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.

Code:

```
package SBA2;

import java.util.ArrayList;

import java.util.Collections;

import java.util.Comparator;

class Pbook{

private String name,author;

private Integer cpy,year;

public Pbook(String name,String author,Integer cpy, Integer year) {

this.name=name;

this.author=author;

this.cpy=cpy;

this.year=year;

}

public Integer getYear() {

return year;

}

@Override

public String toString() {

return " date="+year+", name="+name+", author="+author+",cpy="+cpy+"\n";

}

}

public class Question1 {

public static void main(String[] args) {
```

```
ArrayList<Pbook> bk=new ArrayList<Pbook>();

bk.add(new Pbook("wings of fire","APJ ABDUL kALAM",400,2000));

bk.add(new Pbook("an i deniel","ashlin",120,1997));

bk.add(new Pbook("Tw States","Chethan Bhagat",500,2003));

bk.add(new Pbook("The Alchemist","Paulo Coelho",1500,1988));

System.out.println(" beforesorting:\n"+bk);

bk.sort((source,target) -> {return (source.getYear() -

target.getYear());});

bk.sort(Comparator.comparingInt(Pbook::getYear));

System.out.println(bk);

}

}
```

Output:

```
 beforesorting:
[ date=2000, name=wings of fire, author=APJ ABDUL kALAM,cpy=400
,  date=1997, name=an i deniel, author=ashlin,cpy=120
,  date=2003, name=Tw States, author=Chethan Bhagat,cpy=500
,  date=1988, name=The Alchemist, author=Paulo Coelho,cpy=1500
]
[ date=1988, name=The Alchemist, author=Paulo Coelho,cpy=1500
,  date=1997, name=an i deniel, author=ashlin,cpy=120
,  date=2000, name=wings of fire, author=APJ ABDUL kALAM,cpy=400
,  date=2003, name=Tw States, author=Chethan Bhagat,cpy=500
]
```

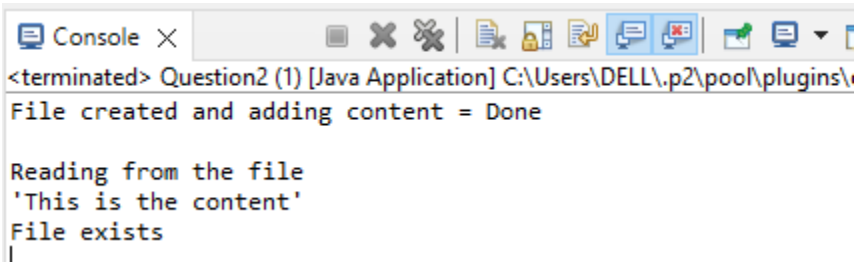
2. Write a program to create, write and read from a file

Code:

```
package SBA2;
import java.io.File;
import java.io.IOException;
import java.io.PrintWriter;
import java.io.FileReader;
import java.io.*;
public class Question2 {
	public static void main(String[] args) {
	try
	{
	File file=new File("Question2.txt");
	if(!file.exists())
```

```
{
file.createNewFile();
}
PrintWriter pw= new PrintWriter(file);
pw.println("'This is the content'");
pw.println("File exists");
pw.close();
System.out.println("File created and adding content = Done");
System.out.println();
System.out.println("Reading from the file");
try{
FileReader fr = new FileReader("Question2.txt"
);
int i;
while ((i = fr.read()) != -1)
System.out.print((char)i);
}
catch (IOException e) {
e.printStackTrace();
}
}
catch (IOException e) {
e.printStackTrace();
}
}
}
```

Output:



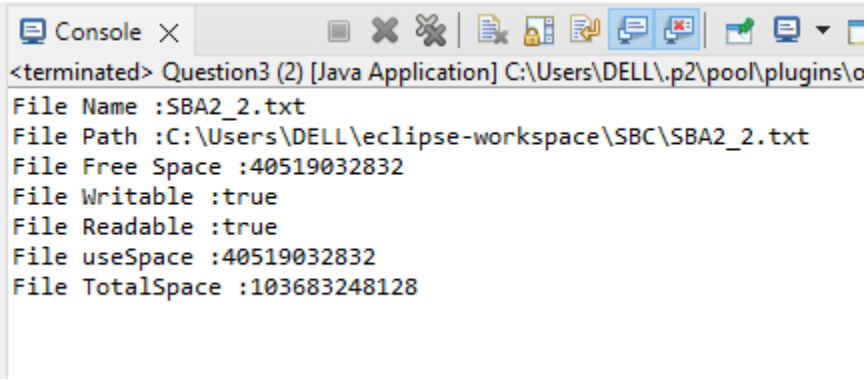
3. Write a program to get the information about the file.

Code:

```
import java.io.*;

public class Question3 {

public static void main(String[] args) {

File f=new File("SBA2_2.txt");

if(f.exists())

{
```

```
System.out.println("File Name :"+f.getName());
System.out.println("File Path :"+f.getAbsolutePath());
System.out.println("File Free Space :"+f.getFreeSpace());
System.out.println("File Writable :"+f.canRead());
System.out.println("File Readable :"+f.canWrite());
System.out.println("File useSpace :"+f.getUsableSpace());
System.out.println("File TotalSpace :"+f.getTotalSpace());
}
else
{
System.out.println("file doesn exists");
}
}
}
```

Output:



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

Code:

```
import java.io.*;
import java.io.FileReader;
public class Question4 {
public static void main(String[] args) throws IOException
```

```
{
try {
FileReader file=new FileReader("SBA2_2.txt");
int data=file.read();
while(data!=-1) {
System.out.print((char)data);
data=file.read();
}
file.close();
}
catch (FileNotFoundException e)
{
e.printStackTrace();
}
}
}
```

Output: