# Experiment No. 8

**Aim:** Study and Implementation of basic Input/output operations using console and file.

## Problem Statement:

1. Write a Program to implement read, write and append operations using console and file.
2. Write a Program to demonstrate DataInputStream and DataOutputStream classes.
3. Write a Program to perform following operation:
   Create file Test.txt and write contents "Welcome to DYP ATU" into it and read the same contents from Test.txt file and display on console.

## Theory:

The java.io package contains nearly every class you might ever need to perform input and output (I/O) in Java. All these streams represent an input source and an output destination. The stream in the java.io package supports many data such as primitives, object, localized characters, etc. Stream
A stream can be defined as a sequence of data. There are two kinds of Streams:

**InputStream:** The InputStream is used to read data from a source.

**OutPutStream:** The OutputStream is used for writing data to a destination.

Java provides strong but flexible support for I/O related to files. Byte Streams Java byte streams are used to perform input and output of 8- bit bytes.

Similarly, Java provides the following three standard streams:

**Standard Input:** This is used to feed the data to user's program'

**Standard Output:** This is used to output the data produced by the user's program.

**Standard Error:** This is used to output the error data produced by the user's program.

### I/O streams

Java define two types of I/O streams:

-Byte stream

-Character stream

### Byte streams:

Used for handling input and output of bytes of 8-bit bytes. Especially helpful when working with files. There are many classes related to byte streams
The most frequently used classes:

-FileInputStream

-FileOutputStream

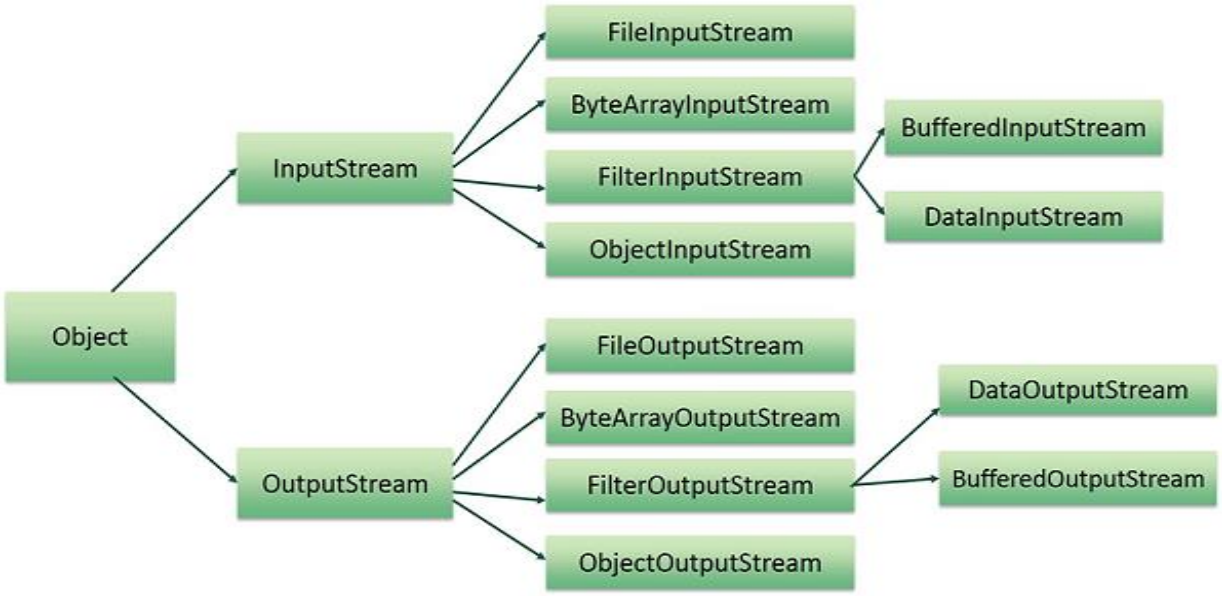
### Character streams:

- Designed for handling the input and output of characters. Used of 16-bit unicode. Many classes related to character streams.
- Most frequently used classes are-
  - FileReader
  - FileWriter
- Internally , FileReader uses FileInputStream and FileWriter uses FileOutputStream.
- FileReader reads two bytes at a time and FileWriter writes two bytes at a time.

**Character streams classes:**

- Two abstract classes:
    - -Reader
    - -Writer
- Two concrete subclasses:
    - -FileReader
    - -FileWriter

**I/O Stream Class Hierarchy:**

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## FileInputStream

- The FileInputStream class used to read the contents of a file as a stream of bytes.
- It is used for Inputting from a File.
- A file is opened for input by creating a FileInputStream object.
- FileInputStream class has a two different constructors
    1. FileInputStream(String *filePath)*
    2. FileInputStream(File *fileObj)*

## FileOutputStream

- The FileOutputStream class used to write a file as a stream of bytes.
- To open a file for output, create a FileOutputStream object.
- Four of its constructors-
    - FileOutputStream(String *filePath)*
    - FileOutputStream(File *fileObj)*
    - FileOutputStream(String *filePath, boolean append)*
    - FileOutputStream(File *fileObj, boolean append)*

## Conclusion:

Successfully performed read and write operations with console and file.