



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

SECJ1023-08

PROGRAMMING TECHNIQUE 2
PROJECT REPORT

FITNESS CENTRE MANAGEMANT SYSTEM

LECTURER: DR. MOHAMAD ASHARI BIN ALIAS

GROUP MEMBER NAME	MATRIC NO
TEE JUN HONG	A20EC0160
TAY WEI JIAN	A20EC0159
TEOH YEE XIAN	A20EC0164

INTRODUCTION

Management system is the method by which a company manages the interconnected parts of its operations in order to attain its goals. These goals might be related to a variety of themes, such as quality of service, production performance, environmental performance, workplace health and safety, and so on. In this project, we will develop a management system in a fitness centre that will manage the information of its customers.

We will implement all the concepts we learned in this course, which is SECJ1023, Programming Technique 2 in our coding proses while conducting the development of the project. These concepts include inheritance, association, polymorphism, aggregation and composition. Not only that, but this program will also include the concept of array of objects, operator overload and also provide menu in it.

We choose this title because management system is a very general and common system to have in an organization or a company. We want to have an image of how to develop a system for a company using programming technique that we have learned therefore we can be more able to compete with others soon when we enter workplace.

In this project, we will use Dev C++ as our IDE to complete our project and C++ as our programming language for this project.

PROBLEM STATEMENT

The system that we will develop is a fitness centre management system for its customers. The management system goal is to store new customers' information into the system of the fitness centre. Each customer's basic information such as name, age and phone number will be recorded into the system. A unique customer ID will also be assigned to a new customer that come to the centre for the first time. After that, the customer will be able to select their trainer based on the trainer information displayed in the system. The selected trainer's information will be display and the trainer will be assigned to the customer and record into the system. The customer can also have the choice to not select a trainer and they will further proceed to the next part. Next, the customer will have a choice to decide whether he or she wanted to join the membership of this centre. If they choose to be a member of the fitness centre, they will need to choose the member package that they want which includes one week package, one month package and one year package. Then, they will get to choose a free program to join including yoga, zumba and cardio program and the selected program information will be displayed. Lastly, all the information above will be assigned to the customer and display including the membership start day and expired day. The information above will also be stored into the system. If the customer does not wish to be a member, the program will be terminated, display and store the information of the customer into the system.

OBJECTIVES

The objectives of this program are as the followings:

- I. Let customer enter his or her basic information.
- II. Let customer decide to have their own personal trainer or not.
- III. Display the list of information of all the trainer in the fitness centre.
- IV. Display the list of information of the customer selected trainer.
- V. Let customer decide to join the membership of the fitness centre or not.
- VI. Display the list of all the membership subscription pack and let customer choose his or her desired package.
- VII. Display the list of all the activity program available and let customer choose his or her desired program to join.
- VIII. Display the program chosen by the customer.
- IX. Display and store all the information above into the system.

