

COMPUTER UNIVERSITY (MANDALAY)



First of all we would like to express our sincere appreciation to all persons, whose guidance aided and the success of this project.

FINAL YEAR PROJECT REPORT

vector of the computer system, University

ON

I am deeply thankful to my supervisor Daw Thindi Aye, Assistant Lecturer, Department of software technology, Computer University (Mandalay), for her valuable guidance and encouragement which strengthened our focus, presentation and covered.

MAXIMUM SALES OF FOOTWEAR SHOP BY USING INSERTION SORT ALGORITHM

I am also thankful to my supervisor Dr. Kyaw Myint, Head of the Department of Software, Department, Computer University (Mandalay), for his helpful recommendations and suggestions.

We are also thankful to Daw Yi Mon Thwe, Tutor, English Department, City College, Yangon (University), for her assistance in editing this project.

We would like to express our thanks to all teachers at Computer University (Mandalay) for their helpful advice.

Finally, we especially thank our parents, our siblings and all our friends for their encouragement, help, kindness, providing many useful suggestions and giving their precious time to accomplish our project.

Presented by Group (19)

2014-2015

Acknowledgements

First of all we would like to express our sincere thanks and appreciation to all persons, whose guidance aided directly toward the success of this project.

We would respectfully thank and appreciate **Dr. Win Aye**, Rector of the Computer University (Mandalay).

I am deeply thankful to my supervisor **Daw Thindi Aye**, Assistant Lecturer, Department of software technology, Computer University (Mandalay) for her valuable guidance and encouragement that have strengthened our focus, presentation and correctness of the project.

And then, we would like to describe our sincere thank **Dr. Daw Aye Aye Chaw**, Associate Professor, Dean of Project, Software Department, Computer University (Mandalay), for her helpful recommendations and suggestions.

We are also thankful to **Daw Yi Mon Thaw**, Tutor, English Department, Computer University (Mandalay), for her assistance in editing this project from the English language point of view.

We would like to express our grateful thank to all teachers at Computer University (Mandalay) for their helpful advice.

Finally, we especially thank our parents, our siblings and all our friends for their encouragement, help, kindness, providing many useful suggestions and giving us their precious time to accomplish our project.

Group Member List

Sr.No	Name	Roll No.
1	Ma Phyo Thiri Aung	4CS-1
2	Ma Aye Aye Mar	4CS-51
3	Ma Aye Thazin Thein	4CS-174

Supervisor *Thindi, 28.9.2015*

Name: : Daw Thindi Aye

Rank: : Assistant Lecturer

Department: : Department of Software Technology

Computer University (Mandalay)

Project Schedule

Project Proposal :

First Seminar :

Second Seminar :

Third Seminar :

Book Submission :

Time Schedule	March 2015	May 2015	June 2015	July 2015	August 2015
Project Proposal					
First Seminar					
Second Seminar					
Third Seminar					
Book Submission					

Abstract

There are a large number of variations of one basic strategy for sorting. The insertion sort is the best of the elementary sort. This sorting algorithm assumes an array as data storage structure and involves the keys of data items in the array and moving the items around until they are in sorted order. This project is applied the maximum sales for footwear shop using insertion sort algorithm. The project displays the types of shoes which have the maximum sales according to the classification of shoes by week or month. This project is implemented by using VB.NET.

CHAPTER 1 INTRODUCTION

1.1	Introduction	1
1.2	Objectives of the Project	1
1.3	Project Requirements	2
1.3.1	Hardware Requirements	
1.3.2	Software Requirements	2

CHAPTER 2 THEORY BACKGROUND

2.1	Data Structure	2
2.2	Types of data structures	3
2.2.1	Linear data structures	4
2.2.2	Non-linear data structures	

CONTENTS

	Page
Acknowledgements	i
Group Member List	ii
Project Schedule	iii
Abstract	iv
List of Figures	viii
List of Tables	x

CHAPTER 1 INTRODUCTION

1.1	Introduction	1
1.2	Objectives of the Project	1
1.3	Project Requirements	2
1.3.1	Hardware Requirements	2
1.3.2	Software Requirements	2

CHAPTER 2 THEORY BACKGROUND

2.1	Data Structure	3
2.2	Types of data structures	3
2.2.1	Linear data structures	4
2.2.2	Non-linear data structures	4

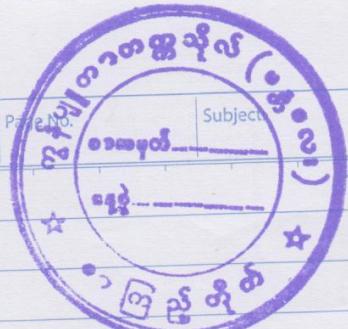
Sun Mon Tue Wed Thu Fri Sat

Date: 28/ 9/ 15

Page No.

Subject

project အော် ပေါ် ပြီး ကြော်



Member Lists - Ma Phyoe Thiri Aung FCS - 1
Ma Aye Aye Mar FCS - 51
Ma Aye Thazin Thein FCS - 174

Group Number - 19

မှတ်သော်

28/9/15

ကြော်ပေါ်

APOLO®

4.3	Limitations and Future Extension	19
References		20
2.3	Advantages and Disadvantages of Data Structure	4
2.4	Insertion Sort Algorithm	5
2.4.1	Sorting using insertion sort algorithm	6
2.4.1.1	Algorithm: Insertion Sort	6
2.4.1.2	Pseudocode	7
2.4.2	Advantages and Disadvantages of Insertion Sort Algorithm	8
2.5	Complexity Analysis of Insertion Sorting	9

CHAPTER 3 DESIGN AND IMPLEMENTATION

3.1	System Flow Diagram	10
3.2	Database Design and Data Set Tables	11
3.3	Implementation of The Project	14
3.3.1	Insertion Page	15
3.3.2	Display Page	16
3.3.3	Processing for Display Page	17
3.3.4	Processing for Search Page	27

CHAPTER 4 CONCLUSION

4.1	Conclusion	28
4.2	Advantages of the Project	28

4.3 Limitations and Further Extension

29

References

Figure	Page
3.1 System Flow Diagram	10
3.2 Home Page of the project	14
3.3 Insertion Page	15
3.4 Inserting the details of shoes information	16
3.5 Display Page	17
3.6 Showing details information for Slipper shoe type	18
3.7 Showing detail information for sandals shoe type	19
3.8 Showing detail information for high-heel shoe type	19
3.9 Showing detail information for Boots shoe type	20
3.10 Showing detail information for Boot shoe type	20
3.11 Showing detail information for large size shoe	21
3.12 Showing detail information for small size shoe	22

List of Figures

Figure	Showing detail information	Page
3.1	System Flow Diagram	10
3.2	Home Page of the project	14
3.3	Insertion Page	15
3.4	Inserting the details of shoes information	16
3.5	Display Page	17
3.6	Showing details information for Slipper shoe type	18
3.7	Showing detail information for sandals shoe type	18
3.8	Showing detail information for high-heels shoe type	19
3.9	Showing detail information for Boots shoe type	20
3.10	Showing detail information for Boot shoe type	20
3.11	Showing detail information for large size shoe	21
3.12	Showing detail information for small size shoe	22

3.13	Showing detail information for medium size shoe	22
3.14	Showing detail information for rainy shoe	23
3.15	Showing detail information for winter shoe	24
3.16	Showing detail information for popular shoe	24
3.17	Showing detail information for women shoe	25
3.18	Showing detail information for men shoe	26
3.19	Showing detail information of shoe	26
3.20	Maximum sales of the shoe	27

List of Tables

Table No	Page
3.1 ShoeType Table	11
3.2 Gender Table	11
3.3 Dataset	12
3.4 Shoesize Table	13
3.5 Shoeseason Table	13

A data structure is a specialized format for organizing and storing data. It provides a means to manage large amount of data efficiently for users. It is an arrangement of data elements in memory. Insertion sort is a simple sorting algorithm that builds the final sorted array (or list) one item at a time. It is much less efficient on large lists than more advanced algorithms such as quicksort, heapsort, or merge sort. However, insertion sort provides several advantages:

1.2 Objectives

- To find maximum sales of shoes at the foot wear shop.
- To minimize time consuming by using insertion sort algorithm.
- To show the number of shoes that are sold by weekly or monthly.
- To show types of shoes or size of shoes or season of shoes or gender wise of shoes.

