Object Oriented Analysis and Design with Java

UE19CS353

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Serialization

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Agenda

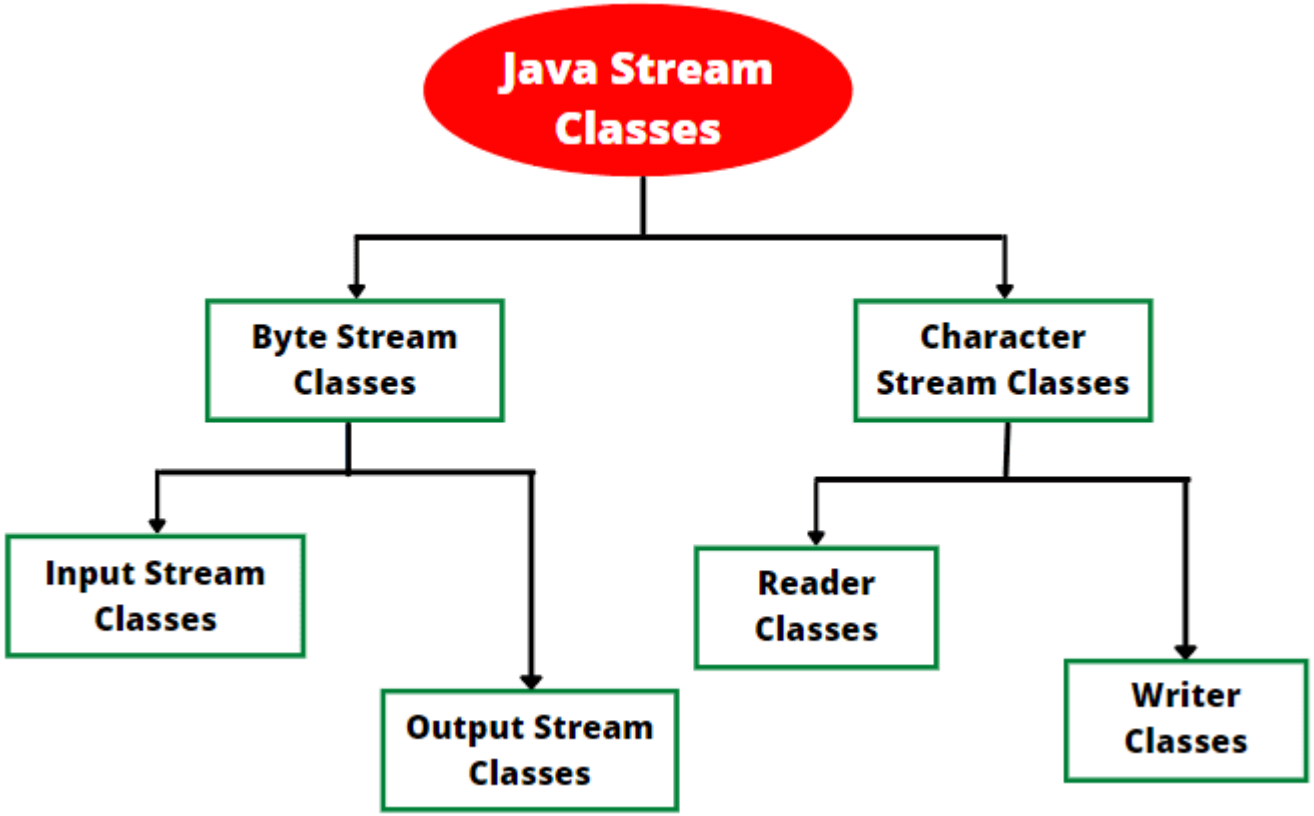
- Introduction
- References

Introduction

- A mechanism to transform an **object into a byte stream**. This object written into a byte stream does not contain the actual code.
- To do this, the class of that object needs to implement the interface **Serializable**.
- Uses **reflection** internally to scrape all the data from the object's fields that need to be serialized.
- Private and final fields are also included.
- If a field contains an object, that object is serialized recursively.
- Getters and setters are not used when serializing an object

Byte Stream

- Nothing but an ordered sequence of bytes
- We can **store video, audio, characters**, etc., by using ByteStream classes.
- These classes are part of the **java.io package**.



Serializable interface

- Is a marker interface (has no data member and method)
- It is used to "mark" Java classes so that the objects of these classes may get a certain capability
- The Serializable interface must be implemented by the class whose object needs to be persisted
- The String class and all the wrapper classes implement the java.io.Serializable interface by default.

Serialization

- The ObjectOutputStream class is used to write primitive data types, and Java objects to an OutputStream.
- Only objects that support the java.io.Serializable interface can be written to streams.

Constructor

1) public ObjectOutputStream(OutputStream out) throws IOException {}	It creates an ObjectOutputStream that writes to the specified OutputStream.

Important Methods

Method	Description
1) public final void writeObject(Object obj) throws IOException {}	It writes the specified object to the ObjectOutputStream.
2) public void flush() throws IOException {}	It flushes the current output stream.
3) public void close() throws IOException {}	It closes the current output stream.

De-Serialization

- An ObjectInputStream deserializes objects and primitive data written using an ObjectOutputStream.

Constructor

1) public ObjectInputStream(InputStream in) throws IOException {}	It creates an ObjectInputStream that reads from the specified InputStream.

Important Methods

Method	Description
1) public final Object readObject() throws IOException, ClassNotFoundException{}	It reads an object from the input stream.
2) public void close() throws IOException {}	It closes ObjectInputStream.

Coding part

- Create an array of 4 objects and write to a file using serialization concept.

Deserialize the contents of the file and display it on the terminal.

•Need to code this using ObjectOutputStream and inputstream

THANK YOU

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