PROJECTDESIGN

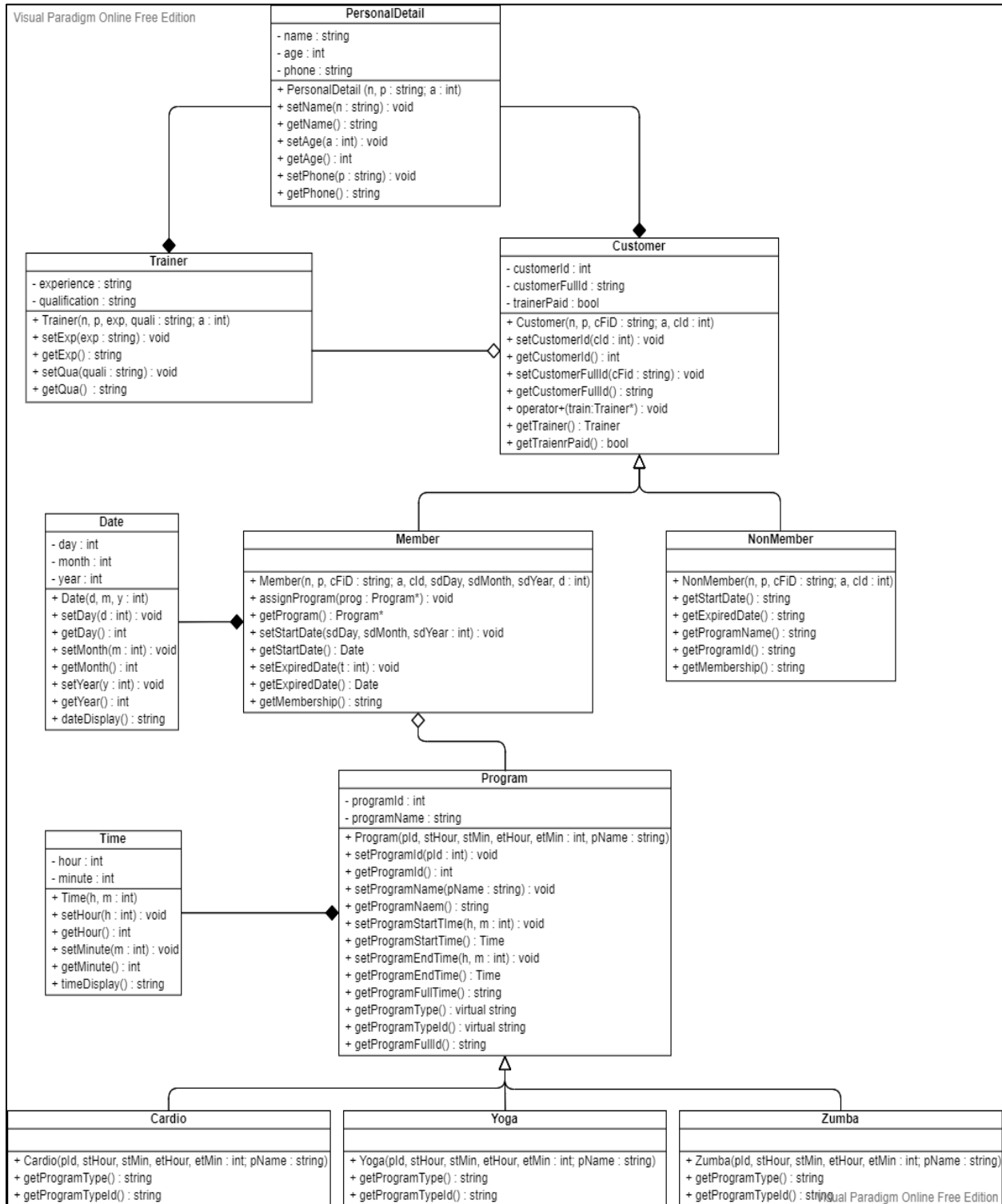


Figure 1: Fitness Centre Management System Class Diagram

PROJECT OUTPUT

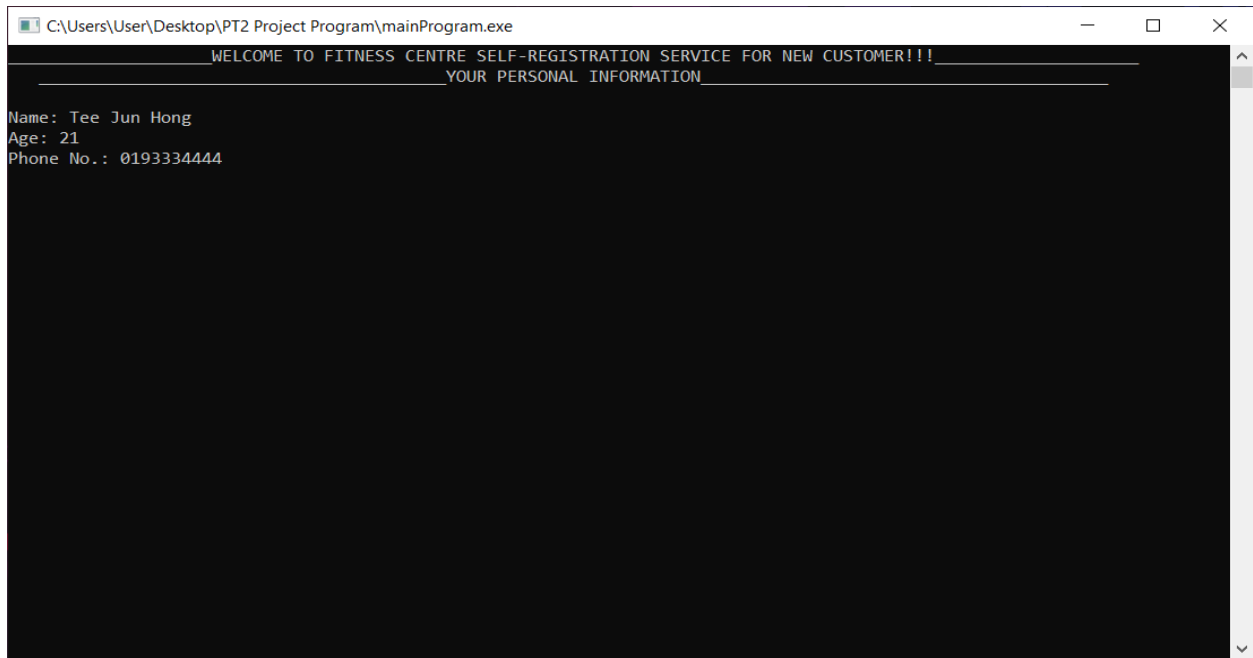


Figure 2: Personal Information Input Menu

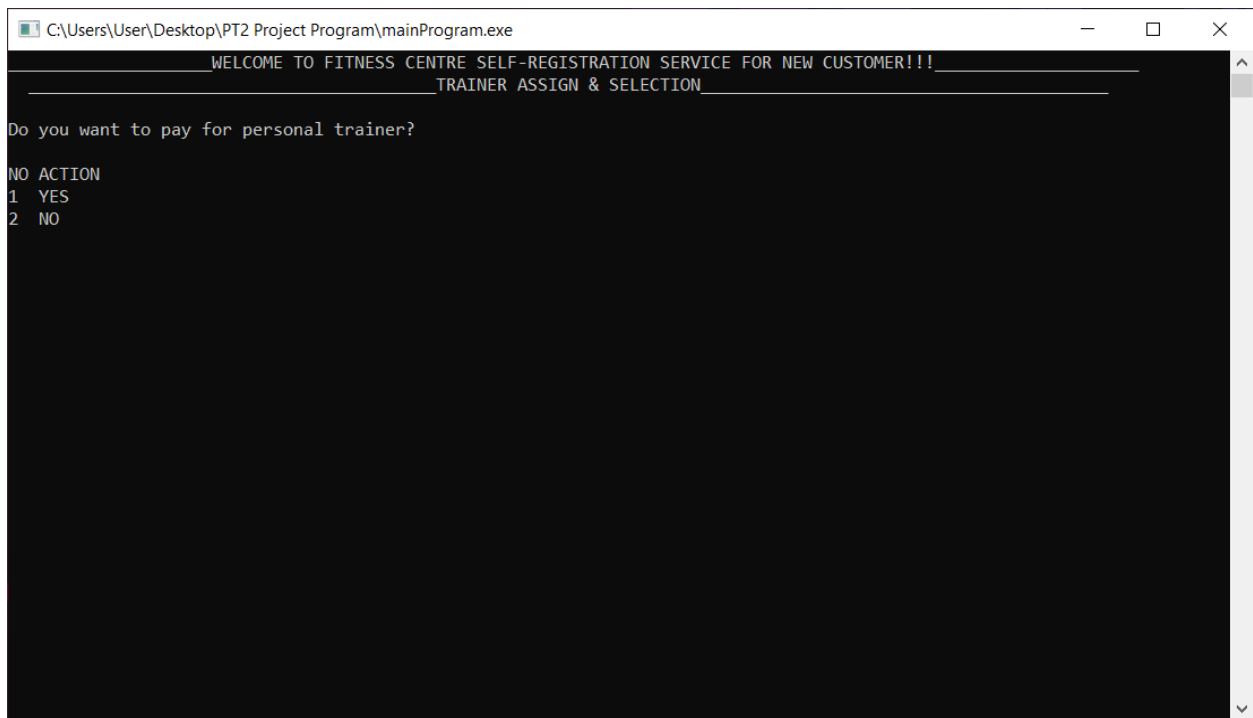


Figure 3: Pay for Trainer Selection Menu

```
C:\Users\User\Desktop\PT2 Project Program\mainProgram.exe

=====
Trainer Information:
=====
No   Name      Age  Phone      Experience      Qualification
1    Rafael     28   01139398211  16 Years Fitness Industry  Bachelor in Physical Education-Brazil
2    Alex       30   0193328112   3 Years Personal Training  ACE Certified
3    Garee      26   0172219123   6 Years Personal Training  ACE Certified
4    Helmy      21   0192221123   2 Years Personal Training  Bachelor in Physical Education-Malaysia
Please choose the available trainer you want from the list above...
```

Figure 4: Trainer Selection Menu

```
C:\Users\User\Desktop\PT2 Project Program\mainProgram.exe

=====
Trainer Information:
=====
No   Name      Age  Phone      Experience      Qualification
1    Rafael     28   01139398211  16 Years Fitness Industry  Bachelor in Physical Education-Brazil
2    Alex       30   0193328112   3 Years Personal Training  ACE Certified
3    Garee      26   0172219123   6 Years Personal Training  ACE Certified
4    Helmy      21   0192221123   2 Years Personal Training  Bachelor in Physical Education-Malaysia
Please choose the available trainer you want from the list above...
3

Your trainer's information:
Name: Garee
Age: 26
Phone No.: 0172219123
Experience: 6 Years Personal Training
Qualification: ACE Certified

You can contact your trainer for more information
Press any key to continue . . .
```

