

UE20CS352-00ADJ

Lab Assignment-7

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Section: F

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Summary:

Serialization:

It is the process by which we convert an object into a stream of bytes and store these bytes in file systems/databases or put them on the network to move from one location to another. To implement serialization and deserialization we use the `java.io.Serializable` interface in java. To get the file as an output stream we use `java.io.FileOutputStream`, and to accept the object output stream we use `java.io.ObjectOutputStream`.

Deserialization:

It is the reverse process of serialization. Deserialization consists of retrieving the objects from the byte stream.

HashMap:

A HashMap stores items in key/value pairs, and we can access them by an index of another type (such as a string). It is implemented using `java.util.HashMap` in java.

Code:

Serializing.java:

```
import java.io.FileOutputStream;
import java.io.IOException;
```

```

import java.io.ObjectOutputStream;
import java.util.HashMap;
import java.io.File;
import java.util.Scanner;

public class Serializing {
    public static void main(String[] args)
    {
        HashMap<String, String> config = new HashMap<>();

        try {
            File file = new File("config.cfg");
            if (!file.exists()) {
                file.createNewFile();
                FileOutputStream
myFileOutStream = new FileOutputStream(file);

                ObjectOutputStream
myObjectOutStream = new ObjectOutputStream(myFileOutStream);

                config.put("Path:", null);
                config.put("Version:",
null);

                config.put("System_Name:",
null);

myObjectOutStream.writeObject(config);
            }
            else {
                FileOutputStream
myFileOutStream = new FileOutputStream(file);

```

```

ObjectOutputStream
myObjectOutputStream = new ObjectOutputStream(myFileOutputStream);

String path;
String ver;
String sysname;
Scanner sc = new
Scanner(System.in);

System.out.println("Enter
the path:");

path = sc.next();
System.out.println("Enter
the version:");

ver = sc.next();
System.out.println("Enter
the system name:");

sysname = sc.next();

config.put("Path:", path);
config.put("Version:", ver);
config.put("System_Name:",
sysname);

//config.put("Path:",
"Vishwa/Documents/Vishwa_PES/Sem6/352_OOAD/PES2UG20CS389");
//config.put("Version:",
"17.0.6");

//config.put("System_Name:",
"Acer-Vishwa");

myObjectOutputStream.writeObject(config);
myObjectOutputStream.close();
myFileOutputStream.close();

```

```

        }
    }
    catch (IOException e) {
        e.printStackTrace();
    }
}
}

```

Deserializing.java:

```

import java.io.FileInputStream;
import java.io.IOException;
import java.io.ObjectInputStream;
import java.util.HashMap;
import java.util.Iterator;
import java.util.Map;
import java.util.Set;

public class Deserializing {
    public static void main(String[] args)
    {
        HashMap<String, String> newHashMap = null;

        try {
            FileInputStream fileInput = new
FileInputStream("config.cfg");

            ObjectInputStream objectInput = new
ObjectInputStream(fileInput);

            newHashMap =
(HashMap)objectInput.readObject();

```

```

        objectInput.close();
        fileInput.close();
    }

    catch (IOException obj1) {
        obj1.printStackTrace();
        return;
    }

    catch (ClassNotFoundException obj2) {
        System.out.println("Class not
found");

        obj2.printStackTrace();
        return;
    }

    Set set = newHashMap.entrySet();
    Iterator iterator = set.iterator();

    while (iterator.hasNext()) {
        Map.Entry entry =
(Map.Entry)iterator.next();

        System.out.print(entry.getKey() + "
");

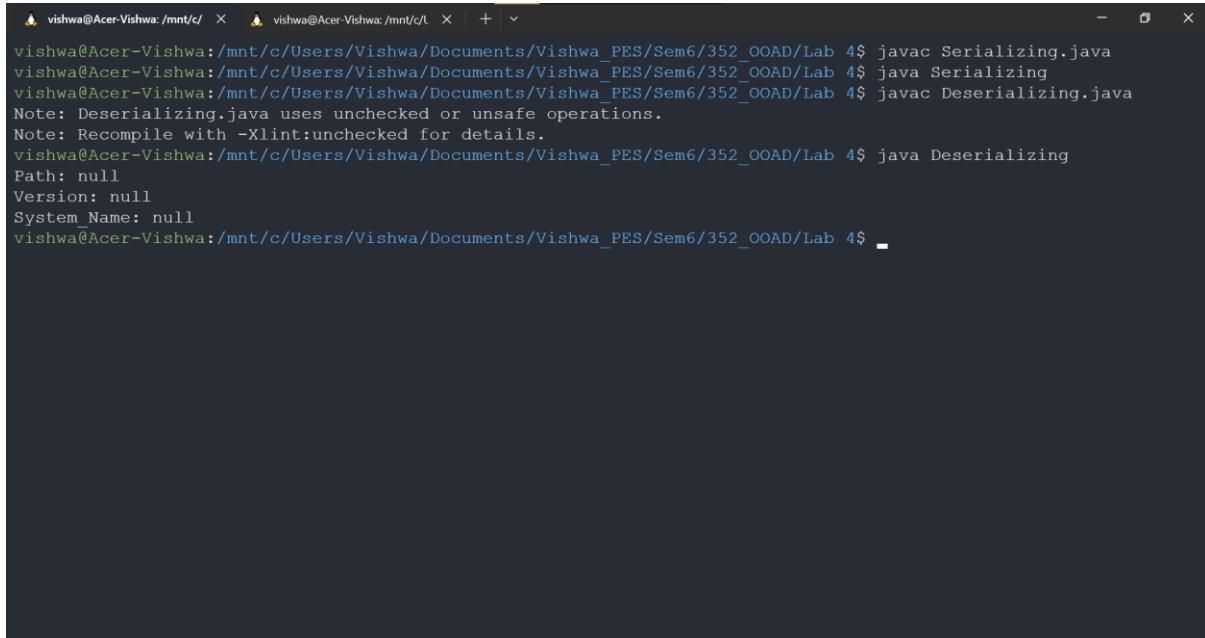
        System.out.println(entry.getValue());
    }
}