1.1 Project Requirements CHAPTER 1

INTRODUCTION



1.1 Introduction

This project is processed to find the maximum sales of shoes by weekly or monthly. This project is implemented by using VB.NET and Microsoft Access Database.

A data structure is a specialized format for organizing and storing data. It provides a means to manage large amount of data efficiently for uses. It is an arrangement of data in a computer memory. Insertion sort is a simple sorting algorithm that builds the final sorted array (or list) one item at a time.

1.2 Objectives

- To find maximum sales of shoes in the footwear shop
- To minimize time consuming by using insertion sort algorithm
- To show the number of shoes that are sold by weekly or monthly
- To show types of shoes or size of shoes or season of shoes or gender type of shoes

1.3 Project Requirements

This project is implemented by using VB.NET and Microsoft Access Database.

1.3.1 Hardware Requirements

1. Desktop Computer or Laptop
2. Processor 1.60GHz
3. RAM 2.00GB

1.3.2 Software Requirements

1. Microsoft visual studio 2010
2. Microsoft office Access 2007

2.2 Types of Data Structures

Data structure is the logical and mathematical model of a particular organization of data. Data structures can be divided into two types: Linear data structures and Non-linear data structures.

2.2.1 Linear Data Structure

CHAPTER 2

THEORY BACKGROUND

In linear data structures, the data is stored in a sequence. It traverses the data elements sequentially, in which only one data element can directly be reached. Such as **Arrays**, **Linked lists**, **Stacks**, **Queues**, **Hash tables** etc.

2.1.1 Data Structure

Data structure is used to represent data in the memory of the computer so that the processing of data can be done in easier way. In computer programming, a data structure may be selected or designed to store data for the purpose of working on it with various algorithms. It is often optimized for certain operations. Programs that use the right data structure are easier to write and work better.

The most common and likely well-known data structure is the array, which contains a contiguous collection of data items that can be accessed by an ordinal index. When searching large amount of data, the data structure chosen can make a difference in the application's performance that can be visibly measured within seconds.

2.2 Types of Data Structures

Data structure is the logical and mathematical model of a particular organization of data. Data structures can be divided into two types: **Linear data structures** and **Non-linear data structures**.

2.2.1 Linear Data Structures

In linear data structures, the elements form a sequence. It traverses the data elements sequentially, in which only one data element can directly be reached. Such as **Arrays**, **Linked lists**, **Stacks** and **Queues** are linear data structures.

2.2.2 Non-linear Data Structures

In these data structures, the elements do not form a sequence. Every data item is attached to several other data items in a way that is specific for reflecting relationships. Such as **Trees** and **Graphs** are non-linear data structures.

2.3 Advantages and Disadvantages of Data Structure

Data structure, in simplest terms, is data organization for its efficient use, data structures can be of various types, depending on the application. For example, database use different data structures than compilers.

The advantages and disadvantages of data structures are listed:

Advantages:

1. Allows information storage on hard disks.
2. Provides means for management of large dataset such as databases or internet indexing services.
3. Requires for design of efficient algorithms.

4. Allows safe storage of information on a computer. The information is secured and cannot be lost (especially if it is stored on magnetic tapes).
5. Allows the data use and processing on a software system.
6. Allows easier processing of data.
7. By using internet, we can access the data anytime from any connected machine (computer, laptop, tablet, phone, etc.)

Disadvantages:

1. Only advanced users can make changes to data structures
2. Any problem involving data structure will need an expert's help, i.e. basic users cannot help themselves.

2.4 Insertion Sort Algorithm

It is a simple sorting algorithm which sorts the array by shifting elements one by one. The following are some of the important **characteristics** of insertion sort algorithm.

1. It is one of the simplest implementation
2. It is efficient just only for smaller data sets, but not larger ones.
3. Insertion sort can be adaptable, that means it reduces its total number of steps if there is a partially sorted list, it increases its efficiency.
4. It is better than selection sort and bubble sort algorithms.
5. Its space complexity is less, like Bubble Sorting, insertion sort also requires a single additional memory space.
6. It is stable, as it does not change the relative order of elements with equal keys.

2.4.1 Sorting using Insertion Sort Algorithm

If the first few objects are already sorted, an unsorted object can be inserted in the sorted set in proper place. This is called insertion sort. An algorithm considers the elements one at a time, inserting each in its suitable place among those already considered (keeping them sorted).

2.4.1.1 Algorithm: Insertion Sort

The insertion sort algorithm involves:

1. Start with the result as the first element of the input.
2. Loop over the input until it is empty, “removing” the first remaining (leftmost) element.
3. Compare the removed element against the current result, starting from the highest (rightmost) element, and working left towards the lowest elements
4. If the removed input element is lower than the current result element, copy that value into the following element to make room for the new element below, and repeat with the next lowest result element.
5. Otherwise, the new element is in the correct location; save it in the cell left by copying the last examined result up, and start again from (2) with the next input element.

2.4.1.2 Pseudocode

```

for i ← 1 to length(A) - 1
    j ← i
    while j > 0 and A[j-1] > A[j]
        swap A[j] and A[j-1]
        j ← j-1
    end while
end for

```

Case study: Let's take this array

5	11	15	8	1	2	3	3	3	1	3	2	12	7
---	----	----	---	---	---	---	---	---	---	---	---	----	---

(Always we start with the second element as key.)

5	11	15	8	1	2	3	3	3	1	3	2	12	7
5	11	15	8	1	2	3	3	3	1	3	2	12	7
5	11	15	8	1	2	3	3	3	1	3	2	12	7
5	8	11	15	1	2	3	3	3	1	3	2	12	7
1	5	8	11	15	2	3	3	3	1	3	2	12	7
1	2	5	8	11	15	3	3	3	1	3	2	12	7

In insertion sort, we pick up a key, and compares it with elements ahead of it, and puts the key in the right place.

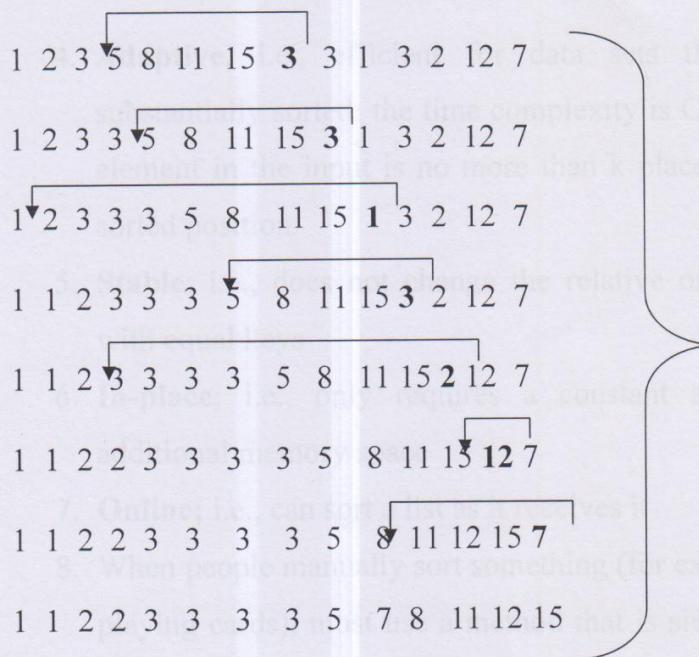
11 is greater than 5.

15 is greater than 5 and 11.

8 is smaller than 11 and 15, but greater than 5, so it is inserted after 5.

1 is smaller than 5, 8, 11, 15, so it is inserted before 5.

2 is smaller than 5, 8, 11, 15, but greater than 1, so it is inserted after 1.



3 is smaller than 5, 8, 11, 15, so it is inserted before 5.

And 1 is smaller than 2, 3, 5, 8, 11, 15, so it is inserted before 2.

Then, 12 is smaller than 15, but greater than 1, 2, 3, 5, 8, 11, so it is inserted after 11.

Finally, 7 is smaller than 8, 11, 12, 15 but greater than 1, 2, 3, 5, so it is inserted after 5.

Then sorted array is 1 1 2 2 3 3 3 5 7 8 11 12 15.

2.4.2 Advantages and Disadvantages of Insertion Sort Algorithm

Insertion sort is a simple sorting algorithm that builds the final sorted array (or list) one item at a time. It is much less efficient on large lists than more advanced algorithms such as quicksort, heapsort, or merge sort.

