the information about the caught fish. The species
table hold information about the name of the species which the 3KindGenderSizeLength table
gets the name of the specie from i.e. is it a Salmon or Trout. The Gender table hold the
information about the gender of the fish, this is where the 3KindGenderSizeLength table gets
the gender name from i.e. is it a snag or a spawn. The weather table hold information about
the weather conditions that day this is where the 3KindGenderSizeLength table gets the
information from i.e. sun, rain, fog or snow.

5.0 Implementation

This section addresses the Implementation of the Salmon Sign with description about how the design changed from day to day and became simpler and why these changes were made. Some of the changes were small and were done as the project evolved, other were bigger and were made the last days of the project. These changes were considered necessary since the current design was not working out. Since I had no knowledge of working with Access or little as no knowledge of working with databases the design changed from week to week and is today not what was started out with but much simpler and better designed.

5.*1 Forms*

The first forms were designed using a pen and a paper from there the forms were done using Microsoft Visio 2003. By each design of the forms they got simpler and fewer, in my opinion this is good for the user as for the administrator who has to handle the Salmon Sign.
The forms started of as nine forms, from there they went down to six, and today the forms are four. Each form is simpler than from previous design, and has more information on them
The idea of having the user entering the river name into the form is something that changed and is today set as default to the river that it will be handling registration for.
By doing this the form looks even simpler, where the user doesn't have to fill out information about the river.

5.*2 Tables*

The tables in the Salmon Sign have changed much since the first design, it started of as nine tables i.e. one table for each form, this way was very confusing to me because keeping track the record gave me a lot of problems.
The biggest problems with keeping track of the record was to be able to have the id follow the form and going from one table to the next. After spending much time on the table part of the design I decreased the tables by four. These tables still had problem with the record Id and

having the id follow the form to the next table still didn't work, after much time spend and many forums, the decision of having even fewer tables was made.

Today the tables are only four, there is a main table that holds all the information and that table uses three other tables that hold information about species, gender and weather.

This way seems to work but it still has minor problems that will be fixed before the demonstration of the project.

5.*3 Queries*

The query part of the Salmon Sign is the part that has to be worked on the most before the demonstration. The queries work but the output is not with all the graphics that it will have. The queries give the right output, but the output is raw and needs to be worked on.

5.*4 Type of User*

The type of user is not fully working, there will be three types of users which are

- Administrator access
- Operator access
- User access

These three types of users all have different type of access to the Salmon Sign, the administrator will have full access to every aspect of the program.

The operator will have access to e.g. set a default river to the program, set the name of the place in the river and deleting records that are in the database but are not right registered.

The user access will only have access to the program and cant for that reason change or modify anything.

6.**0 Testing**

As being stated, the system has not been tested on real users yet, that will be done when it has been fully implemented and feedback then retrieved. The plan is to have the Salmon Sign up tested at a river location with real users in real circumstances. As said before the lessee Fossar had already approved of testing the Salmon Sign at a river called Mýrarhvísl, but that lessee group lost the right to that river. Hopefully Stefán Sigðursson at the company Laxá will approve of testing it at one of the river they lease.

Black box testing was made as the program developed to make sure all the functions in the program worked the way they should work. They were made along with the design and implementation of the project.

User testing was made with 2 users where they had to use the program and enter caught fish into the database this was done to see how the tables would handle the registration. This testing went well and gave positive feedback that the program was working and the user liked the interface. The statistics part of the program gave raw output but an output that will be fixed before the demonstration.

7.0 References

Access 2003, (2003), All-In-One Desk reference, Alan Simpson, Margaret Levine Young, Alison Barrow, Indianapolis Indiana.

Appendix A – Diagram

Menu Sections First Interface Design

Figure 1: First interface window

This is the first window that will appear in the interface, the red numbers stand for the following:

6. Name of the window.
7. User enters a new river.
8. Here the user can browse for river that have already been signed up.
9. The final button of the first registration window, which will open next window.
10. Offers the user to skip this section of the registration, which will open next window.

Figure 2: Second interface window

This is the second window that will appear in the interface, the red numbers stand for the following:

5. Name of the window.
6. Place where the user enters the date the fish was caught.
7. Sign up is used to complete this step of the registration and will start next window.
8. Skip is used to skip this part of the registration it will start next registration window.