Figure 5: Display of Selected Trainer's Information

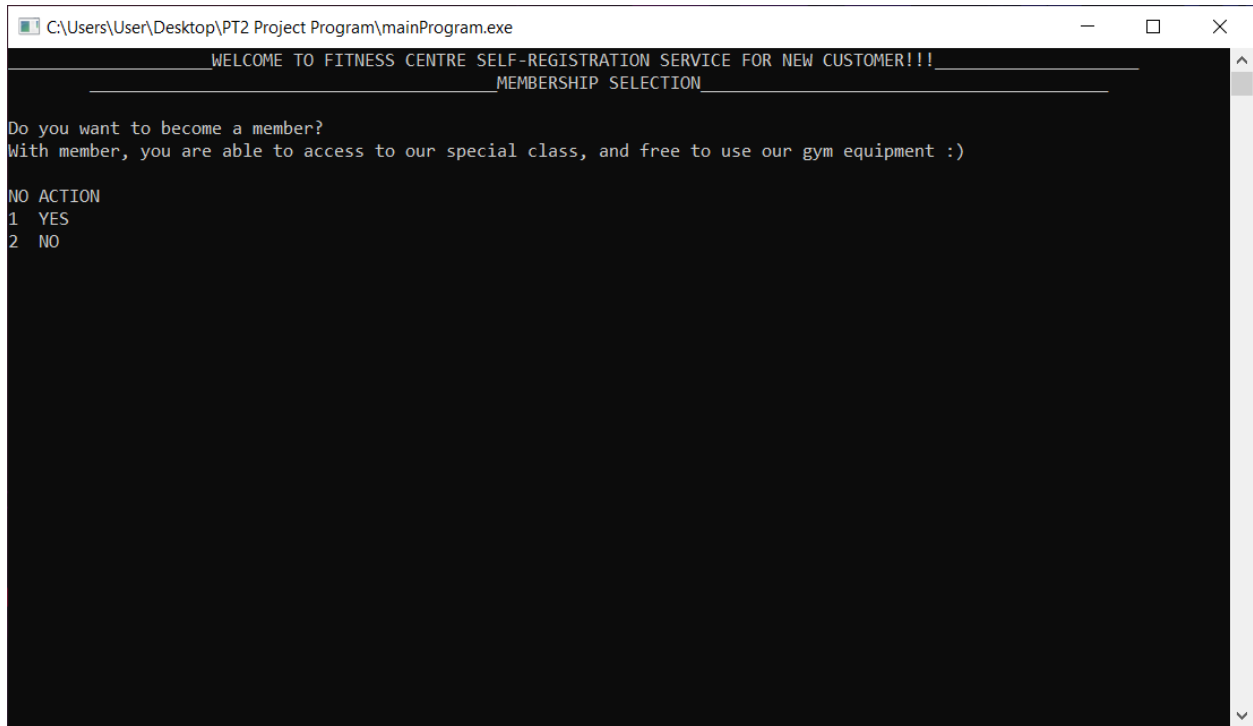


Figure 6: Membership Selection Menu

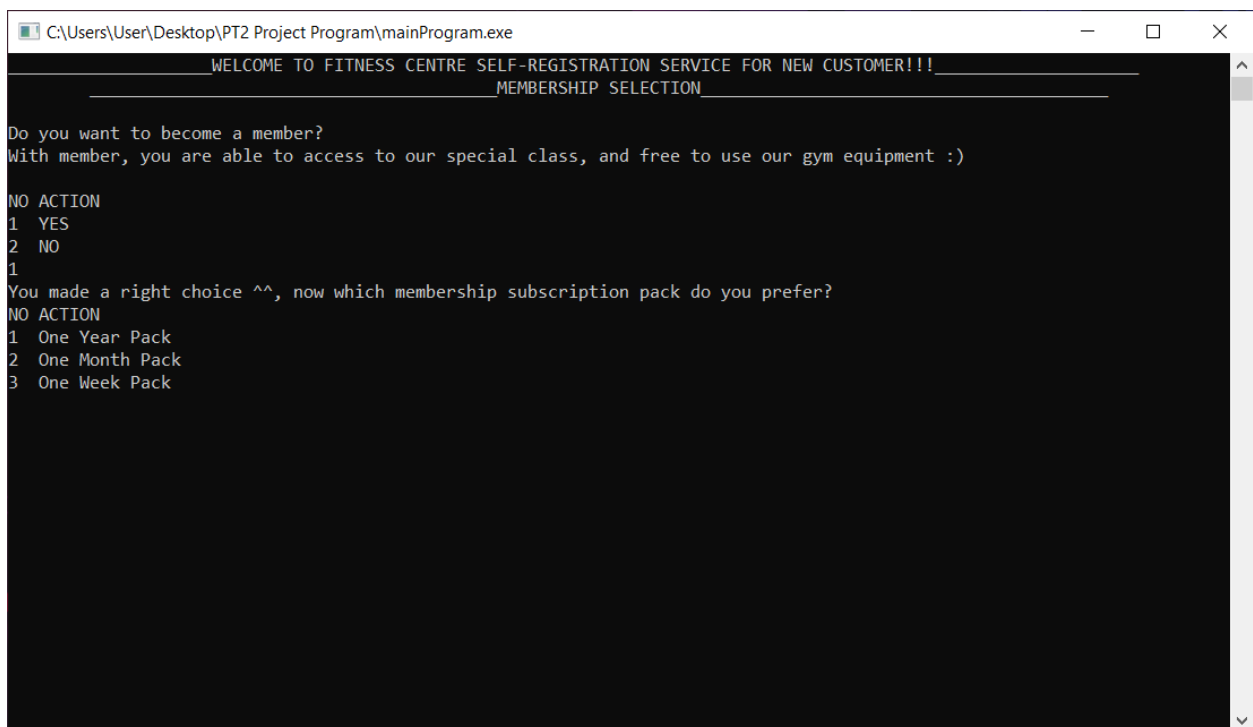


Figure 7: Membership Package Selection Menu


```
C:\Users\User\Desktop\PT2 Project Program\mainProgram.exe
WELCOME TO FITNESS CENTRE SELF-REGISTRATION SERVICE FOR NEW CUSTOMER!!!
MEMBERSHIP SELECTION

Do you want to become a member?
With member, you are able to access to our special class, and free to use our gym equipment :)

NO ACTION
1 YES
2 NO
1
You made a right choice ^^, now which membership subscription pack do you prefer?
NO ACTION
1 One Year Pack
2 One Month Pack
3 One Week Pack
1

=====
Program Available:
=====
No  Program Name      Program Id      Program Type      Time
1   Let's go YOGA      YGA1001         Yoga              15:30 - 18:30
2   Zumba fitness     ZBA1003         Zumba             08:00 - 10:00
3   Cardio everyday!   CRD1002         Cardio            12:30 - 14:30
4   Go Cardio!!!       CRD1003         Cardio            15:30 - 18:30
Please select the program you want...
```

Figure 8: Program Selection Menu

```
C:\Users\User\Desktop\PT2 Project Program\mainProgram.exe
With member, you are able to access to our special class, and free to use our gym equipment :)

NO ACTION
1 YES
2 NO
1
You made a right choice ^^, now which membership subscription pack do you prefer?
NO ACTION
1 One Year Pack
2 One Month Pack
3 One Week Pack
1

=====
Program Available:
=====
No  Program Name      Program Id      Program Type      Time
1   Let's go YOGA      YGA1001         Yoga              15:30 - 18:30
2   Zumba fitness     ZBA1003         Zumba             08:00 - 10:00
3   Cardio everyday!   CRD1002         Cardio            12:30 - 14:30
4   Go Cardio!!!       CRD1003         Cardio            15:30 - 18:30
Please select the program you want...
3

This is the information of the program you chosen...
Program Name: Cardio everyday!
Program ID: CRD1002
Program Type: Cardio
Program Start Time: 12:30
Program End Time: 14:30
Press any key to continue . . .
```