Advantages:

1. Simple implementation
2. Efficient for (quite) small data sets
3. More efficient in practice than most other simple quadratic (i.e., $O(n^2)$) algorithms such as selection sort or bubble sort.

4. **Adaptive**, i.e., efficient for data sets that are already substantially sorted: the time complexity is $O(nk)$ when each element in the input is no more than k places away from its sorted position.
5. **Stable**; i.e., does not change the relative order of elements with equal keys
6. **In-place**; i.e., only requires a constant amount $O(1)$ of additional memory space
7. **Online**; i.e., can sort a list as it receives it
8. When people manually sort something (for example, a deck of playing cards), most use a method that is similar to insertion sort.

Disadvantages:

1. It is less efficient on list containing more number of elements.
2. As the number of elements, increases the performance of the program would be slow.
3. Insertion sort needs a large number of element shifts.

2.5 Complexity Analysis of Insertion Sorting

Worst Case Time Complexity : $O(n^2)$

Best Case Time Complexity : $O(n)$

Average Time Complexity : $O(n^2)$

Space Complexity : $O(1)$

DESIGN AND IMPLEMENTATION

3.1 System Flow Diagram

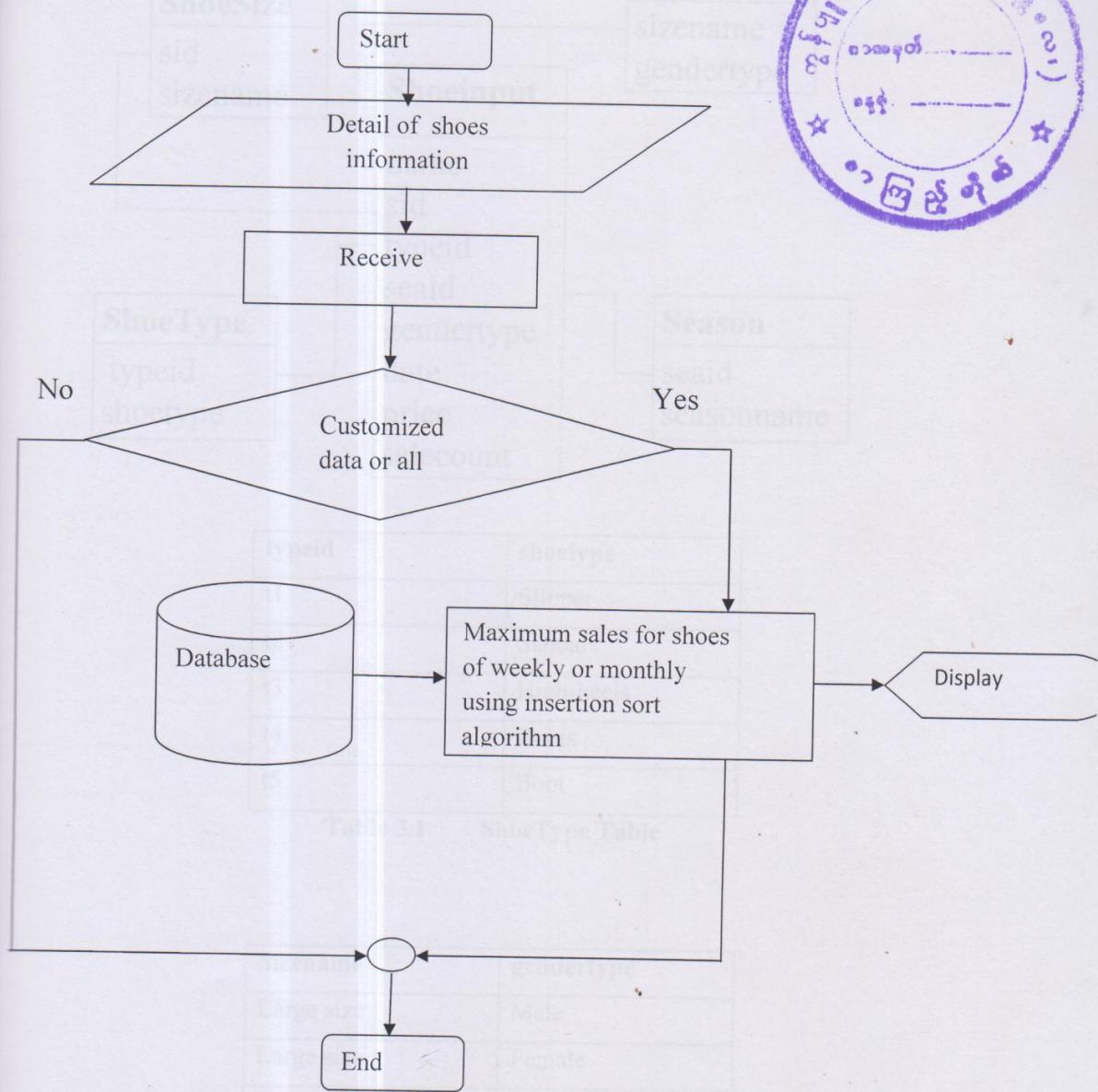
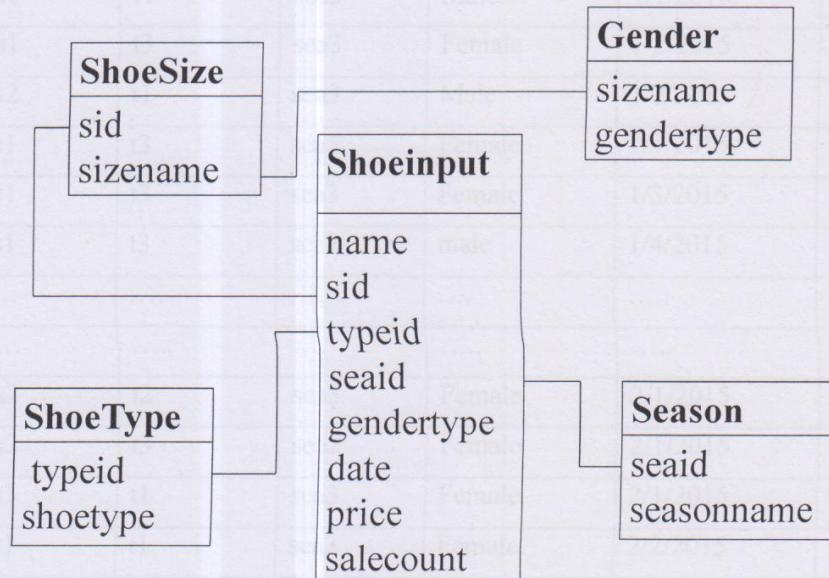


Figure 3.1 System Flow Diagram

3.2 Database Design and Data Set Tables



typeid	shoetype
t1	Slipper
t2	Sandals
t3	High-heels
t4	Boots
t5	Boot

Table 3.1 ShoeType Table

Sizename	gendertype
Large size	Male
Large size	Female
Small size	Male
Small size	Female
Medium size	Male
Medium size	Female

Table 3.2 Gender Table

	sid	type-id	sea-id	gender-type	Shoe-date	price	sale-count
	s1	t2	Sea3	Female	1/1/2015	12500	3
	s1	t2	sea3	Female	1/1/2015	3700	3
	s1	t1	sea3	Male	1/1/2015	8500	2
	s1	t3	sea3	Female	1/2/2015	2500	5
	s2	t1	sea3	Male	1/2/2015	7000	1
	s1	t3	sea3	Female	1/3/2015	2500	1
	s1	t3	sea3	Female	1/3/2015	6500	2
	s1	t3	sea2	male	1/4/2015	4200	3

	s2	t2	sea3	Female	2/1/2015	9000	2
	s2	t3	sea2	Female	2/1/2015	6500	3
	s3	t1	sea3	Female	2/1/2015	2500	5
	s1	t1	sea3	Female	2/2/2015	21500	3

	s1	t5	seal	Female	3/1/2015	5500	2
	s1	t3	sea3	Female	3/1/2015	9500	2
	s1	t3	sea3	Female	3/1/2015	9000	3

	s1	t1	sea3	Female	4/1/2015	5000	2
	s2	t3	sea3	Female	4/1/2015	30000	1
	s1	t3	sea3	Female	4/1/2015	15000	2
	s1	t3	sea3	Female	4/2/2015	15000	1

	s2	t2	sea2	Female	7/1/2015	9000	2
	s2	t3	sea3	Female	7/1/2015	6500	3
	s3	t1	sea3	Female	7/1/2015	2500	5
	s1	t3	sea3	Female	7/2/2015	2500	4

Table 3.3 Dataset

3.3 Implementation of The Project

Sid	sizename
s1	Large size
s2	Small size
s3	Medium size

Table 3.4 ShoeSize Table

seaid	Seasonname
seal	Rainy season
sea2	Winter season
sea3	Popular season

Table 3.5 ShoeSeason Table

Figure 3.2 Home Page of the project

3.3 Implementation of The Project

This project is implemented by VB.NET and Microsoft Access Database. Microsoft Access Database includes shoeinput table, shoesize table, shoegender table, shoetype table and shoesseason table.