Figure 3: Third interface window

This is the third window that appears in the interface, the red numbers stand for the following:

6. The name of the window.
7. Description what to do in window 3.
8. User selects the Salmon or Trout.
9. Sign up is used to complete this step of the registration and will start next window.
10. Skip is used to skip this part of the registration it will start next registration window.

Figure 4: Fourth interface window

This is the fourth window that appears in the interface, the red numbers stand for the following:

6. Name of the window.
7. Description of what to select.
8. Snag or Spawn chosen i.e. male or female.
9. Sign up is used to complete this step of the registration and will start next window.
10. Skip is used to skip this part of the registration it will start next registration window.

Figure 5: Fifth interface window

This is the fifth window that appears in the interface, the red numbers stand for the following:

6. Name of the window.
7. User enters name of the place the fish was caught.
8. Number of the place fish was coughed is written here.
9. Sign up is used to complete this step of the registration and will start next window.
10. Skip is used to skip this part of the registration it will start next registration window.

Figure 6: Sixth interface window

This is the sixth window that appears in the interface, the red numbers stand for the following:
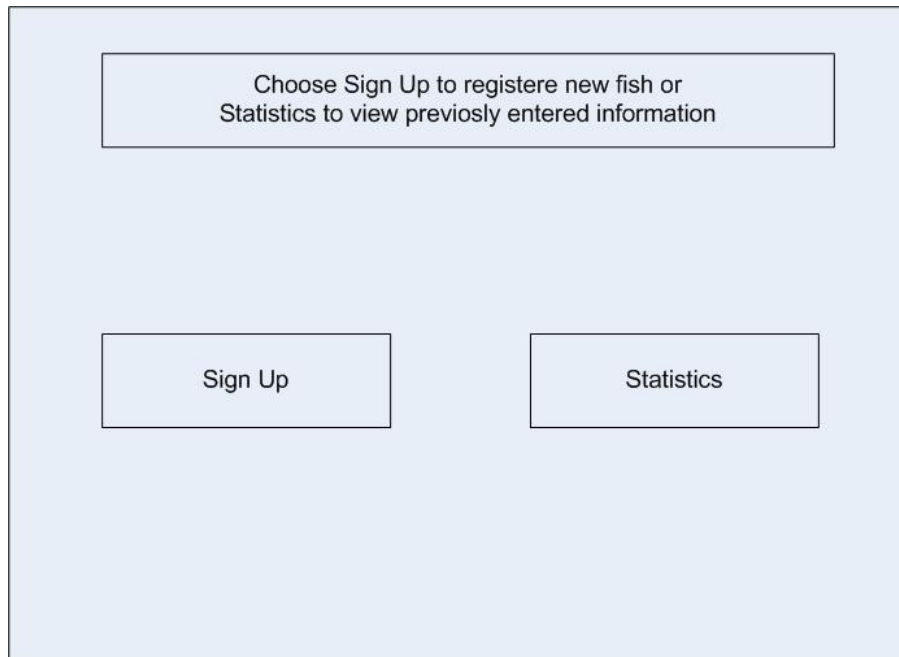
7. Name of the window.

8. Choose Bait describing what to do with window 2.

9. Worm, Fly or spinner is chosen by clicking on it with the mouse.

10. Fish released describing what to chose in window 4.

11. Fish released or fish not released is chosen by clicking with the mouse.

12. Sign up is used to complete this step of the registration and will start next window.

13. Skip is used to skip this part of the registration it will start next registration window.

Figure 7: Seventh interface window

This is the seventh window that appears in the interface, the red numbers stand for the following:

6. Name of the window.

7. Description what to do in window 3.

8. Conditions user can choose as many as needed.

9. Sign up is used to complete this step of the registration and is the last registration window.

10. Skip is used to skip this part of the registration and is the last registration window.

Menu Sections Second Interface Design

Choose Sign Up to registere new fish or
Statistics to view previosly entered information

Sign Up   Statistics

Figure 8: Eight interface window

The above window is the first window that the user is presented with when the Salmon Sign is started. The user can select two ways i.e. select the "Sign Up" button which will start the register fish process or select the "Statistics" which will let the user select from different statistics which he can view.

The "Sign Up" button will open another following window letting the user start register his caught fish.

Figure 9: Ninth interface window

This window opens when the "Sign Up" button is pressed on the previous window.

Here the user has to enter the name of the river or use a dropdown menu for selecting the river, the idea behind the dropdown menu is so that the same river will not be entered into the database with different names or with typos.