Figure 9: Display of Selected Program's Information

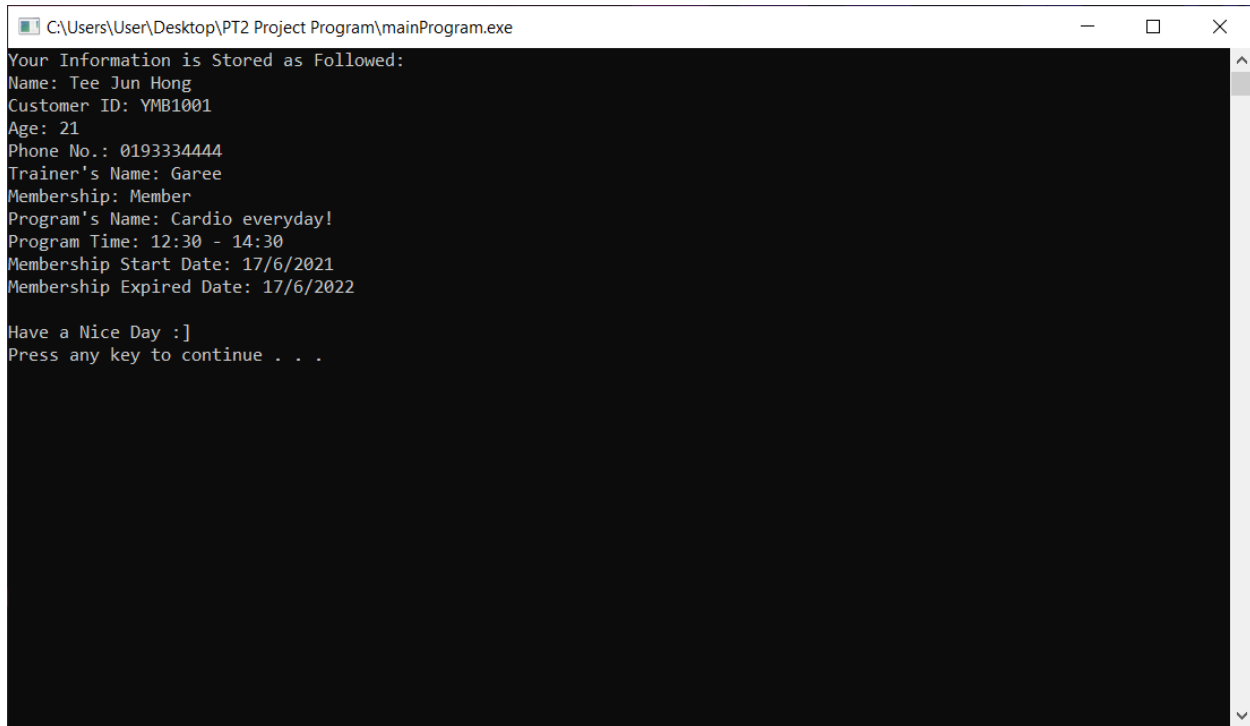


Figure 10: Final Information Display

Name	Date modified	Type	Size	Name	Date modified	Type	Size
Cardio.cpp	15/6/2021 7:55 PM	C++ Source File	1 KB	Cardio.cpp	15/6/2021 7:55 PM	C++ Source File	1 KB
Cardio.h	15/6/2021 7:52 PM	C Header File	1 KB	Cardio.h	15/6/2021 7:52 PM	C Header File	1 KB
Customer.cpp	17/6/2021 8:38 AM	C++ Source File	1 KB	Customer.cpp	17/6/2021 8:38 AM	C++ Source File	1 KB
Customer.h	17/6/2021 8:38 AM	C Header File	1 KB	Customer.h	17/6/2021 8:38 AM	C Header File	1 KB
Date.cpp	15/6/2021 7:25 PM	C++ Source File	1 KB	CustomerList.txt	17/6/2021 3:37 PM	Text Document	1 KB
Date.h	15/6/2021 2:45 PM	C Header File	1 KB	Date.cpp	15/6/2021 7:25 PM	C++ Source File	1 KB
LibraryCollection.h	15/6/2021 9:43 PM	C Header File	1 KB	Date.h	15/6/2021 2:45 PM	C Header File	1 KB
mainProgram.cpp	17/6/2021 3:26 PM	C++ Source File	16 KB	LibraryCollection.h	15/6/2021 9:43 PM	C Header File	1 KB
mainProgram.exe	17/6/2021 3:26 PM	Application	1,933 KB	ListNo.txt	17/6/2021 3:37 PM	Text Document	1 KB
Member.cpp	17/6/2021 9:41 AM	C++ Source File	3 KB	mainProgram.cpp	17/6/2021 3:26 PM	C++ Source File	16 KB
Member.h	17/6/2021 9:41 AM	C Header File	1 KB	mainProgram.exe	17/6/2021 3:31 PM	Application	1,933 KB
NonMember.cpp	16/6/2021 2:01 PM	C++ Source File	1 KB	Member.cpp	17/6/2021 9:41 AM	C++ Source File	3 KB
NonMember.h	16/6/2021 4:56 PM	C Header File	1 KB	Member.h	17/6/2021 9:41 AM	C Header File	1 KB