Home page is shown in figure (3.2). Home page includes one button for showing the next form.

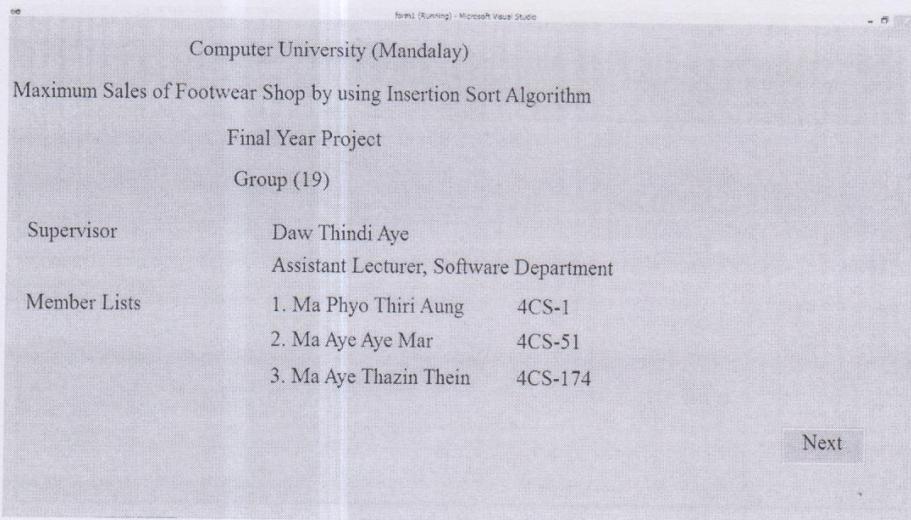


Figure 3.2 Home Page of the project

After all the fields and dropdowns are filled, the user can click the 'Insert' button to insert the data into the 'shoeinput' table. If the user does not want to insert, the user can perform clear. And then the data are displayed with the DataGridView shown in Figure 3.4.

3.3.1 Insertion Page

This page includes three main labels: Data Entry for inserting the details of data in the shoeinput table, Display Data for showing the shoe information selected, Exit for quit the project. In Data Entry process, shoe name, shoe size, shoe type, season, gender, date, price and salecount are input in the text box. Insertion Page is shown in figure 3.3

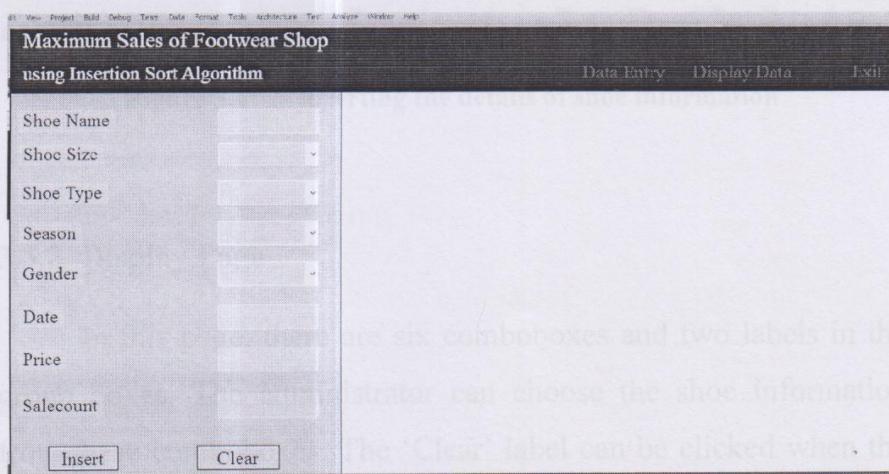


Figure 3.3 Insertion Page

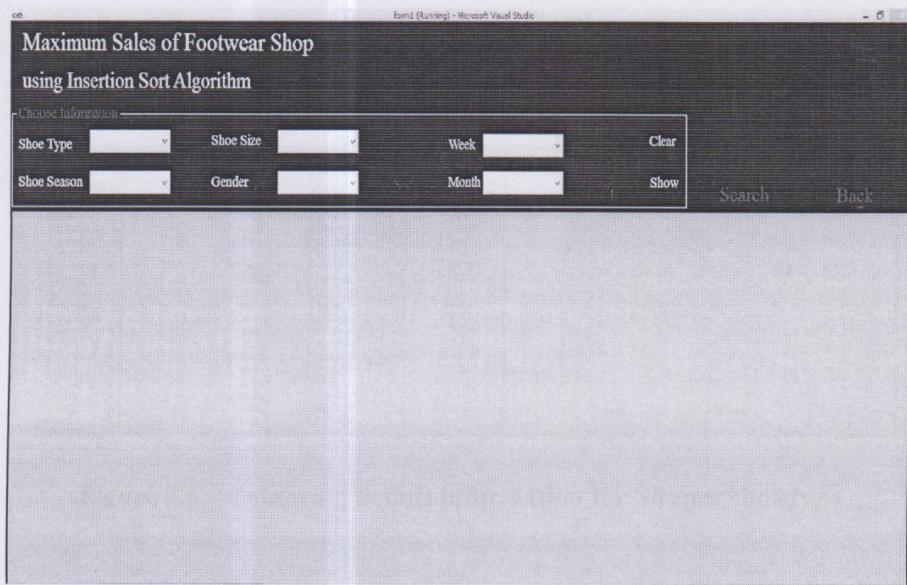
After all textboxes and comboboxes are filled, the user can click the 'Insert' button to insert the data into the 'shoeinput' table. If the user does not want to insert, the user can perform clear. And then the data are displayed with the DataGridView shown in Figure 3.4.

Maximum Sales of Footwear Shop using Insertion Sort Algorithm								
			Data Entry			Display Data		Exit
Shoe Name	Jajaco		name	sd	typed	sea6	genderope	shoedate
Kangaroo	s1	t1	sea7	Male	7/1/2015	3700	1	
Elephant	s2	t1	sea2	Male	7/1/2015	3000	1	
Uly	s1	t2	sea3	Female	7/1/2015	12500	2	
Levi	s1	t2	sea3	Female	7/1/2015	3700	2	
Kangaroo	s1	t3	sea1	Male	7/1/2015	3500	2	
Elephant	s2	t1	sea2	Male	7/2/2015	3000	1	
Uly	s1	t3	sea3	Female	7/2/2015	12500	2	
Levi	s1	t2	sea3	Female	7/2/2015	3700	2	
Kangaroo	s1	t3	sea1	Male	7/2/2015	3500	2	
Uly	s1	t3	sea3	Female	7/2/2015	13500	3	
Jacco	s2	t1	sea1	Male	7/2/2015	7000	2	
Cherry	s1	t3	sea3	Female	7/3/2015	2500	2	
Levi	s1	t2	sea3	Female	7/3/2015	3700	2	
Cherry	s1	t3	sea3	Female	7/3/2015	2500	2	
Jacco	s2	t1	sea1	Male	7/3/2015	7000	1	
Kangaroo	s1	t3	sea1	Male	7/4/2015	3000	1	
Yinner	s1	t1	sea3	Female	7/4/2015	1500	1	
Cherry	s1	t1	sea3	Female	7/4/2015	2500	1	
Forever	s2	t1	sea3	Female	7/5/2015	3800	1	
Ipanema	s2	t1	sea3	Female	7/6/2015	10000	2	
ADDA	s1	t1	sea3	Female	7/5/2015	6500	3	
Levi	s1	t1	sea3	Male	7/5/2015	6000	3	
Uly	s1	t3	sea3	Female	7/5/2015	8000	3	

Figure 3.4 Inserting the details of shoe information

3.3.2 Display Page

In this page, there are six comboboxes and two labels in the group boxes. The administrator can choose the shoe information from these comboboxes. The ‘Clear’ label can be clicked when the administrator wants to clear the selected data in the comboboxes. And the ‘Show’ label is to show the desired information. There are also another two labels: ‘Search’ label for finding the maximum sales in the footwear shop and ‘Exit’ label for quit the project. Figure 3.5 shows the ‘Display’ Page.