The same applies to when the user enters his name if his name has been entered into the database before he should use the dropdown menu to select his name.

After these information have been filled out the user can press the "Sign Up" button which will give the following window or press the "Back" button to go to previous window to fix errors he might have made.

Figure 10: Tenth interface window

This window hold information about the name of the place in the river the fish was caught the number of the place and the date. The name of the place is entered by the user, this option could be pre entered if the software is at a specific river so the user can then use a dropdown menu to select the name of the place. The number of the place is entered and can also be pre entered so the user selects from a dropdown menu if the software is located at a specific river. The date is just the date the fish was caught and is entered in the form 25.10.2007 i.e. 25 October 2005, the user can't enter a date in a wrong format since the Salmon Sign will present the user with an error.

After entering all the information needed the user can press the "Sign Up" button or the "Back" button, pressing the "Sign Up" button will present the user with the next window in registering the fish, or he can press the "Back" window If he wants to go back and fix errors.

Figure 11: Eleventh interface window

This is the next window in the register process here the user enters the kind, gender, size and the length of the fish.

For the kind radio buttons are used so the user can only select Salmon or Trout the same goes for gender of the fish radio buttons are used so the user can only click one of these button, as soon as the user has chosen snag or spawn the other option is no longer available. Size in pounds is chosen by a dropdown menu where the numbers are 0.5 and up to 35+ these numbers all have 0.5 between them. The number 35+ is the highest numbers since the largest fish ever caught in Iceland is under 35 pounds. The length in centimetres is done by the keyboard i.e. the user enters the numbers him self. After talking to fishermen I decided not to use a dropdown menu for the length in cm since fisherman often don't know the length of the fish and could use the dropdown menu to choose any length.
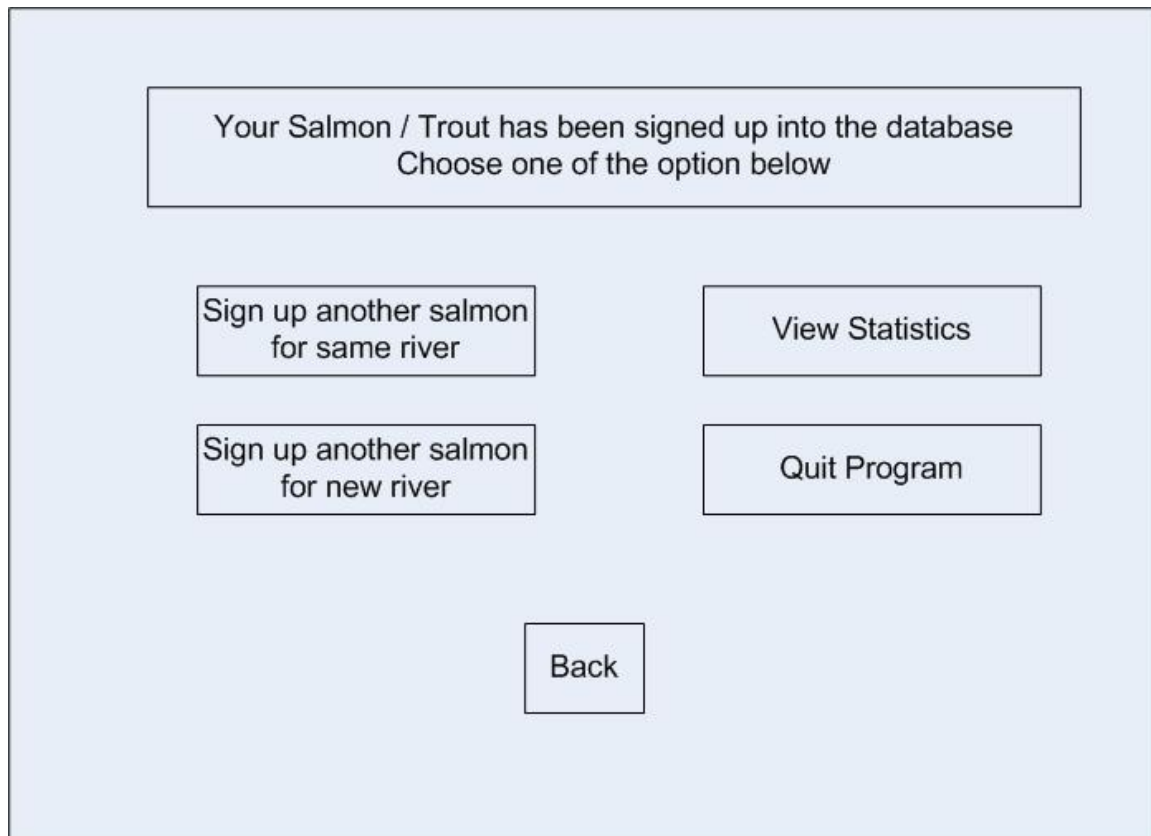
Figure 12: Twelve interface window