PersonalDetail.cpp	15/6/2021 7:20 PM	C++ Source File	1 KB	MID.txt	17/6/2021 3:37 PM	Text Document	1 KB
PersonalDetail.h	15/6/2021 12:54 PM	C Header File	1 KB	NMID.txt	17/6/2021 3:37 PM	Text Document	1 KB
Program.cpp	16/6/2021 5:19 PM	C++ Source File	2 KB	NonMember.cpp	16/6/2021 2:01 PM	C++ Source File	1 KB
Program.h	16/6/2021 5:18 PM	C Header File	2 KB	NonMember.h	16/6/2021 4:56 PM	C Header File	1 KB
Programs.txt	17/6/2021 2:20 PM	Text Document	1 KB	PersonalDetail.cpp	15/6/2021 7:20 PM	C++ Source File	1 KB
Time.cpp	16/6/2021 5:17 PM	C++ Source File	1 KB	PersonalDetail.h	15/6/2021 12:54 PM	C Header File	1 KB
Time.h	15/6/2021 7:45 PM	C Header File	1 KB	Program.cpp	16/6/2021 5:19 PM	C++ Source File	2 KB
Trainer.cpp	15/6/2021 7:21 PM	C++ Source File	1 KB	Program.h	16/6/2021 5:18 PM	C Header File	2 KB
Trainer.h	15/6/2021 12:54 PM	C Header File	1 KB	Programs.txt	17/6/2021 2:20 PM	Text Document	1 KB
Trainers.txt	17/6/2021 2:21 PM	Text Document	1 KB	Time.cpp	16/6/2021 5:17 PM	C++ Source File	1 KB
Yoga.cpp	15/6/2021 7:55 PM	C++ Source File	1 KB	Time.h	15/6/2021 7:45 PM	C Header File	1 KB
Yoga.h	15/6/2021 7:52 PM	C Header File	1 KB	Trainer.cpp	15/6/2021 7:21 PM	C++ Source File	1 KB
Zumba.cpp	15/6/2021 7:55 PM	C++ Source File	1 KB	Trainer.h	15/6/2021 12:54 PM	C Header File	1 KB
Zumba.h	15/6/2021 7:52 PM	C Header File	1 KB	Trainers.txt	17/6/2021 2:21 PM	Text Document	1 KB
				Yoga.cpp	15/6/2021 7:55 PM	C++ Source File	1 KB
				Yoga.h	15/6/2021 7:52 PM	C Header File	1 KB
				Zumba.cpp	15/6/2021 7:55 PM	C++ Source File	1 KB
				Zumba.h	15/6/2021 7:52 PM	C Header File	1 KB