If he/she click the 'Show' label, the detailed information of the Sandals shoe type is shown in the DataGridView. This process is shown in Figure 3.7.

3.3.3 Processing for Display Page

When the administrator wants to view the maximum sales of shoes in his/her footwear shop, he can choose the desire data in the comboboxes. If he/she choose shoe type 'Slipper' and then clicks the 'show' label, the detailed information of the Slipper shoe type is shown in the DataGridView. This process is shown in Figure 3.5

Figure 3.7 showing detail information for Sandals shoe type

Maximum Sales of Footwear Shop using Insertion Sort Algorithm								
Shoe Type		Shoe Size	Week	Month	Search Back			
Shoe Season	Gender	Clear	Show					
name	sid	typeid	seaid	genderty	shoedat	price	salecou	
Eleoh...	s2	t1	sea2	Male	7/1/2...	3000	1	
Jaiaco...	s2	t1	sea1	Male	7/2/2...	7000	2	
Jaiaco...	s2	t1	sea1	Male	7/3/2...	7000	1	
Yinmar...	s1	t1	sea3	Female	7/4/2...	1500	1	
Chenv...	s1	t1	sea3	Female	7/4/2...	2500	1	
Forever...	s2	t1	sea3	Female	7/5/2...	3900	1	
Ioane...	s2	t1	sea3	Female	7/5/2...	12000	2	
ADDA...	s1	t1	sea3	Female	7/5/2...	6500	3	
Aeros...	s1	t1	sea3	Male	7/5/2...	6500	3	
Laurel...	s1	t1	sea3	Female	7/5/2...	2500	3	
Rider...	s1	t1	sea3	Female	7/6/2...	12000	1	
BALLY...	s1	t1	sea3	Female	7/6/2...	4000	1	
Charles...	s1	t1	sea3	Female	7/6/2...	20000	2	
Gnoz...	s1	t1	sea3	Female	7/6/2...	4000	3	
Scoll...	s1	t1	sea3	Male	7/7/2...	8500	1	
Bato...	s1	t1	sea3	Female	7/7/2...	21500	1	
Giant...	s1	t1	sea3	Female	7/7/2...	8500	2	
Raile...	s1	t1	sea3	Female	7/8/2...	6300	3	
DCH...	s1	t1	sea3	Female	7/8/2...	5000	3	

Figure 3.6 showing details information for Slipper shoe type

If he/she chooses shoe type ‘Sandals’ and then clicks the ‘show’ label, the detailed information of the Sandals shoe type is shown in the DataGridView. This process is shown in Figure 3.7.

Maximum Sales of Footwear Shop using Insertion Sort Algorithm								
Shoe Type		Shoe Size	Week	Month	Search Back			
Shoe Season	Gender	Clear	Show					
name	sid	typeid	seaid	genderty	shoedat	price	salecou	
Shut...	s1	t2	sea3	Female	7/1/2...	3700	3	
Laurel...	s1	t2	sea3	Female	7/1/2...	3700	2	
Laurel...	s1	t2	sea3	Female	7/2/2...	3700	2	
Laurel...	s1	t2	sea3	Female	7/3/2...	3700	2	
Rider...	s1	t2	sea3	Female	7/13/...	15000	1	
shut...	s1	t2	sea3	Male	7/14/...	20000	1	
shut...	s1	t2	sea3	Male	7/14/...	20000	1	
Open...	s1	t2	sea3	Female	7/15/...	9500	1	
Ankl...	s1	t2	sea3	Female	7/15/...	9500	1	
T.Stra...	s1	t2	sea3	Female	7/19/...	9500	3	
Wedge...	s1	t2	sea3	Female	7/27/...	30000	1	
Lilv...	s3	t2	sea2	Female	6/3/2...	15000	2	
Dorsav...	s2	t2	sea3	Female	6/25/...	23000	3	
Dorsav...	s2	t2	sea3	Female	8/1/2...	23000	2	
Yinmar...	s2	t2	sea2	Female	6/24/...	2000	5	
Pioneer...	s1	t2	sea2	Female	1/7/2...	5000	2	
XIE...	s1	t2	sea2	Female	1/10/...	15000	3	
Lilv...	s3	t2	sea3	Female	1/12/...	12500	2	
Ruby...	s1	t2	sea2	Female	1/16/...	7000	3	
Clog...	s1	t2	sea3	Female	1/18/...	15000	1	

Figure 3.7 showing detail information for Sandals shoe type

If he/she chooses shoe type 'High-heels' and then clicks the 'show' label, the detailed information of the High-heels shoe type is shown in the DataGridView. This process is shown in Figure 3.8.

name	sid	typeid	seaid	gender	entry	shoedate	price	salecount
Lily	s1	t3	sea1	Male	7/1/2023	3500	1	
Kane	s1	t3	sea3	Female	7/1/2023	12500	2	
Lily	s1	t3	sea3	Male	7/1/2023	3500	2	
Kane	s1	t3	sea3	Female	7/2/2023	12500	2	
Lily	s1	t3	sea3	Male	7/2/2023	3500	2	
Cherrv	s1	t3	sea3	Female	7/2/2023	13500	3	
Cherrv	s1	t3	sea3	Female	7/3/2023	2500	2	
Kane	s1	t3	sea3	Female	7/3/2023	2500	2	
Lily	s1	t3	sea1	Male	7/4/2023	3000	1	
Fuziko	s1	t3	sea3	Female	7/5/2023	9000	3	
Ingin	s1	t3	sea3	Female	7/7/2023	9000	1	
Sis	s1	t3	sea3	Female	7/8/2023	6500	3	
San	thit	s2	sea3	Female	7/8/2023	8000	3	
MX	s1	t3	sea3	Female	7/8/2023	4200	3	
Marina	s1	t3	sea3	Female	7/9/2023	4500	4	
MIC	s1	t3	sea3	Female	7/9/2023	4000	2	
Dailv	s1	t3	sea3	Female	7/9/2023	4600	1	
Big R...	s1	t3	sea3	Female	7/9/2023	5000	1	
Super	s1	t2	sea2	Female	7/10/2023	4500	1	

Figure 3.8 showing detail information for high-heels shoe type

If he/she chooses shoe type 'Boots' and then clicks the 'show' label, the detailed information of the Boots shoe type is shown in the DataGridView. This process is shown in Figure 3.9.

Figure 3.10 showing detail information for Boot shoe type

Maximum Sales of Footwear Shop							
using Insertion Sort Algorithm							
Choose Information		Shoe Type		Shoe Size		Week	
Shoe Type	Boots	Shoe Size	14	Week	7/25/2010	Clear	
Shoe Season	Summer	Gender	Female	Month	July	Show	
name	sid	typeid	seaid	gender	shoedat	price	salecou
Blk...	s1	t4	sea3	Female	7/25/2010	20000	1
Knee...	s1	t4	sea3	Female	7/25/2010	20000	1
Welli...	s1	t4	sea3	Female	7/25/2010	20000	1
Cow...	s1	t4	sea3	Female	7/25/2010	20000	1
Ugg...	s1	t4	sea3	Female	7/25/2010	20000	1
Timb...	s1	t4	sea3	Female	7/25/2010	20000	1
Gladi...	s1	t4	sea3	Female	7/25/2010	20000	1
Bond...	s1	t4	sea3	Female	7/25/2010	20000	1
Dr M...	s1	t4	sea3	Female	7/25/2010	6500	5
Crocs...	s1	t4	sea3	Female	7/25/2010	6500	5
Timb...	s1	t4	sea3	Female	7/28/2010	15000	2
Knee...	s1	t4	sea3	Female	5/10/2010	20000	2
Cow...	s1	t4	sea1	Female	1/12/2010	20000	3
Cow...	s1	t4	sea1	Female	1/2/2010	20000	3
Cow...	s1	t4	sea1	Female	1/2/2010	20000	3
Cow...	s2	t4	sea2	Female	4/2/2010	20000	3
Cow...	s2	t4	sea2	Female	4/23/2010	20000	3
Cow...	s2	t4	sea2	Female	4/23/2010	20000	1
Cow...	s2	t4	sea2	Female	4/28/2010	20000	1
...

