# IO Operations

# Assignment Questions

## Assignment Questions

1. **What is Input and Output Stream in Java?**

   **Ans :**

- **The input stream and output stream is used to transfer the data to the file in the form of byte code which can not be understandable by humans and as this we can privent data from hacking.**
- **There are the methods which are present for the input stream that are FileInputStream and the ObjectInputStream.**
- **There are also methods which are present for the OutputStream that are FileOutputStream and the ObjectOutputStream.**
- **It is used in the process of Serialization and Deserialization.**

2. **What are the methods of OutputStream?**

   **Ans :**

- **The Output Stream has the classes FileOutputStream, BufferedOutputStream and ObjectOutputStream.**
- **The method present in the Output Stream is the writeObject () method where we can pass the object reference of the class.**

3. **What is serialization in Java?**

   **Ans :**

- **Serialization is the process of writing the data in the file from the java program in the form of Byte Code.**
- **We use the Output Stream in the process of Serialization like**

**FileOutputStream and the ObjectOutputStream.**

- **The Serialization can be achieved by Implementing the class by the serializable Interface.**

4. **What is the Serializable interface in Java?**

   **Ans :**

- **The Serializable Interface is used at the time of serialization and Deserialization process.**

- **The Serialization Interface can be implemented by the class which data has to send in the file.**

- **The Serializable Interface is the marker interface so we do not give the implementation of this interface.**

5. **What is deserialization in Java?**

   **Ans :**

- **Deserialization is the process of reading the data which is in the form of byte codes in our program.**

- **The deserialization can be achieved by using the some classes present in the java.io package.**

- **The methods are FileInputStream, BufferedInputStream and the ObjectInputStream.**

- **The Deserialization can be achieved by implementing the close by the serializable Interface.**

6. **How is serialization achieved in Java?**

   **Ans :**

- **Serialization can be achieved by implementing the class by the Serializable Interface.**

- **The Serialization can be achieved by the class present in the java.io package like FileOutputStream, ObjectOutputStream.**

- **Example :-**

```
import java.io.*;

class Animal implements Serializable {
    private int age;
    private String name;
    private String colour;

    public Animal (int age, String name, String colour){
        this.age = age;
        this.name = name;
        this.colour = colour;
    }
}
public class Demo {
    public static void main (String[]args) throws Exception
    {
        Animal an = new Animal (10, "elephant", "black");
        File dir = new File("Demo");
        dir.mkdir();
        File f = new File (dir, "Assignment.txt");
        f.createNewFile();

        FileOutputStream fos = new FileOutputStream (f);
        BufferedOutputStream bos = new BufferedOutputStream(fos);
        ObjectOutputStream oos = new ObjectOutputStream (bos);

        oos.writeObject(an);

        oos.flush();

    }
}
```

7. **How is deserialization achieved in Java?**

   **Ans :**

- **The Deserialization can be achieved by implementing the class by the serializable Interface.**
- **The Serialization can be achieved by the class present in java.io package like**

**FileInputStream, BufferedInputStream, ObjectInputStream.**

- **Example :-**

```
import java.io.*;
class Animal implements Serializable{
    private int age;
    private String name;
    private String colour;

    public Animal (int age, String name, String colour){
        this.age = age;
        this.name = name;
        this.colour = colour;
    }
    public void disp (){
        System.out.println(age);
        System.out.println(name);
        System.out.println(colour);
    }
}
public class Launch {
    public static void main (String[]args) throws Exception
    {

        File dir = new File ("Demo");
        File f = new File (dir, "assignment.txt");

        FileInputStream fis = new FileInputStream (f);
        BufferedInputStream bis = new BufferedInputStream(fis);
        ObjectInputStream ois = new ObjectInputStream (bis);

        Animal a = (Animal) ois.readObject();

        a.disp();
    }
}
```

8. **How can you avoid certain member variables of class from getting Serialized?**

**Ans :**

- **We can able to avoid certain members of the class from getting serialized by the use of transient keyword**
- **We can apply the transient keyword to a specific member variable of class.**
- **So it can't participate in the process of serialization and deserialization.**

9. **What classes are available in the Java IO File Classes API?**

   **Ans :**

- **There are various inbuilt classes which are present inside the java.io package**
- **These methods are used to read and write the data from the file.**
- **The class present in the java.io package are File, FileReader, FileWriter, FileInputStream, FileOutputStream, ObjectInputStream, ObjectOutputStream, BufferedReader, BufferedWriter, BufferedInputStream, BufferedOutputStream.**

10. **What is Difference between Externalizable and Serialization interface.**

    **Ans :**

| Serializable | Externalizable |
|---|---|
| 1. Serializable is the marker interface in java. | 1. The Externalizable is not the marker interface in java. |
| 2. Serializable is used in the process of serialization. | 2. The Externalizable is used in the process of Serializable. |
| 3. The Serializable interface does not have any abstract method so we can't give body of it in the class. | 3. The Externalizable has the methods present inside it like writeExternal () and readExternal (). |
| 4. Serializable is not good in java. | 4. Externalization is a good thing in java. |