Experiment Number - 6

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Section/Group: 20BCS_WM-703 / B
Semester: 5th
Date of Performance: 11th Oct, 2022
Subject Name: PBLJ LAB
Subject Code: 20CSP-321

1. Aim/Overview of the practical:

Playing cards during travel is a fun filled experience. For this game they wanted to collect all four unique symbols. Can you help these guys to collect unique symbols from a set of cards? Create Card class with attributes symbol and number. From our main method collect each card details (symbol and number) from the user. Collect all these cards in a set, since set is used to store unique values or objects. Once we collect all four different symbols display the first occurrence of card details in alphabetical order.

2. Hardware and Software Requirements :

PC with windows installed, IntelliJ IDEA (IDE).

3. Program Code:

```
import java.util.HashSet;

import java.util.Scanner;

import java.util.Set;

import java.util.TreeSet;
```

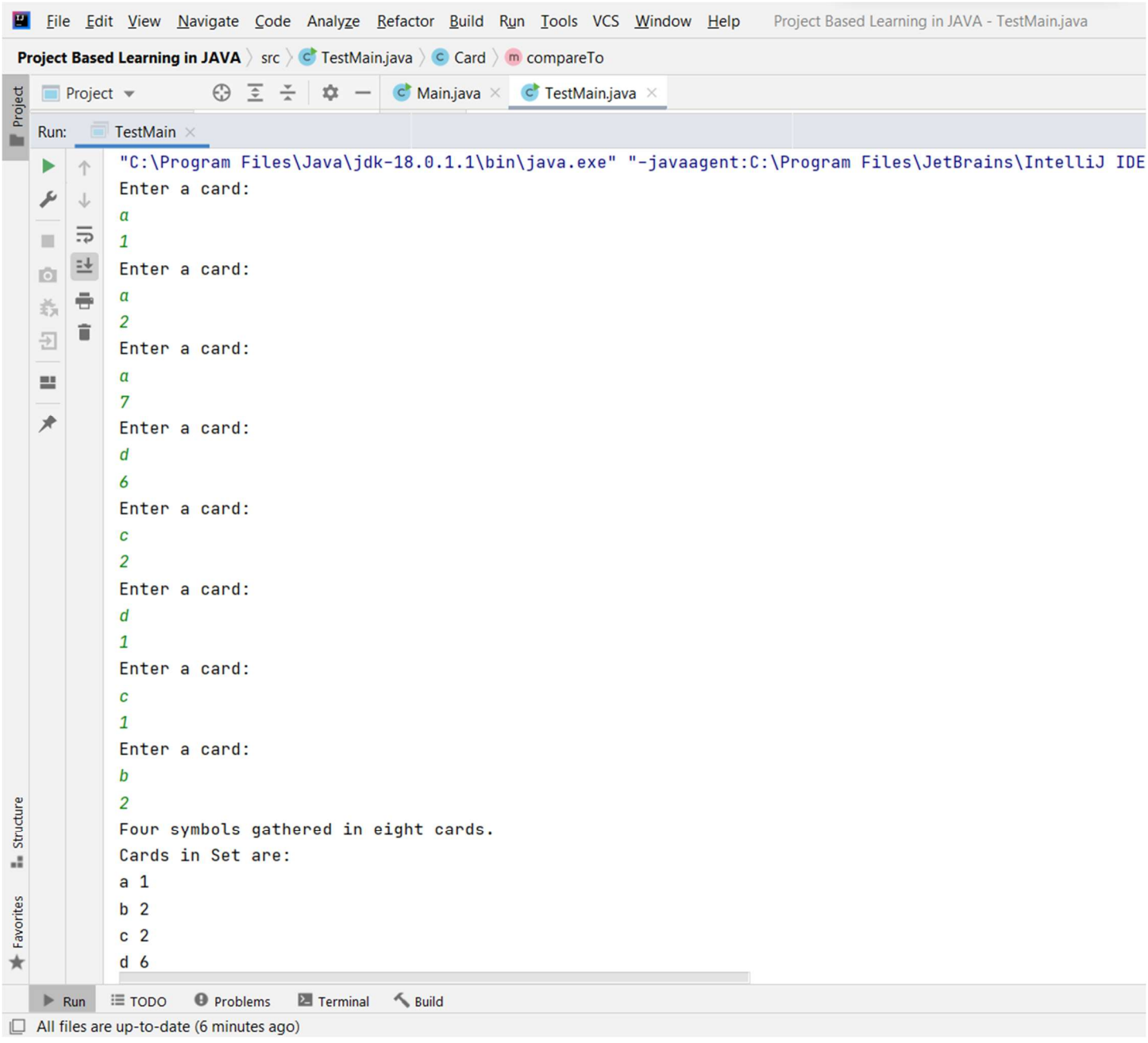
```
class Card implements Comparable<Card> {
    private char symbol;
    private int number;

    public Card() {}

    public Card(char symbol, int number) {
        super();
        this.symbol = symbol;
        this.number = number;
    }

    public char getSymbol() {
        return symbol;
    }

    public void setSymbol(char symbol) {
        this.symbol = symbol;
    }

    public int getNumber() {
        return number;
```

```
}

public void setNumber(int number) {
    this.number = number;
}

@Override
public String toString() {
    return "Card [symbol=" + symbol + ", number=" + number + "]";
}

@Override
public int compareTo(Card o) {
    if (this.symbol < o.symbol) return -1;
    else if (this.symbol > o.symbol) return 1;
    else return 1;
}

@Override
public int hashCode() {
    return String.valueOf(symbol).hashCode();
}
```

```
    @Override
    public boolean equals(Object obj){
        if (obj instanceof Card) {
            Card card = (Card) obj;
            return (card.symbol == this.symbol);
        } else {
            return false;
        }
    }
}

public class TestMain {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        Set<Card> set = new HashSet<>();

        for (int i = 0; i < 8; i++) {
            System.out.println("Enter a card:");
            Card card = new Card();

            card.setSymbol(sc.nextLine().charAt(0));
            card.setNumber(sc.nextInt());
```

```
            sc.nextLine();


            set.add(card);
        }
        System.out.println("Four symbols gathered in eight cards.");
        System.out.println("Cards in Set are:");



        for (Card card : set)
            System.out.println(card.getSymbol() + " " + card.getNumber());


        sc.close();
    }

}
```

4. Output :


File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
Project Based Learning in JAVA - TestMain.java
Project Based Learning in JAVA 〉 src 〉 TestMain.java 〉 Card 〉 compareTo
Project
Main.java
TestMain.java
Run: TestMain
"C:\Program Files\Java\jdk-18.0.1.1\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDE
Enter a card:
a
1
Enter a card:
a
2
Enter a card:
a
7
Enter a card:
d
6
Enter a card:
c
2
Enter a card:
d
1
Enter a card:
c
1
Enter a card:
b
2
Four symbols gathered in eight cards.
Cards in Set are:
a 1
b 2
c 2
d 6
Structure
Favorites
Run
TODO
Problems
Terminal
Build
All files are up-to-date (6 minutes ago)

Learning outcomes (What I have learnt):

1. I have learnt how to write program in JAVA.
2. I have learnt how to create classes and its objects in JAVA.
3. I have learnt how to take input from user using Scanner class.
4. I have learnt how to create Array in JAVA and traverse each elements using loop.
5. I have learnt how to create an application to Collect all playing cards in a set, since set is used to store unique values or objects. Once we collect all four different symbols display the first occurrence of card details in alphabetical order.

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			