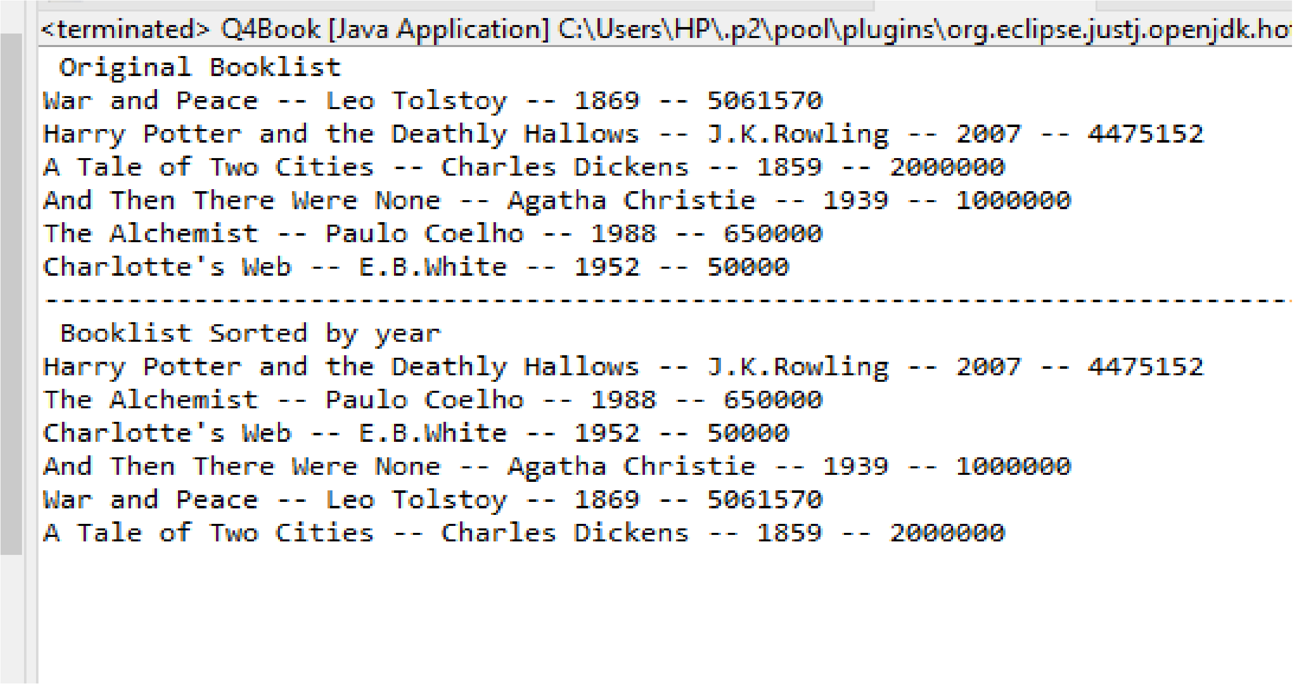
QUESTION1

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 assignment;

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 Q4Book {
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);
		}