Figure 11: Comparison of File's Folder Before (Left) and After (Right) Using the Program

Customer List

NO	NAME	ID	AGE	PHONE NO.	TRAINER	MEMBERSHIP	PROGRAM	PROGRAM TIME	MEMBERSHIP START DATE	MEMBERSHIP EXPIRED DATE
1	Tee Jun Hong	YMB1001	21	0193334444	Garee	Member	Cardio everyday!	12:30 - 14:30	17/6/2021	17/6/2022

Figure 12: Outputted Customer List

CONCLUSION

To conclude, the objective of the program is to display and store the customer information of a fitness centre management system. In the end, we were able to successfully develop the program and system that fully achieve its objective. We believed that this management system will provide proper information of its customer to help the decision-making process of the fitness centre. We were also able to implement all the requirement concept that we learned in this course in our C++ coding including inheritance, association, polymorphism, aggregation and composition. In this project we also improved our soft skill ability such as effective communication skills, teamworking ability, problem solving skills and much more. We are able to work in a team and do our part to produce the program. A lot of problems have occurred during the project, but we are able to discuss and come up with solutions to solve it. Lastly, guidance from our lecturer, Dr. Mohamad Ashari Bin Alias were also important for us when conducting the project. Therefore, it is hard to find words to express our gratitude to our lecturer who helped us a lot in completing the project.

APPENDICES

Link to Full Coding Folder: <https://drive.google.com/drive/folders/1Jdop-cAsnQarOud6sgsZsN14Bgp1nMrb?usp=sharing>