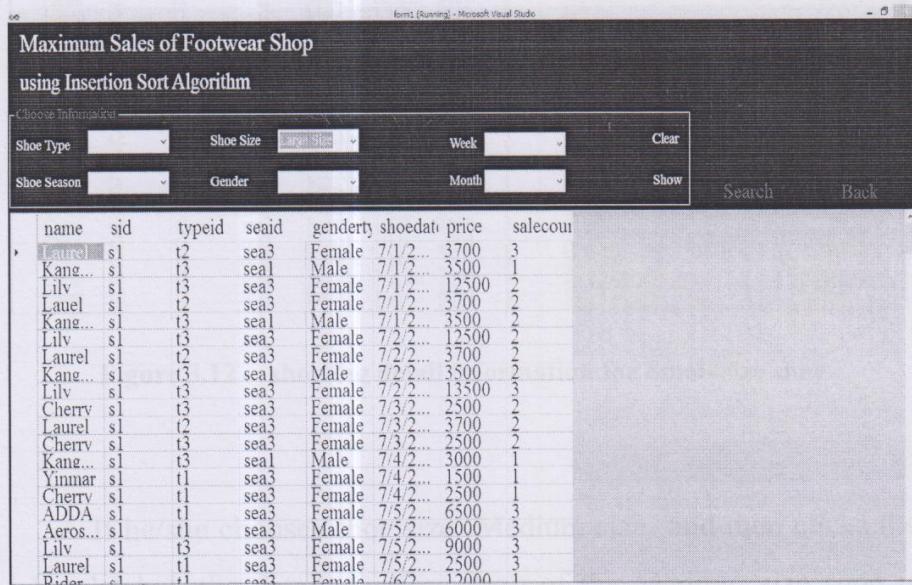
Figure 3.9 showing detail information for Boots shoe type

If he/her chooses shoe type ‘Boot’ and then clicks the ‘show’ label, the detailed information of the Boot shoe type is shown in the DataGridView. This process is shown in Figure 3.10.

Maximum Sales of Footwear Shop							
using Insertion Sort Algorithm							
Choose Information		Shoe Type		Shoe Size		Week	
Shoe Type	Boots	Shoe Size	15	Week	7/13/2010	Clear	
Shoe Season	Summer	Gender	Male	Month	July	Show	
name	sid	typeid	seaid	gender	shoedat	price	salecou
Blk...	s1	t5	sea3	Male	7/13/2010	20000	1
NIKE	s1	t5	sea3	Male	7/14/2010	20000	1
Ugg	s1	t5	sea1	Female	7/18/2010	5500	2
Oxford	s1	t5	sea1	Female	7/18/2010	5500	2
Spool	s1	t5	sea3	Female	7/20/2010	15000	1
Thieh	s1	t5	sea3	Female	7/20/2010	15000	1
Whol...	s1	t5	sea3	Male	7/20/2010	25000	1
Long...	s1	t5	sea3	Male	7/21/2010	25000	1
Short...	s1	t5	sea3	Male	7/21/2010	25000	1
Split...	s1	t5	sea3	Male	7/21/2010	25000	1
Plain...	s1	t5	sea3	Male	7/21/2010	25000	1
Pert...	s1	t5	sea3	Male	7/21/2010	25000	1
Jodh...	s1	t5	sea3	Male	7/21/2010	50000	1
Chels...	s1	t5	sea3	Male	7/22/2010	100000	1
Chukka	s1	t5	sea3	Male	7/22/2010	150000	1
Wingto	s1	t5	sea3	Male	7/22/2010	150000	1
Solt...	s1	t5	sea3	Male	7/22/2010	150000	1
Oxford	s1	t5	sea3	Female	7/23/2010	11000	1
...

Figure 3.10 showing detail information for Boot shoe type

If he/she chooses shoe size 'Large size' and then clicks the 'show' label, the detailed information of the Large size shoe is shown in the DataGridView. This process is shown in Figure 3.11.



name	sid	typeid	seaid	gender	shoedat	price	salecou
Laurel	s1	t2	sea3	Female	7/1/2...	3700	3
Kan...	s1	t3	sea1	Male	7/1/2...	3500	1
Lilv	s1	t3	sea3	Female	7/1/2...	12500	2
Lauel	s1	t2	sea3	Female	7/1/2...	3700	2
Kan...	s1	t3	sea1	Male	7/1/2...	3500	2
Lilv	s1	t3	sea3	Female	7/2/2...	12500	2
Laurel	s1	t2	sea3	Female	7/2/2...	3700	2
Kan...	s1	t3	sea1	Male	7/2/2...	3500	2
Lilv	s1	t3	sea3	Female	7/2/2...	13500	3
Cherry	s1	t3	sea3	Female	7/3/2...	2500	2
Laurel	s1	t2	sea3	Female	7/3/2...	3700	2
Cherrv	s1	t3	sea3	Female	7/3/2...	2500	2
Kana...	s1	t3	sea1	Male	7/4/2...	3000	1
Yinnar	s1	t1	sea3	Female	7/4/2...	1500	1
Cherry	s1	t1	sea3	Female	7/4/2...	2500	1
ADDA	s1	t1	sea3	Female	7/5/2...	6500	3
Aeros...	s1	t1	sea3	Male	7/5/2...	6000	3
Lilv	s1	t3	sea3	Female	7/5/2...	9000	3
Laurel	s1	t1	sea3	Female	7/5/2...	2500	3
Rider	s1	t1	sea3	Female	7/6/2...	13000	1

Figure 3.11 showing detail information for Large size shoe

If he/she chooses shoe size 'Small size' and then clicks the 'show' label, the detailed information of the Small size shoe is shown in the DataGridView. This process is shown in Figure 3.12.

Figure 3.12 showing detail information for Medium size shoe

Maximum Sales of Footwear Shop								
using Insertion Sort Algorithm								
Choose Information		Shoe Type	Shoe Size	Search Size	Week	Month	Clear	Show
Shoe Season		Gender					Search	Back
name	sid	typeid	seaid	gender	shoedat	price	salecou	
Elephant	s2	t1	sea2	Male	7/1/2023	3000	1	
Elephant	s2	t1	sea2	Male	7/2/2023	3000	1	
Jaiaco	s2	t1	sea1	Male	7/2/2023	7000	2	
Jaiaco	s2	t1	sea1	Male	7/3/2023	7000	1	
Forever	s2	t1	sea3	Female	7/5/2023	3900	1	
Ioane...	s2	t1	sea3	Female	7/5/2023	12000	2	
San thit	s2	t3	sea3	Female	7/8/2023	8000	3	
Laurel	s2	t3	sea3	Female	7/12/2023	3700	1	
Laurel	s2	t3	sea3	Female	7/12/2023	3700	2	
Cow...	s2	t4	sea2	Female	4/2/2023	20000	3	
Cow...	s2	t4	sea2	Female	4/23/2023	20000	3	
Cow...	s2	t4	sea2	Female	4/23/2023	20000	1	
Cow...	s2	t4	sea2	Female	4/28/2023	20000	1	
Cow...	s2	t4	sea2	Female	5/28/2023	20000	1	
Cone	s2	t3	sea2	Female	1/1/2023	7500	3	
Cone	s2	t3	sea2	Female	1/11/2023	7500	3	
Cone	s2	t3	sea2	Female	3/11/2023	7500	3	
Cone	s2	t3	sea2	Female	3/12/2023	7500	3	
Pump	s2	t3	sea1	Female	1/27/2023	8000	1	
Dress...	s2	t2	sea1	Female	2/5/2023	8000	1	

Figure 3.12 showing detail information for Small size shoe

If he/she chooses shoe size ‘Medium size’ and then clicks the ‘show’ label, the detailed information of the Medium size shoe is shown in the DataGridView. This process is shown in Figure 3.13.

