PG DAC–March 2023
C-DAC THIRUVANANTHAPURAM
JAVA- LAB 11

Q1. Write a java program to print details of a file:

I. Name of file
II. Path of file
III. Parent folder of a file
IV. Size of file
V. Check its file or folder
VI. Check file exist in the folder
VII. Check file is readable or not
VIII. Check file is writable or not

*FMain.java

```
1  package com.javaassignment11.main;
2  import java.io.File;
3
4  public class FMain {
5
6      public static void main(String[] args) {
7
8          File f1 = new File(
9                  "C:\\Users\\ASUS\\OneDrive\\Desktop\\exc_handle.txt");
10
11         System.out.println("name of file: " + f1.getName());
12
13             System.out.println("path of file:" +f1.getPath());
14             System.out.println("parent folder of file: " + f1.getParent());
15             System.out.println("size of file: "+ f1.length());
16             System.out.println("is f1 a file: " +f1.isFile());
17             System.out.println("is f1 a folder : " +f1.isDirectory());
18             System.out.println("does fi exist in your system: " + f1.exists());
19             System.out.println("is f1 readable : " +f1.canRead());
20             System.out.println("is f1 writable : " +f1.canWrite());
21
22     }
23 }
24
```

Console

```
<terminated> FMain [Java Application] D:\Eclipse\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.w
name of file: exc_handle.txt
path of file:C:\Users\ASUS\OneDrive\Desktop\exc_handle.
parent folder of file: C:\Users\ASUS\OneDrive\Desktop
size of file: 3089
is f1 a file: true
is f1 a folder : false
does fi exist in your system: true
is f1 readable : true
is f1 writable : true
```

Q2 Write a java program to Read the contents of a file using following methods

ReadContent.java × Main.java

```
1  package com.javaassignment112.main;
2  import java.io.BufferedReader;
3  import java.io.File;
4  import java.io.FileReader;
5  import java.io.IOException;
6
7  public class ReadContent {
8
9      public void readCharbyChar() {
10         File f1 = new File(
11                 "C:\\Users\\ASUS\\OneDrive\\Desktop\\file.txt");
12         try(FileReader reader = new FileReader(f1)) {
13             String str = " ";
14             int c= 0;
15             while((c = reader.read()) != -1) {
16                 str =str +(char)c;
17             }
18             System.out.println("data read from file: " + str);
19             }
20         catch(IOException exc) {
21             exc.printStackTrace();
22         }
23     }
```

ReadContent.java × Main.java

```
24     public void readLinebyLine() {
25         File f1 = new File(
26                 "C:\\Users\\ASUS\\OneDrive\\Desktop\\file.txt");
27         try(FileReader reader = new FileReader(f1);
28                 BufferedReader br = new BufferedReader(reader)) {
29             String str =" ";
30             while((str = br.readLine()) != null) {
31                 System.out.println(str);
32             }}
33             catch(IOException exc) {
34                 exc.printStackTrace();
35             }
36     }
37     public void readinBulk() {
38         File f1 = new File(
39                 "C:\\Users\\ASUS\\OneDrive\\Desktop\\file.txt");
40         try(FileReader reader = new FileReader(f1);
41                 BufferedReader br = new BufferedReader(reader)) {
42             char[] arr = new char[50];
43             int count =0;
44             System.out.println("data read from file: ");
45             while((count = br.read(arr)) > 0) {
46                 String str = new String(arr, 0,count);
47                 System.out.println(str);
48             }}
49             catch(IOException exc) {
50                 exc.printStackTrace();
51             }
52     }
53 }
54
```

I. Character by character

ReadContent.java | Main.java

```
1  package com.javaassignment112.main;
2
3  public class Main {
4
5      public static void main(String[] args) {
6          ReadContent obj = new ReadContent();
7          obj.readCharbyChar();
8
9      }
10 }
11
```

Console

```
<terminated> Main (7) [Java Application] D:\Eclipse\eclipse\plugins\org.eclips
data read from file:  I love everybody
```

II. Line by line

ReadContent.java | Main.java

```
1  package com.javaassignment112.main;
2
3  public class Main {
4
5      public static void main(String[] args) {
6          ReadContent obj = new ReadContent();
7          //obj.readCharbyChar();
8          obj.readLinebyLine();
9
10     }
11 }
12
```

Console

```
<terminated> Main (7) [Java Application
I love everybody
```

III. Read bulk

ReadContent.java | Main.java

```
1  package com.javaassignment112.main;
2
3  public class Main {
4
5      public static void main(String[] args) {
6          ReadContent obj = new ReadContent();
7          //obj.readCharbyChar();
8          //obj.readLinebyLine();
9          obj.readinBulk();
10
11     }
12 }
13
```

Console

```
<terminated> Main (7) [Java Application] D:\E
data read from file:
I love everybody
```

Q3. Write a java program to copy a file from one folder to another.

