1.Create an arraylist of user-defined data type Book. it should have:-
i)Name of the Book
ii)Author of the book
iii)year of publication of the book
iV)number of copies sold.
sort the array list based on the year of publication

```
package sba2;

import java.util.ArrayList;
import java.util.Collections;


class Book implements Comparable {
    String Name;
    String Author;
    Integer Year;
    int Copies;

    Book(String name, String author, int year, int copies) {
        this.Name = name;
        this.Author = author;
        this.Year = year;
        this.Copies = copies;
    }

    public int getYear() {
        return this.Year;
    }

    @Override
    public int compareTo(Object o) {
        Book b1 = (Book) o;
        return (this.Year.compareTo(b1.getYear()));
    }
}
public class Ques1 {
        public static void main(String[] args) {
                ArrayList<Book> BookList = new ArrayList<Book>();
                Book b1 = new Book("War and Peace", "Leo Tolstoy", 1869, 5061570);
                Book b2 = new Book("Harry Potter and the Deathly Hallows",
"J.K.Rowling", 2007, 4475152);
                Book b3 = new Book("A Tale of Two Cities", "Charles Dickens", 1859,
2000000);
                Book b4 = new Book("And Then There Were None", "Agatha Christie",
1939, 1000000);
                Book b5 = new Book("The Alchemist", "Paulo Coelho", 1988, 650000);
                Book b6 = new Book("Charlotte's Web", "E.B.White", 1952, 50000);

                BookList.add(b1);
                BookList.add(b2);
                BookList.add(b3);
                BookList.add(b4);
                BookList.add(b5);
                BookList.add(b6);
```

```
            System.out.println("-------------------------- Original Booklist ----
-------------------------");
            for (Book b : BookList) {
                System.out.println(b.Name + " -- " + b.Author + " -- " + b.Year +
" -- " + b.Copies);
            }
            System.out.println("-----------------------------------------------
-------------------------");

            Collections.sort(BookList, Collections.reverseOrder()); // Sorted
based on year (latest to oldest)

            System.out.println("-------------------------- Booklist Sorted by
year ------------------------------");
            for (Book b : BookList) {
                System.out.println(b.Name + " -- " + b.Author + " -- " + b.Year +
" -- " + b.Copies);
            }
            System.out.println("-----------------------------------------------
-------------------------");
        }
    }
```

//Output

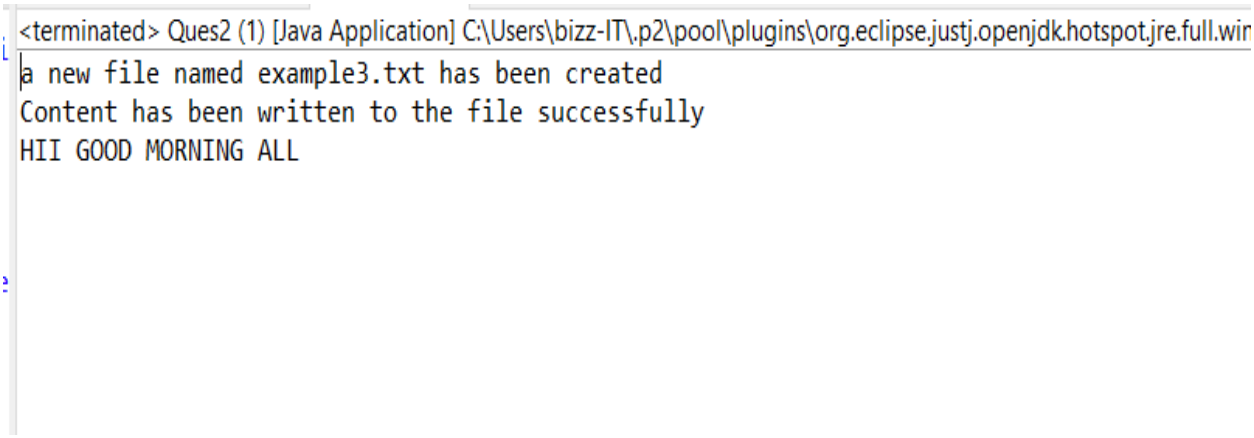
```
<terminated> Ques1 (1) [Java Application] C:\Users\bizz-IT\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win3
Harry Potter and the Deathly Hallows -- J.K.Rowling -- 2007 -- 4475152
A Tale of Two Cities -- Charles Dickens -- 1859 -- 2000000
And Then There Were None -- Agatha Christie -- 1939 -- 1000000
The Alchemist -- Paulo Coelho -- 1988 -- 650000
Charlotte's Web -- E.B.White -- 1952 -- 50000
--------------------------------------------------------------------------
-------------------------- Booklist Sorted by year ------------------------------
Harry Potter and the Deathly Hallows -- J.K.Rowling -- 2007 -- 4475152
The Alchemist -- Paulo Coelho -- 1988 -- 650000
Charlotte's Web -- E.B.White -- 1952 -- 50000
And Then There Were None -- Agatha Christie -- 1939 -- 1000000
War and Peace -- Leo Tolstoy -- 1869 -- 5061570
A Tale of Two Cities -- Charles Dickens -- 1859 -- 2000000
--------------------------------------------------------------------------
```

