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CLASS	622-A

Experiment – 2.2 (Part – b) :

Title

Serialization and Deserialization of a Student Object.

Objective

To implement Java serialization to save a Student object to a file and later retrieve it through deserialization.

Task Description

Serialization helps persist object state and is useful for saving objects in files or transmitting over a network. This task includes:

- Creating a Student class with fields like studentID, name, and grade.
- Making the class implement the Serializable interface.
- Writing a program to:
    - Serialize the Student object using ObjectOutputStream.

- Save it to a file.
- Deserialize it using ObjectInputStream to reconstruct the object.
- Print the student’s data to confirm successful deserialization.

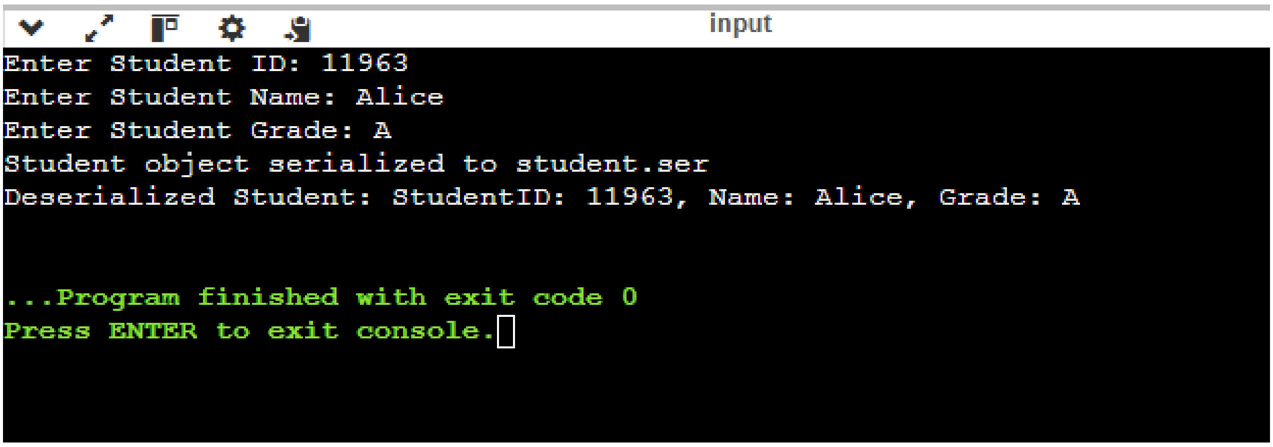
Code :

```
  import java.io.*;
import java.util.Scanner;


public class
SerializeDeserializeStuden
t {


   // Inner Student class
   static class Student
implements Serializable {
      private static final long
serialVersionUID = 1L;
      private int studentID;
      private String name;
      private String grade;


      public Student(int
studentID, String name,
String grade) {
         this.studentID =
studentID;
```

```
      this.name = name;
      this.grade = grade;
    }

    @Override
    public String toString()
{
      return "StudentID: "
+ studentID + ", Name: " +
name + ", Grade: " + grade;
    }
  }

  public static void
main(String[] args) {
    Scanner sc = new
Scanner(System.in);

    // Read student
details from user

System.out.print("Enter
Student ID: ");
    int id = sc.nextInt();
    sc.nextLine(); //
consume newline

System.out.print("Enter
Student Name: ");
    String name =
sc.nextLine();

System.out.print("Enter
Student Grade: ");
    String grade =
sc.nextLine();

    Student student =
new Student(id, name,
grade);

    // Serialize the object
    try
(ObjectOutputStream oos
= new
ObjectOutputStream(new
FileOutputStream("studen
t.ser"))) {
```

```
oos.writeObject(student);

System.out.println("Stude
nt object serialized to
student.ser");
    } catch (IOException e)
{
      e.printStackTrace();
    }

    // Deserialize the
object
    try
(ObjectInputStream ois =
new
ObjectInputStream(new
FileInputStream("student.
ser"))) {
      Student
deserializedStudent =
(Student) ois.readObject();

System.out.println("Deseri
alized     Student:     "     +
deserializedStudent);
        } catch (IOException |
ClassNotFoundException
e) {
            e.printStackTrace();
        }

        sc.close();
    }
}
```

Output :



```
Enter Student ID: 11963
Enter Student Name: Alice
Enter Student Grade: A
Student object serialized to student.ser
Deserialized Student: StudentID: 11963, Name: Alice, Grade: A


...Program finished with exit code 0
Press ENTER to exit console.
```