```

```
}
```

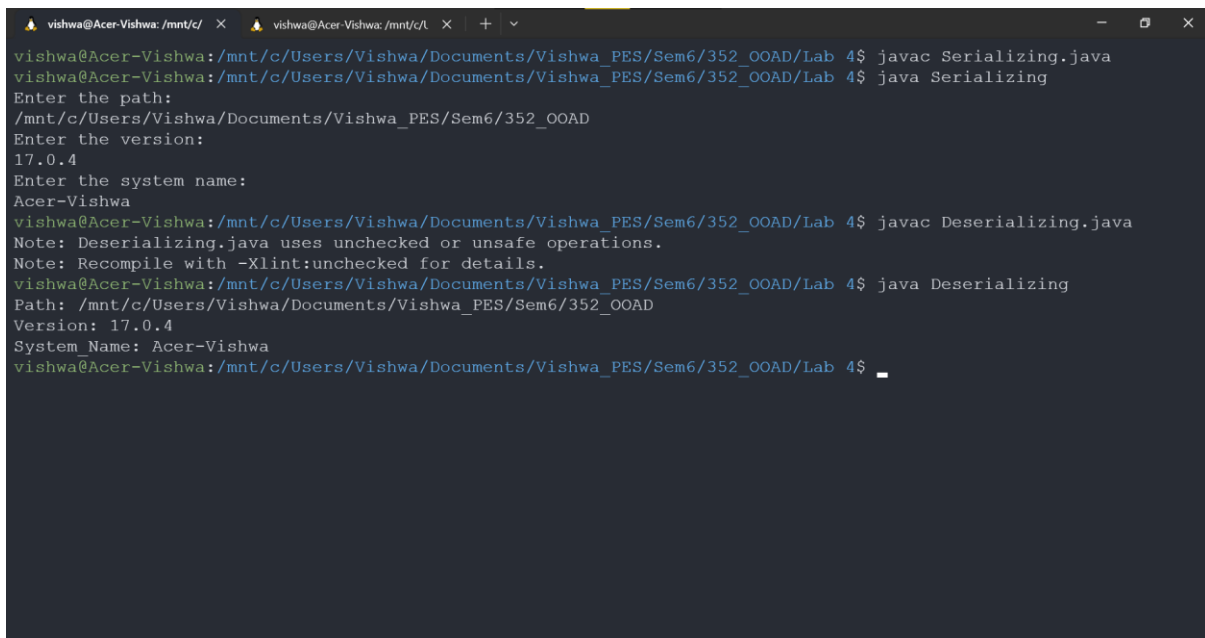
Screenshots:

1. When config.cfg exists:



```
vishwa@Acer-Vishwa: /mnt/c/ X vishwa@Acer-Vishwa: /mnt/c/L X + v
vishwa@Acer-Vishwa: /mnt/c/Users/Vishwa/Documents/Vishwa_PES/Sem6/352_OOAD/Lab 4$ javac Serializing.java
vishwa@Acer-Vishwa: /mnt/c/Users/Vishwa/Documents/Vishwa_PES/Sem6/352_OOAD/Lab 4$ java Serializing
vishwa@Acer-Vishwa: /mnt/c/Users/Vishwa/Documents/Vishwa_PES/Sem6/352_OOAD/Lab 4$ javac Deserializing.java
Note: Deserializing.java uses unchecked or unsafe operations.
Note: Recompile with -Xlint:unchecked for details.
vishwa@Acer-Vishwa: /mnt/c/Users/Vishwa/Documents/Vishwa_PES/Sem6/352_OOAD/Lab 4$ java Deserializing
Path: null
Version: null
System_Name: null
vishwa@Acer-Vishwa: /mnt/c/Users/Vishwa/Documents/Vishwa_PES/Sem6/352_OOAD/Lab 4$ _
```

2. When config.cfg exists:



```
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vishwa@Acer-Vishwa: /mnt/c/Users/Vishwa/Documents/Vishwa_PES/Sem6/352_OOAD/Lab 4$ javac Serializing.java
vishwa@Acer-Vishwa: /mnt/c/Users/Vishwa/Documents/Vishwa_PES/Sem6/352_OOAD/Lab 4$ java Serializing
Enter the path:
/mnt/c/Users/Vishwa/Documents/Vishwa_PES/Sem6/352_OOAD
Enter the version:
17.0.4
Enter the system name:
Acer-Vishwa
vishwa@Acer-Vishwa: /mnt/c/Users/Vishwa/Documents/Vishwa_PES/Sem6/352_OOAD/Lab 4$ javac Deserializing.java
Note: Deserializing.java uses unchecked or unsafe operations.
Note: Recompile with -Xlint:unchecked for details.
vishwa@Acer-Vishwa: /mnt/c/Users/Vishwa/Documents/Vishwa_PES/Sem6/352_OOAD/Lab 4$ java Deserializing
Path: /mnt/c/Users/Vishwa/Documents/Vishwa_PES/Sem6/352_OOAD
Version: 17.0.4
System_Name: Acer-Vishwa
vishwa@Acer-Vishwa: /mnt/c/Users/Vishwa/Documents/Vishwa_PES/Sem6/352_OOAD/Lab 4$ _
```