2.Write a program to create, write and read from a file

```
package sba2;
import java.io.File;
import java.io.FileNotFoundException;
import java.io.FileWriter;
import java.io.IOException;
import java.util.Scanner;

public class Ques2 {
	public static void main(String[] args) {

		try
				{
					File f1=new File("D:example3.txt");
					if(f1.createNewFile())
					{
						System.out.println("a new file named
"+f1.getName()+" has been created");
					}
					else
					{
						System.out.println("File already exists");
					}

				}
				catch(IOException e)
				{
					System.out.println("an unexpected error has
occured");
					System.out.println(e);
				}
			//Writing into file
			try
			{
				FileWriter obj1=new FileWriter("D:example3.txt");
				obj1.write("HII GOOD MORNING ALL");
				obj1.close();
				System.out.println("Content has been written to the file
successfully");
			}
			catch(IOException e)
			{
				System.out.println("Some unexpected error has occured");
				System.out.println(e);
			}
			//reading data
			try
			{
				File f1=new File("D:example3.txt");
				Scanner sc=new Scanner(f1);
				while(sc.hasNextLine())
				{
					String fileData=sc.nextLine();
					System.out.println(fileData);
```

```
                }
                sc.close();
        }
        catch(FileNotFoundException e)
        {

                System.out.println(e);
        }
    }}
```

//Output



3.Write a program to get the information about the file

```
package sba2;
import java.io.File;
import java.io.FileNotFoundException;
import java.util.Scanner;

public class Ques3 {
	public static void main(String[] args) throws FileNotFoundException {
		File f1=new File("D:example2.txt");

		if(f1.exists())
		{
			System.out.println("The file name is: "+f1.getName());
			System.out.println("Is the file Writeable: "+f1.canWrite());
			System.out.println("The absolute Path of the file is:
"+f1.getAbsolutePath());
			System.out.println("Is the file Readable: "+f1.canRead());
			System.out.println("The size of the file in bytes:
"+f1.length());
			//reading data
			Scanner sc=new Scanner(f1);
			while(sc.hasNextLine())
			{
				String fileData=sc.nextLine();
				System.out.println(fileData);
			}
			sc.close();
		}
		else
		{
			System.out.println("the file does not exist");
		}
	}

}
```

//Output

```
<terminated> Ques3 (2) [Java Application] C:\Users\bizz-IT\.p2\pool\plugins\or
The file name is: example2.txt
Is the file Writeable: true
The absolute Path of the file is: D:\\example2.txt
Is the file Readable: true
The size of the file in bytes: 20
HII GOOD MORNING ALL
```

4.Write a program Implement the filereader until the file ending character is "-1" and print all the data of the file

```
package sba2;
import java.io.FileNotFoundException;
import java.io.FileReader;

public class Ques4 {
public static void main(String[] args) {


		try{
			FileReader fr=new FileReader("D:example2.txt");

			int i;
			while((i=fr.read())!=-1)
			{

			System.out.print((char)i);
		}
		}
		catch(FileNotFoundException e)
		{
			System.out.println("File not found");
		}
		catch(Exception e)
		{
			System.out.println(e);
		}
	}
}
```

//Output

```
<terminated> Ques4 (1) [Java Application] C:\Users\bizz-IT\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.
HII GOOD MORNING ALL
```