	}

}
```

OUTPUT



```
<terminated> Q4Book [Java Application] C:\Users\HP\.p2\pool\plugins\org.eclipse.justj.openjdk.ho
 Original Booklist
War and Peace -- Leo Tolstoy -- 1869 -- 5061570
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
```

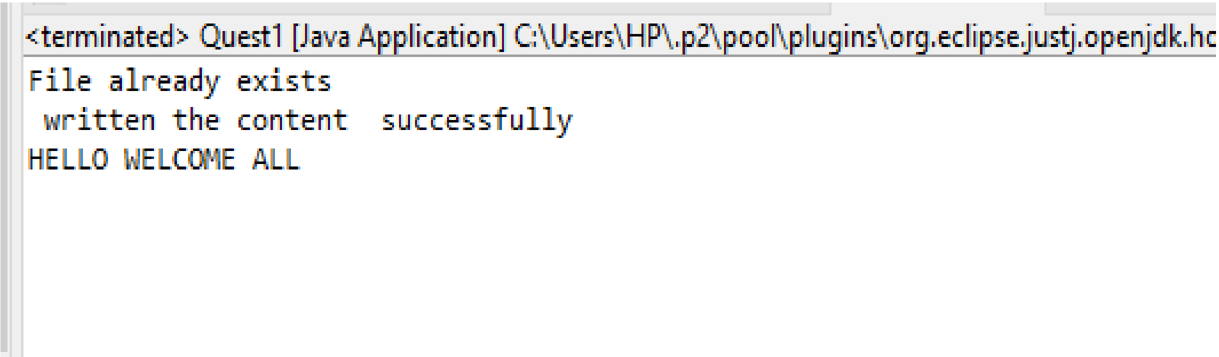
QUESTION 2

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

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

public class Quest2 {
	public static void main(String[] args) {

		try {
			File f1 = new File("D:example2.txt");
			if (f1.createNewFile()) {
				System.out.println(f1.getName() + " has been created");
			} else {
				System.out.println("File already exists");
			}

		} catch (IOException e) {
			System.out.println("error occured");
			System.out.println(e);
		}
		// Writing into file
		try {
			FileWriter obj1 = new FileWriter("D:example2.txt");
			obj1.write("HELLO WELCOME ALL");
			obj1.close();
			System.out.println(" written the content  successfully");
		} catch (IOException e) {
			System.out.println(" error has occured");
			System.out.println(e);
		}
		// reading data
		try {
			File f1 = new File("D:example2.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



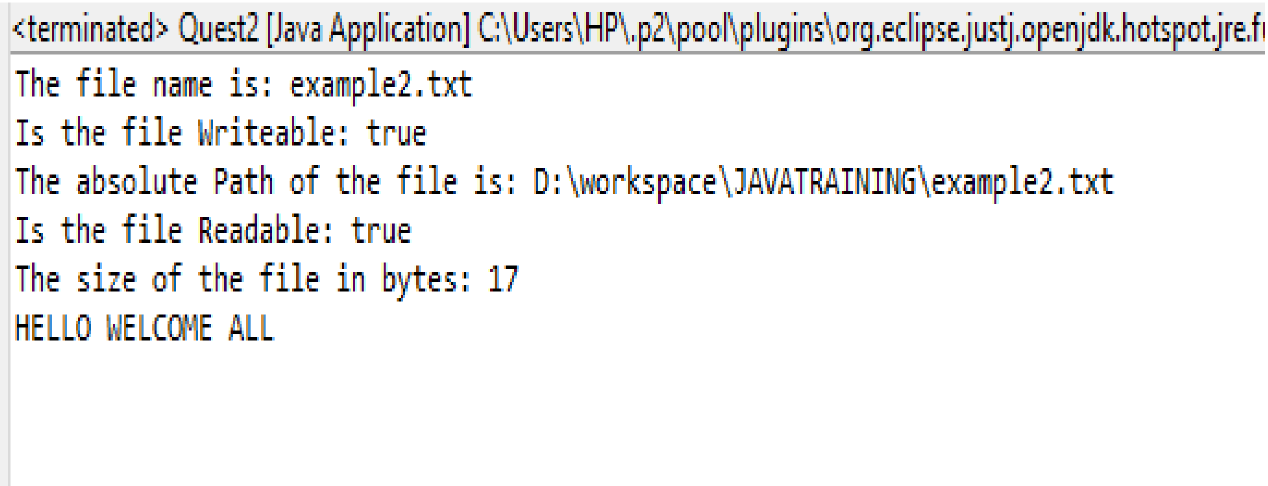
```
<terminated> Quest1 [Java Application] C:\Users\HP\.p2\pool\plugins\org.eclipse.justj.openjdk.hc
File already exists
 written the content  successfully
HELLO WELCOME ALL
```

QUESTION 3

Write a program to get the information about the file.

```
import java.io.File;
import java.io.FileNotFoundException;
import java.util.Scanner;
public class Quest3 {
        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



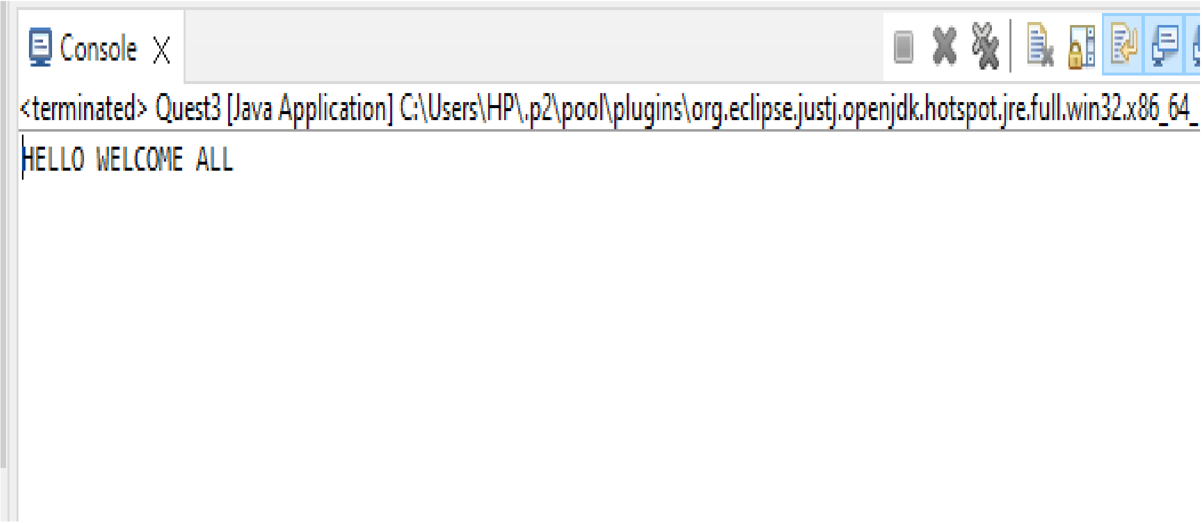
```
<terminated> Quest2 [Java Application] C:\Users\HP\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.f
The file name is: example2.txt
Is the file Writeable: true
The absolute Path of the file is: D:\workspace\JAVATRAINING\example2.txt
Is the file Readable: true
The size of the file in bytes: 17
HELLO WELCOME ALL
```

QUESTION 4

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

```
package assignment;
import java.io.FileReader;
import java.io.IOException;
public class Quest4 {
public static void main(String[] args) {
                try {
                        int i;
                        FileReader fr=new FileReader("D:example2.txt");
                        while((i=fr.read())!=-1) {
                                System.out.print((char) i);
                        }
                        fr.close();
                }
                catch(IOException e) {
                        System.out.println(e);
                }

        }

}
```

OUTPUT



```
<terminated> Quest3 [Java Application] C:\Users\HP\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_
HELLO WELCOME ALL
```