ReadContent.java | Main.java | CopyF.java | Main.java

```
1  package com.javaassignment113.main;
2  import java.io.FileInputStream;
3  import java.io.FileOutputStream;
4  import java.io.IOException;
5  import java.io.File;
6  import java.io.BufferedInputStream;
7  import java.io.BufferedOutputStream;
8
9  public class CopyF {
10
11     private File srcFile = new File (
12             "C:\\Users\\ASUS\\OneDrive\\Desktop\\file.txt");
13     private File destFile = new File ("C:\\Users\\ASUS\\OneDrive\\Desktop\\MainProg\\file.txt");
14
15             public void copydata() {
16                 try(FileInputStream fin =new FileInputStream(srcFile);
17                         BufferedInputStream bin =new BufferedInputStream(fin);
18                         FileOutputStream fout =new FileOutputStream(destFile);
19                         BufferedOutputStream bout =new BufferedOutputStream(fout)) {
20
21                     byte[] arr = new byte[1024];
22                     int count = 0;
23                     while((count = bin.read(arr)) > 0) {
24                         bout.write(arr, 0, count);
25                     }
26                 }
27                 catch(IOException exc) {
28                     exc.printStackTrace();
29                 }
30                 }
31     }
32
```

ReadContent.java | Main.java | CopyF.java | Main.java

```
1  package com.javaassignment113.main;
2  import java.util.Date;
3  public class Main {
4
5      public static void main(String[] args) {
6          CopyF obj = new CopyF();
7          Date d = new Date();
8          System.out.println("File copy started at: " +d);
9          obj.copydata();
10         d = new Date();
11         System.out.println("File copy ended at: " +d);
12     }
13
14 }
15
```

Console

```
<terminated> Main (8) [Java Application] D:\Eclipse\eclipse\plugins\org.eclipse.justj.openjdk.hotspot
File copy started at: Sat Apr 08 16:44:59 IST 2023
File copy ended at: Sat Apr 08 16:44:59 IST 2023
```

Q4. Write a program to serialize the Employee object with id, name and dept. Create 2 objects for it and store it in a file and then deserialize it and print the details.

Employee.java SerialDeserial.java Main.java

```
1  package com.javaassignment114.main;
2
3  public class Main {
4
5      public static void main(String[] args) {
6          SerialDeserial obj = new SerialDeserial();
7          obj.readData();
8          obj.writeData();
9      }
10 }
11
12
13
```

Console

```
<terminated> Main (9) [Java Application] D:\Eclipse\eclipse\plugins\
101: Monika
102: Ankit
101: Kunal
reading objects from file is over
Objects stored in a file
```

Employee.java SerialDeserial.java Main.java

```
1  package com.javaassignment114.main;
2  import java.io.Serializable;
3
4  class Employee implements Serializable {
5      private static final long serialVersionUID = 3662453965440404931L;
6          private int id;
7          private String name;
8          private String dept;
9
10         public Employee(int id, String name, String dept) {
11             this.id = id;
12             this.name = name;
13             this.dept = dept;
14         }
15
16         public int getId() {
17             return id;
18         }
19
20         public String getName() {
21             return name;
22         }
23
24         public String getDept() {
25             return dept;
26         }
27     }
28
```

Employee.java | SerialDeserial.java | Main.java

```java
package com.javaassignment114.main;
import java.io.EOFException;
import java.io.File;
import java.io.FileInputStream;
import java.io.FileOutputStream;
import java.io.IOException;
import java.io.ObjectInputStream;
import java.io.ObjectOutputStream;

public class SerialDeserial {
        private File file = new File("C:\\Users\\ASUS\\OneDrive\\Desktop\\mobobject.dat");

public void writeData() {
    try(FileOutputStream fout = new FileOutputStream(file);
        ObjectOutputStream out = new ObjectOutputStream(fout)){
        Employee e1 = new Employee(101, "Monika", "abc");
        Employee e2 = new Employee(102, "Ankit", "pqr");
        Employee e3 = new Employee(101, "Kunal", "xyz");
                |
        out.writeObject(e1);
        out.writeObject(e2);
        out.writeObject(e3);


    System.out.println("Objects stored in a file");
            }
         catch (IOException e) {
         e.printStackTrace(); }
         }
public void readData() {
         try (FileInputStream fin = new FileInputStream(file);
         ObjectInputStream oin = new ObjectInputStream(fin)) {
             while(true) {
             Employee emp = (Employee) oin.readObject();
             System.out.println(emp.getId() + ": " +
             emp.getName());  }
         }
             catch (EOFException exc) {
             System.out.println("reading objects from file is over");
             }
             catch (IOException | ClassNotFoundException exc) {
             exc.printStackTrace();
             }
    }

    }
```