The above window is the window the user fills in the bait used and weather conditions that day. The bait used is chosen by clicking with the mouse on a radio button only one can be chosen i.e. worm, fly or spinner. A radio button is also used for fish released, which stands for was the fish released back to the river.

The weather conditions i.e. sun, rain, fog or snow is chosen by a radio button and only one can be chosen. The air temperature is chosen by a dropdown menu which contains the number from -25 and up to 30 the measurement is Celsius.

The river temperature is chosen by a dropdown menu which contains the numbers from -25 and up to 25 the measurement used is Celsius. The user can press the "Back" button do go to previous window and fix error or press the "Sign Up" button which will finish the registration of that fish the next window that appears is as follows.
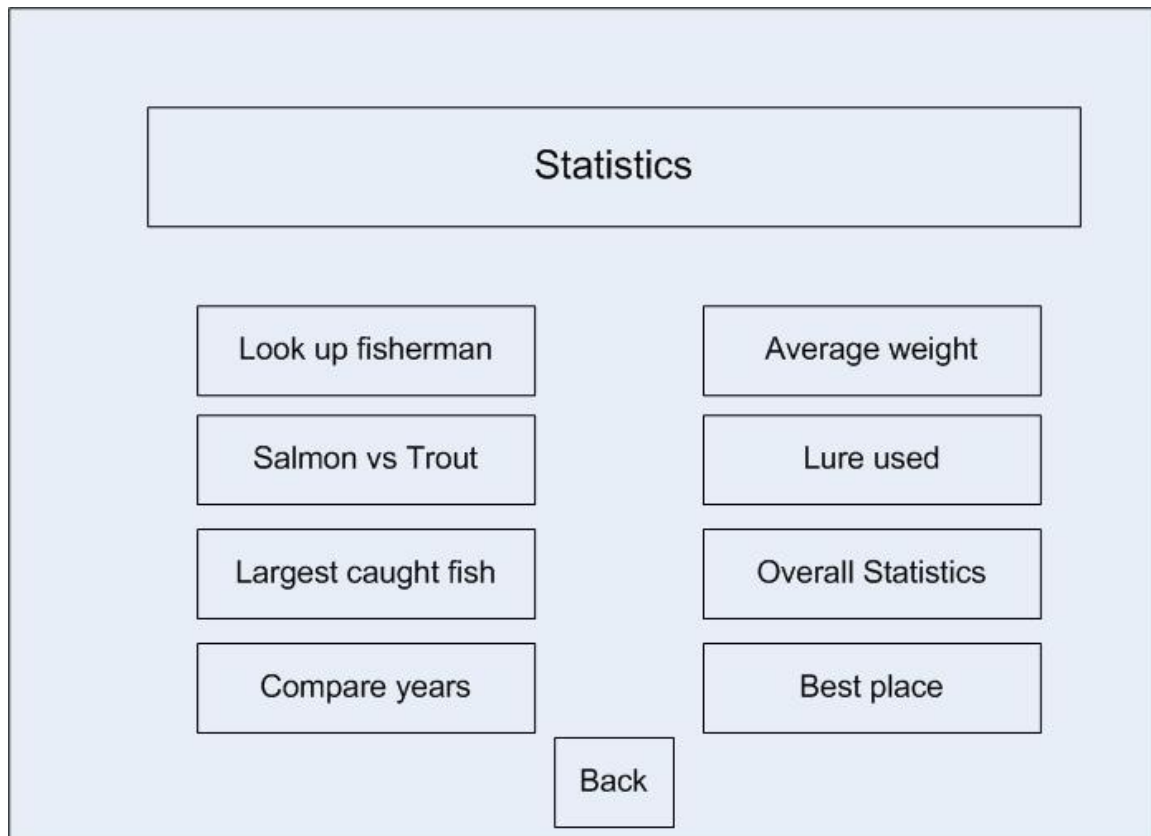
Figure 13: Thirteenth interface window

This window appears after the registration of the fish has been entered. Now the user has the option of signing up another salmon for the same river, which will let the user skip the first window in the registration process i.e. river name and fisherman name.

