



MSc Computer Science

School of Computing, Engineering and Digital technologies

Object-oriented Programming

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ICA Element 1: Reflective Report

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Introduction

This reflective report is a part of ICA Element1, where a console-based application called “Asher’s Sports Consortium” was developed as a team. In this report I am going to share my reflection (using Gibb’s Style) on how I worked as a team leader, tester, and developer with the team. Also, I will share my thoughts on how this could be done better and how would I do these tasks and roles if I do it again.

Experience as a Tester:

Role

In Task1, the aim of the team was to make the skeleton application where the menu options were displayed in a loop until quit option was selected. My role in this task was to make sure that the code works for all the test cases including edge cases without getting an error.

What I did

Initially, I thought it was very easy task after reading the task description. As a tester I checked all the text and menu options in the console as per the element specifications, everything was good. I wrote a series of test cases and tested them.

Table 1: Test Cases for Task 1

Case type	Input	Output / Operation
Normal	1,2,3	Menu should be redisplayed.
	0	Program should be terminated.
Edge	-1,4,15	“Please select a valid option” should be displayed.
	One, two, ss	“Please select a valid option” should be displayed.

I tested the normal test cases at the start, they worked fine. Next, I checked for edge cases they didn’t work. I informed my team members in a meeting and developer took care of it.

Reflection

We thought we did very good and will get full marks for this task1, but the outcome was not as expected. Some mistakes we did are, firstly our team focused more on the coding part and getting output without any errors. Secondly, we didn't cross check our code with the points in marksheet that is given to us. Also, there was some misunderstanding from the marksheet about indentation. In addition, we didn't follow google style coding sheet.

As a tester it was my responsibility to go through the checklist in marksheet provided and If I have any misunderstanding, I should have clarified them with team members or tutor, So, that we would get full marks. If I must do task 1 again, I would have read all the materials in the week and informed developer to follow google style coding. Also, I would have carefully read and self-evaluate our task with the marksheet.

Experience as a Developer:

Role

My role in task 2 is developer. In this section I needed to write and develop code for Mock Application. We used a data class and an array list to manually enter data from a csv file. We also needed to add some operations to the menu such as view items, buy items, add items, and quit. In the end, we wanted to output the remaining stock to a text file called asc_output.txt.

What I did

To be honest, this was the toughest task in all the three coding tasks. I needed to create a data class, write methods for all the options in menu. As I have more experience in coding, I took my role as a developer. Firstly, I took all the suggestions from our lab tutor Jackie Baker and implemented them. I have read and practiced the google style coding. Next thing I did is to correct the indentations and added line space for every block of code.

```

public class SportsShopSystem {
    public static void main(String[] args){
        String option;
        Scanner input = new Scanner(System.in);
        System.out.println("ASHER SPORTS CONSORTIUM\n");
        do{ //repeat the steps until option is not equal to 0
            displayMenu();
            option = input.nextLine(); // Taking option as input from the user
            System.out.print("\n");
            // Chose switch case to display respective menu options
            switch (option){
                case "0":
                    System.out.println("***** Thank you for your visit *****");
                    break;
                case "1":
                    viewItems();
                    break;
            }
        }
    }
}

```

Figure 1: Before Changes

```

public class SportsShopSystem {
    public static void main(String[] args){
        String option;
        Scanner input = new Scanner(System.in);

        System.out.println("ASHER SPORTS CONSORTIUM\n");

        do{ //repeat the steps until option is not equal to 0
            displayMenu();
            option = input.nextLine();
            System.out.print("\n");

            switch (option){
                case "0":
                    System.out.println("***** Thank you for your visit *****");
                    break;
                case "1":
                    viewItems();
                    break;
            }
        }
    }
}

```

Figure 2: After changes

Thought process of Task 2

- At first, we used ArrayList as a parameter for view items, by items and add stock, then I modified it to a global variable and used it everywhere.
- Used the same UML diagram that is in the specification of Element 1
- We should check, if input is valid & redisplay menu for every method. To avoid repetition, I created 2 methods. They are takeValidInput() and displayOptions(menu).

Figure 3: Thought process.

I written the code and my tester pointed out to add code so that it works for those cases as well. There should be a prompt when we try to buy an item with no stock and the item count should not go to negative integers.

Reflection

The result was good, we didn't do the same mistakes as in task 1. We cross checked the task 2 marksheet twice and clarified some doubts with the tutor. However, the time management can be improved in this task. As we already know that we have a lot to do in the task we should have started it before two weeks instead of one, we would be well organized and wouldn't have completed the task in a hurry where we have only two days left before the deadline.

Experience as a Team Leader:

Role

I was the team leader for task 3. Our objective for task 3 is to create the prototype application which takes the input data from a file and gives the output to a text file. As a team lead, I need to make sure that the progress of task 3 goes well with out any interruptions and finishes on time.

What I did

To my mind, it was easy task because we just need to modify and add some code related to file handling. On the first meeting, I asked the team members about the task requirements and divided the work equally among us. We first discussed the design pattern and planned everything. I arranged regular meetings and gathered the progress. I asked them to hurry up if they were slow and corrected them if there are any mistakes.

Table 2: Schedule for Task 3

Before meeting 1	Reading black board resources should be completed
Before meeting 2	Load data method should be developed, and some test cases should be designed for this method.
Before meeting 3	Save data method and its test cases need to be completed.
In meeting 4	We will go through the code, test cases and self-evaluate with the mark sheet on black board.

Reflection

This task went well. I used my previous experience as tester, developer and guided them. I made sure that code was written in a simple way, understandable to everyone with the help of developer and tested every test case in the marksheet. The result was as I anticipated. Everything in this task was perfect. We co-ordinated well and used our experience from the past tasks. If I want to do the task again I would do it in the same way.

Team appraisal:

I would like to thank my team members Hemanth and Krishna for making this element successful. At first, I really didn't expect we will do so good. The performance and engagement are low at first, but they increased rapidly as we met and discussed about the tasks and responsibilities.

Krishna was team lead for task 1 and I would say he did a very good job there. He attended all the meetings and reported the task status regularly and collected the same from us. He has good communication skills by which he expressed his thoughts technically and collaborated easily.

Talking about Hemanth, he also played a vital role in this team's success, but there are some areas where he needs to improve. He hasn't attended all meetings and bit slow in doing the tasks. If he manages time efficiently everything would be best. Except these two he has done everything perfectly. He has sound knowledge about the topics and planned how to do tasks accordingly. To sum up, both members are good team players and done their tasks efficiently.

Conclusion:

To conclude, I have learned a lot from all the tasks in element 1. My performance and skills in working as a team vastly increased. I utilized all the source materials and references given by our tutor very well. One of the most important things that I gained from this element is, to plan and design everything before you start the work. It will greatly improve our time management. These learnings and experience will help me in my assignments and other activities.

References:

- A guide on how to use and write Google source code java.

<https://google.github.io/styleguide/javaguide.html>

- “Java How to program, Late Objects, Global Edition” – Reference book for all topics. (Conditional clauses, Classes, ArrayList and Methods)

<https://ebookcentral.proquest.com/lib/tees/reader.action?docID=5843853>

- Try catch exception blocks.

https://www.w3schools.com/java/java_try_catch.asp

- File handling.

<https://docs.oracle.com/javase/tutorial/essential/io/file.html>

- I also used videos from the blackboard as a reference.
- Reflective Writing

<https://libguides.tees.ac.uk/reflective>