Maximum Sales of Footwear Shop								
using Insertion Sort Algorithm								
Choose Information		Shoe Type	Shoe Size	Medium Size	Week	Month	Clear	Show
Shoe Season		Gender					Search	Back
name	sid	typeid	seaid	gender	shoedat	price	salecou	
Yin...	s3	t3	sea3	Female	7/10/2023	2200	1	
Cherry	s3	t1	sea2	Female	7/12/2023	2200	3	
Lily	s3	t2	sea2	Female	6/17/2023	15000	2	
Cone	s3	t3	sea3	Female	3/18/2023	7500	3	
Cone	s3	t3	sea3	Female	4/8/2023	7500	3	
Cone	s3	t3	sea3	Female	4/18/2023	7500	3	
Cone	s3	t3	sea3	Female	4/19/2023	7500	3	
T Str...	s3	t3	sea1	Female	3/9/2023	7500	4	
T Str...	s3	t3	sea1	Female	4/21/2023	7500	4	
T Str...	s3	t3	sea1	Female	4/21/2023	7500	4	
T Str...	s3	t2	sea1	Female	6/11/2023	3500	10	
BIGR...	s3	t3	sea1	Female	6/11/2023	12500	2	
Lily	s3	t3	sea3	Female	6/12/2023	30000	1	
Chun...	s3	t3	sea2	Female	5/3/2023	30000	1	
Chun...	s3	t3	sea2	Female	8/3/2023	40000	1	
BALLY	s3	t5	sea2	Female	3/3/2023	4000	2	
Sis...	s3	t1	sea3	Female	3/15/2023	6500	4	
lingin...	s2	t3	sea1	Female	4/20/2023	6000	3	
Dress...	s2	t2	sea2	Female	2/5/2023	12500	1	

Figure 3.13 showing detail information for Medium size shoe

If he/she choose shoe season 'Rainy shoes' and then clicks the 'show' label, the detailed information of the rainy shoes is shown in the DataGridView. This process is shown in Figure 3.14.

name	sid	typeid	seaid	gender	entry	shoedat	price	salecou
Kang...	s1	t3	seal	Male	7/1/2...	3500	1	
Kang...	s1	t3	seal	Male	7/1/2...	3500	2	
Kang...	s1	t3	seal	Male	7/2/2...	3500	2	
Jaiaco	s2	t1	seal	Male	7/2/2...	7000	2	
Jaiaco	s2	t1	seal	Male	7/3/2...	7000	1	
Kang...	s1	t3	seal	Male	7/4/2...	3000	1	
Mixstar	s1	t1	seal	Female	7/10/...	2500	2	
comet	s3	t1	seal	Female	7/10/...	2200	1	
Ugg	s1	t5	seal	Female	7/18/...	5500	2	
Ugg	s1	t5	seal	Female	7/18/...	5500	2	
Jaiaco	s1	t1	seal	Male	6/14/...	9000	1	
Cow...	s1	t4	seal	Female	1/12/...	20000	3	
Cow...	s1	t4	seal	Female	1/2/2...	20000	3	
Cow...	s1	t4	seal	Female	1/2/2...	20000	3	
Pumbo	s2	t5	seal	Female	1/5/2...	8000	1	
Pumbo	s2	t3	seal	Female	3/27/...	8000	12	
Pumbo	s2	t3	seal	Female	3/7/2...	8000	12	
Pumbo	s2	t3	seal	Female	4/7/2...	8000	5	
T Str...	s3	t3	seal	Female	4/9/2...	7500	4	

Figure 3.14 showing detail information for rainy shoe

If he/she chooses shoe season 'Winter shoes' and then clicks the 'show' label, the detailed information of the winter shoes is shown in the DataGridView. This process is shown in Figure 3.15.

Figure 3.16 Showing detail information for popudrasho

Maximum Sales of Footwear Shop using Insertion Sort Algorithm									
Choose Information									
Shoe Type	Shoe Size	Week	Clear	Shoe Season	Gender	Month	Show	Search	Back
Eleph...	s2	t1	sea2	Male	7/1/2...	3000	1		
Eleph...	s2	t1	sea2	Male	7/2/2...	3000	1		
Loafer	s1	t1	sea2	Female	7/20/...	5000	5		
Cherrv	s3	t1	sea2	Female	6/1/2...	2500	2		
Lilv	s3	t2	sea2	Female	6/3/2...	15000	5		
Cow...	s2	t4	sea2	Female	4/2/2...	20000	3		
Cow...	s2	t4	sea2	Female	4/23/...	20000	3		
Cow...	s2	t4	sea2	Female	4/23/...	20000	1		
Cow...	s2	t4	sea2	Female	4/28/...	20000	1		
Cow...	s2	t4	sea2	Female	5/28/...	20000	1		
Cone	s2	t3	sea2	Female	1/1/2...	7500	3		
Cone	s2	t3	sea2	Female	1/11/...	7500	3		
Cone	s2	t3	sea2	Female	3/11/...	7500	3		
Cone	s2	t3	sea2	Female	3/1/2...	7500	3		
T Str...	s2	t3	sea2	Female	2/29/...	7500	2		
T Str...	s2	t3	sea2	Female	2/9/2...	7500	3		
Dora...	s2	t1	sea2	Female	4/16/...	4500	5		
Dora...	s2	t1	sea2	Female	4/30/...	4500	5		
Yinnar	s2	t2	sea2	Female	6/24/...	2000	5		
Dora...	s1	t1	sea2	Female	5/5/2...	5000	2		

Figure 3.15 Showing detail information for winter shoe

If he/she chooses shoe season ‘Popular shoes’ and then clicks the ‘show’ label, the detailed information of the popular shoes is shown in the DataGridView. This process is shown in Figure 3.16.

Maximum Sales of Footwear Shop using Insertion Sort Algorithm									
Choose Information									
Shoe Type	Shoe Size	Week	Clear	Shoe Season	Gender	Month	Show	Search	Back
Lapel	s1	t2	sea3	Female	7/1/2...	3700	3		
Lilv	s1	t3	sea3	Female	7/1/2...	12500	2		
Laelu	s1	t2	sea3	Female	7/1/2...	3700	2		
Lilv	s1	t3	sea3	Female	7/2/2...	12500	2		
Laurel	s1	t2	sea3	Female	7/2/2...	3700	2		
Lilv	s1	t3	sea3	Female	7/2/2...	13500	3		
Cherrv	s1	t3	sea3	Female	7/3/2...	2500	2		
Laurel	s1	t2	sea3	Female	7/3/2...	3700	2		
Cherrv	s1	t3	sea3	Female	7/3/2...	2500	2		
Yinnar	s1	t1	sea3	Female	7/4/2...	1500	1		
Cherrv	s1	t1	sea3	Female	7/4/2...	2500	1		
Forever	s2	t1	sea3	Female	7/5/2...	3900	1		
Ipene...	s2	t1	sea3	Female	7/5/2...	12000	2		
ADDA	s1	t1	sea3	Female	7/5/2...	6500	3		
Aeros...	s1	t1	sea3	Male	7/5/2...	6000	3		
Lilv	s1	t3	sea3	Female	7/5/2...	9000	3		
Laurel	s1	t1	sea3	Female	7/5/2...	2500	3		
Rider	s1	t1	sea3	Female	7/6/2...	12000	1		
BALLY	s1	t1	sea3	Female	7/6/2...	4000	3		
Cherrv	s1	t1	sea3	Female	7/6/2...	20000	3		

Figure 3.16 Showing detail information for popular shoe

If he/she chooses shoe gender type 'Female' and then clicks the 'show' label, the detailed information of the women shoes is shown in the DataGridView. This process is shown in Figure 3.17.

name	sid	typeid	seaid	gender	shoedat	price	salecount
Laurel	s1	t2	sea3	Female	7/1/2023	3700	3
Lilv	s1	t3	sea3	Female	7/1/2023	12500	2
Lauel	s1	t2	sea3	Female	7/1/2023	3700	2
Lilv	s1	t3	sea3	Female	7/2/2023	12500	2
Laurel	s1	t2	sea3	Female	7/2/2023	3700	2
Lilv	s1	t3	sea3	Female	7/2/2023	13500	3
Cherrv	s1	t3	sea3	Female	7/3/2023	2500	2
Laurel	s1	t2	sea3	Female	7/3/2023	3700	2
Cherrv	s1	t3	sea3	Female	7/3/2023	2500	2
Yinmar	s1	t1	sea3	Female	7/4/2023	1500	1
Cherrv	s1	t1	sea3	Female	7/4/2023	2500	1
Forever	s2	t1	sea3	Female	7/5/2023	3900	1
Ipane...	s2	t1	sea3	Female	7/5/2023	12000	2
ADDA	s1	t1	sea3	Female	7/5/2023	6500	3
Lilv	s1	t3	sea3	Female	7/5/2023	9000	3
Laurel	s1	t1	sea3	Female	7/5/2023	2500	3
Rider	s1	t1	sea3	Female	7/6/2023	12000	1
BALLY	s1	t1	sea3	Female	7/6/2023	4000	3
Charles	s1	t1	sea3	Female	7/6/2023	20000	2
Ginnex	s1	t1	sea3	Female	7/6/2023	4000	2

Figure 3.17 Showing detail information for women shoe

If he/she chooses shoe gender type 'Male' and then clicks the 'show' label, the detailed information of the men shoes is shown in the DataGridView. This process is shown in Figure 3.18.