If the "Button sign up another salmon for new river" is pressed the user will be taken back to the first window where he has to enter the river name and fisherman name again.

"Quit Program" window will simply close the Salmon sign up software, Only Administrator and Operator access will have the option of pressing this button, the normal user cant close the program.

"View Statistics" button will give the user the option of viewing statistics as the following window shows. This is the same window that will appear if the user selects this option from the first window.

Figure 14: Fourteenth interface window

The statistics window give the user the option of viewing statistics from the information previously entered into the Salmon Sign.

Look up fisherman will give the user the option of selecting a fisherman name by a dropdown menu, and getting all information about him that are stored in the database.

Salmon vs. Trout will present the user with information on how many salmon has been caught versus how many Trout have been caught.

Largest caught fish simply shows the largest caught fish that is stored in the database, the name of the fisherman will follow as for the river name, name of the place and what bait was used.

Compare years will present the user with information which the user can select from different rivers and compare all the years of the caught fish that is stored in the database. If there is only one river stored in the database then the user can compare years for the same river.

Average weight will compare the average weight of caught salmon versus average weight of caught trout.

Lure used option will present the user with all the caught fish both salmon and trout and compare the lure used.

Overall statistics will give the user overall statistics about a certain river, this will contain

- Salmon vs. Trout
- Largest caught fish
- Average weight
- Lure used
- Best Place

The overall statistics will not present the user with detailed information of all the statistics but an overall statistic window which is thought of as for quick viewing.

Best place option will present the user with a list of names in the river, with the best place at the top of the list and the second best place below the fist place and so on.

The best place is the place where most fish has been caught.

The first ER diagram
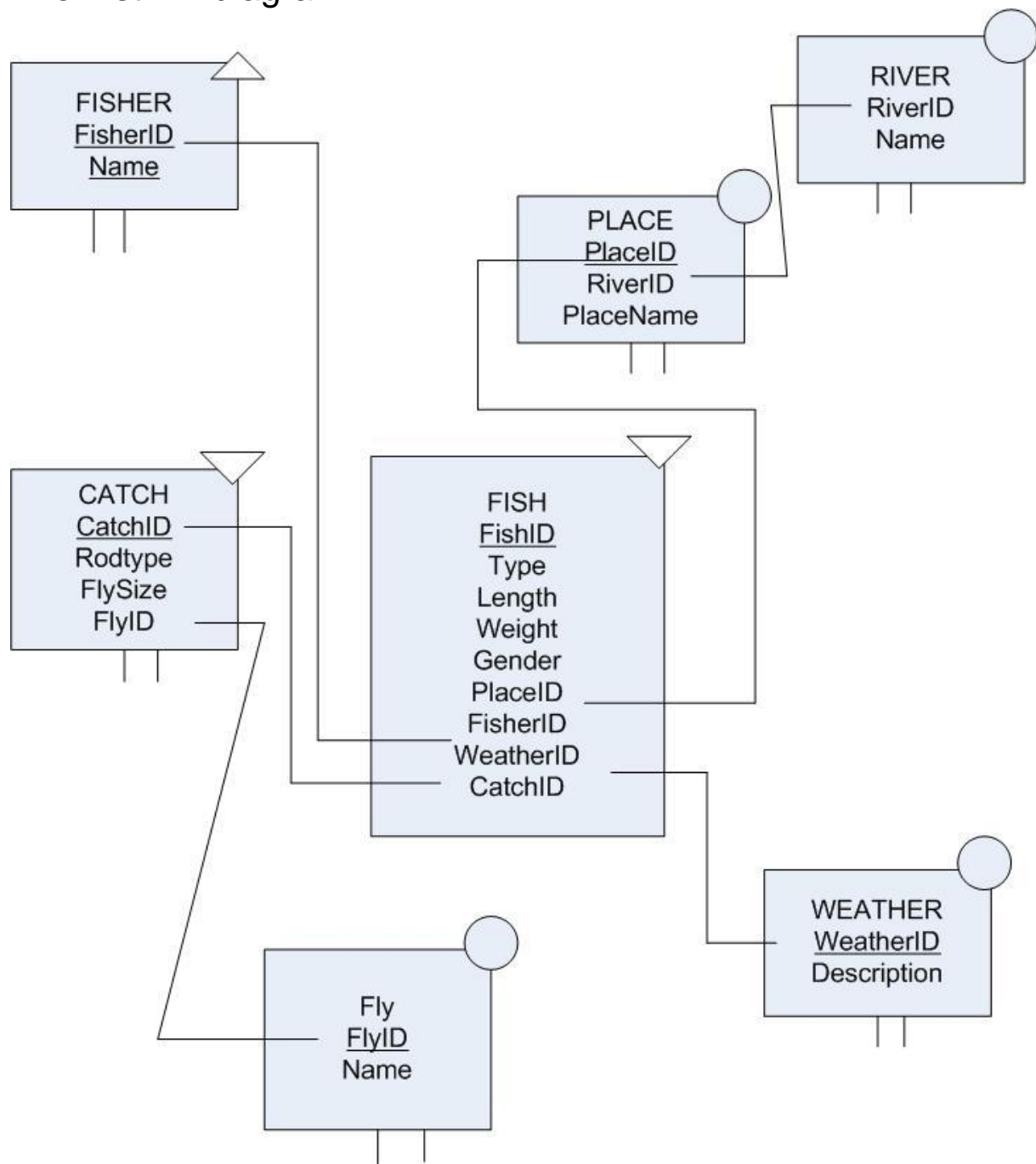
This ER diagram was first use in the design of the Salmon Sign after much change to the Forms, tables and the queries this ER diagram is no longer valid though some part of was used to change the ER diagram to what is looks like today.

Report created from the Salmon Sign

Skjálfandafljót - June 2006

Date	Fisher	River	Nr	Place	Bait	Gender	Species	Weather	Size	Cm	Rel	Air	River	Other
20.6.2006	Balli	Skjálfandafljót	14	Holan	Worm	Snag	Salmon	Rain	0	0	☐	0	0	
20.6.2006	Balli	Skjálfandafljót	14	Holan	Worm	Snag	Salmon	Rain	0	0	☐	0	0	
20.6.2006	Balli	Skjálfandafljót	14	Holan	Worm	Snag	Salmon	Rain	0	0	☐	0	0	
20.6.2006	Balli	Skjálfandafljót	14	Holan	Worm	Snag	Salmon	Rain	0	0	☐	0	0	
20.6.2006	Balli	Skjálfandafljót	14	Holan	Worm	Snag	Salmon	Rain	0	0	☐	0	0	
20.6.2006	Balli	Skjálfandafljót	14	Holan	Worm	Snag	Salmon	Rain	0	0	☐	0	0	
20.6.2006	Balli	Skjálfandafljót	14	Holan	Worm	Snag	Salmon	Rain	0	0	☐	0	0	
20.6.2006	Balli	Skjálfandafljót	14	Holan	Worm	Snag	Salmon	Rain	0	0	☐	0	0	
20.6.2006	Balli	Skjálfandafljót	14	Holan	Worm	Snag	Salmon	Rain	0	0	☐	0	0	
20.6.2006	Balli	Skjálfandafljót	14	Holan	Worm	Snag	Salmon	Rain	0	0	☐	0	0	
20.6.2006	Balli	Skjálfandafljót	14	Holan	Worm	Snag	Salmon	Rain	0	0	☐	0	0	
20.6.2006	Balli	Skjálfandafljót	14	Holan	Worm	Snag	Salmon	Rain	0	0	☐	0	0	
20.6.2006	Balli	Skjálfandafljót	14	Holan	Worm	Snag	Salmon	Rain	0	0	☐	0	0	
20.6.2006	Balli	Skjálfandafljót	14	Holan	Worm	Snag	Salmon	Rain	0	0	☐	0	0	
20.6.2006	Balli	Skjálfandafljót	14	Holan	Worm	Snag	Salmon	Rain	0	0	☐	0	0	
20.6.2006	Balli	Skjálfandafljót	14	Holan	Worm	Snag	Salmon	Rain	0	0	☐	0	0	

13. apríl 2007

Page 1 of 1

This is the first report that was created from the Salmon Sign this shows the caught fish for a river called Skjálfandafljót and has information about all the caught fish in June 2006

50

Appendix B – Time Line

Job Description	Deadlines
Sign up Porject	22nd September 2006
Interim Report	24th November 2006
Presentation	March 2007
Dissertation Report	13th April 2007
Demonstration	27th April 2007
User Testing	Mai 2007
River location Testing	June / July 2007