Figure 3.18 Showing detail information of shoe

Maximum Sales of Footwear Shop using Insertion Sort Algorithm							
Choose Information							
Shoe Type	Shoe Size	Week	Clear	Shoe Season	Gender	Month	Show
Kang...	s1	t3	sea1	Male	7/1/2...	3500	1
Eleph...	s2	t1	sea2	Male	7/1/2...	3000	1
Kang...	s1	t3	sea1	Male	7/1/2...	3500	2
Eleph...	s2	t1	sea2	Male	7/2/2...	3000	1
Kang...	s1	t3	sea1	Male	7/2/2...	3500	2
Jaiaco	s2	t1	sea1	Male	7/2/2...	7000	2
Jaiaco	s2	t1	sea1	Male	7/3/2...	7000	1
Kang...	s1	t3	sea1	Male	7/4/2...	3000	1
Aeros...	s1	t1	sea3	Male	7/5/2...	6000	3
Scholl	s1	t1	sea3	Male	7/7/2...	8500	1
Shwe...	s1	t1	sea3	Male	7/11/...	4000	1
Kang...	s1	t3	sea3	Male	7/12/...	3500	2
blink...	s1	t5	sea3	Male	7/13/...	20000	1
shutt...	s1	t1	sea3	Male	7/14/...	20000	1
shutt...	s1	t2	sea3	Male	7/14/...	20000	1
shutt...	s1	t2	sea3	Male	7/14/...	20000	1
NIKE	s1	t5	sea3	Male	7/14/...	20000	1
Whol...	s1	t5	sea3	Male	7/20/...	25000	1
Long...	s1	t5	sea3	Male	7/21/...	25000	1
Sheet...	s1	t5	sea3	Male	7/21/...	25000	1

Figure 3.18 Showing detail information for man shoe

If he/she chooses ‘All’ from every comboboxes and then clicks the ‘show’ label, the detailed information of the shoes is shown in the DataGridView. This process is shown in Figure 3.19.

Maximum Sales of Footwear Shop using Insertion Sort Algorithm							
Choose Information							
Shoe Type	Shoe Size	Week	Clear	Shoe Season	Gender	Month	Show
Laurel	s1	t2	sea3	Female	7/1/2...	3700	3
Kang...	s1	t3	sea1	Male	7/1/2...	3500	1
Eleph...	s2	t1	sea2	Male	7/1/2...	3000	1
Lily	s1	t3	sea3	Female	7/1/2...	12500	2
Lauel	s1	t2	sea3	Female	7/1/2...	3700	2
Kang...	s1	t3	sea1	Male	7/1/2...	3500	2
Eleph...	s2	t1	sea2	Male	7/2/2...	3000	1
Lily	s1	t3	sea3	Female	7/2/2...	12500	2
Laurel	s1	t2	sea3	Female	7/2/2...	3700	2
Kang...	s1	t3	sea1	Male	7/2/2...	3500	2
Lily	s1	t3	sea3	Female	7/2/2...	13500	3
Jaiaco	s2	t1	sea1	Male	7/2/2...	7000	2
Cherry	s1	t3	sea3	Female	7/3/2...	2500	2
Laurel	s1	t2	sea3	Female	7/3/2...	3700	2
Cherrv	s1	t3	sea3	Female	7/3/2...	2500	2
Jaiaco	s2	t1	sea1	Male	7/3/2...	7000	1
Kang...	s1	t3	sea1	Male	7/4/2...	3000	1
Yinnar	s1	t1	sea3	Female	7/4/2...	1500	1
Cherrv	s1	t1	sea3	Female	7/4/2...	2500	1
Laurel	s1	t1	sea3	Female	7/5/2...	3000	1

Figure 3.19 Showing detail information of shoe

3.3.4 Processing for Search Page

When the administrator clicks the 'Search' label, the next form is shown. In this form, the sale counts are added according to the same name and displayed in the list box. And then the data are sorted by using insertion sort algorithm and displayed the result with a message box. This form is shown in figure 3.20.

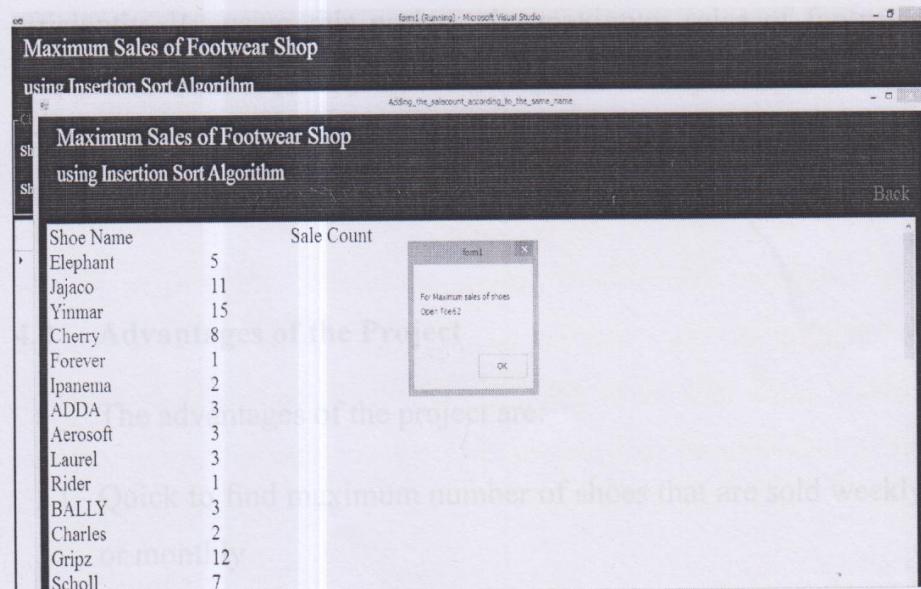


Figure 3.20 Maximum sales of the shoe

CHAPTER 4

CONCLUSION

This project has some limitations. This project is applied insertion sort algorithm. When developing this project, it is observed that this algorithm is not suitable with large amount of data.

4.1 Conclusion

This project is organized to mention the insertion sort algorithm. It is intended to use for the footwear shop effectively and efficiently. By using this project, the maximum sales of footwear shop can be found quickly and correctly. Moreover, it can save time consuming. Finally, the project displays the types of shoes which have the maximum sales by weekly or monthly.

4.2 Advantages of the Project

The advantages of the project are:

1. Quick to find maximum number of shoes that are sold weekly or monthly
2. Efficient to sort the number of shoes that are collected according to the desired classification

4.3 Limitations and Further Extension

Limitations:

This project has some limitations. This project is applied insertion sort algorithm. When developing this project, it is observed that the insertion sort algorithm is not suitable with large amount of data.

Further Extension:

This project selects only one classification of shoes (type, size, season, gender) and displays maximum sales. It can be extended to select shoe type, shoe size, season, gender simultaneously. And it shows the number of shoes that are sold weekly or monthly. Therefore, it can be extended to display the number of shoes yearly. This project computes maximum sales of one item such as shoes. It can be extended for another items (goods, fancies, cosmetics and so on). This project can be extended using quicksort algorithms.

References

1. ij Garcia, Ronald; Lumsdaine, Andrew (2005). "MultiArray: a C++ library for generic programming with arrays". *Software: Practice and Experience* 35(2): 159-188.doi:10.1002/spe.630. ISSN 0038-0644
2. ij Donald Knuth, *The Art of Computer Programming*
3. ij Black, Paul E. (13 November 2008). "array". *Dictionary of Algorithms and Data Structures*. National Institute of Standards and Technology.
4. ij Adamchik, Victor S. "Stacks and Queues." CMU, 2009
5. Ij Bjoern Andres; Ullrich Koethe; Thorben Kroeger, Hamprecht (2010). "Runtime-Flexible Multidimensional Arrays and Views for C++98 and C++0x".arXiv:1008.2909