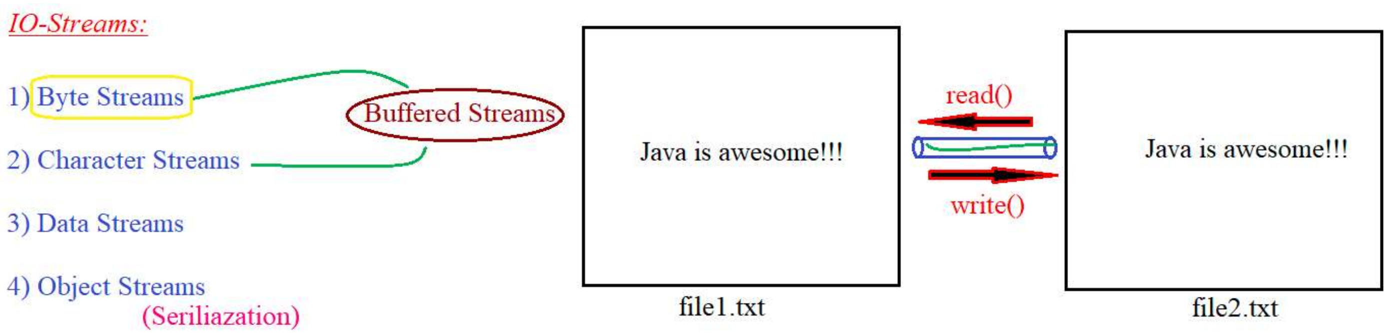
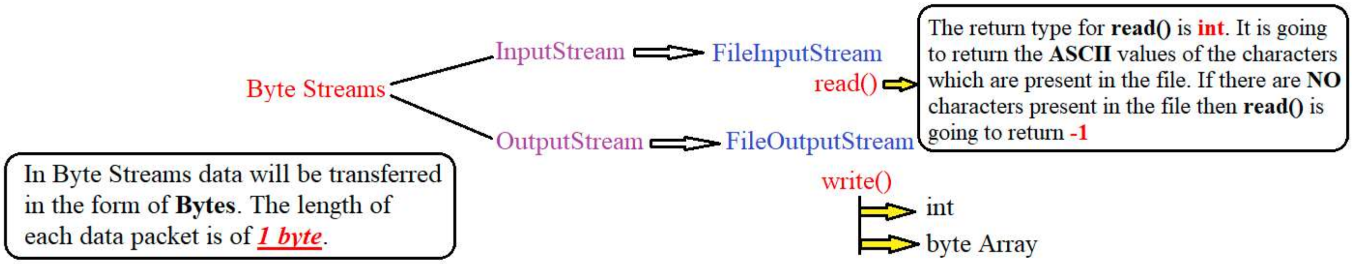


Stream means continuous uninterrupted flow.



The return type for **read()** is **int**. It is going to return the **ASCII** values of the characters which are present in the file. If there are **NO** characters present in the file then **read()** is going to return **-1**

In Byte Streams data will be transferred in the form of **Bytes**. The length of each data packet is of ***1 byte***.

In the above InputStream is an abstract class.

FileInputStream is the implementation class of the InputStream abstract class.

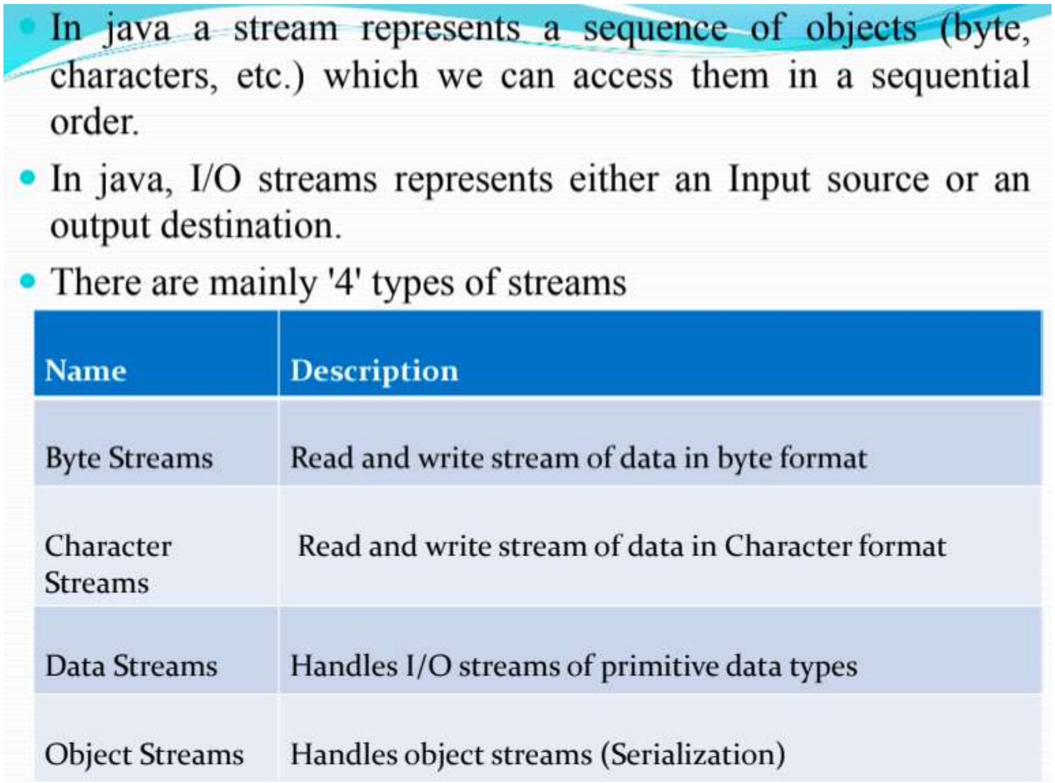
In the above OutputStream is an abstract class.

FileOutputStream is the implementation class of the outputStream abstract class.

We need to call the read-method until it returns -1

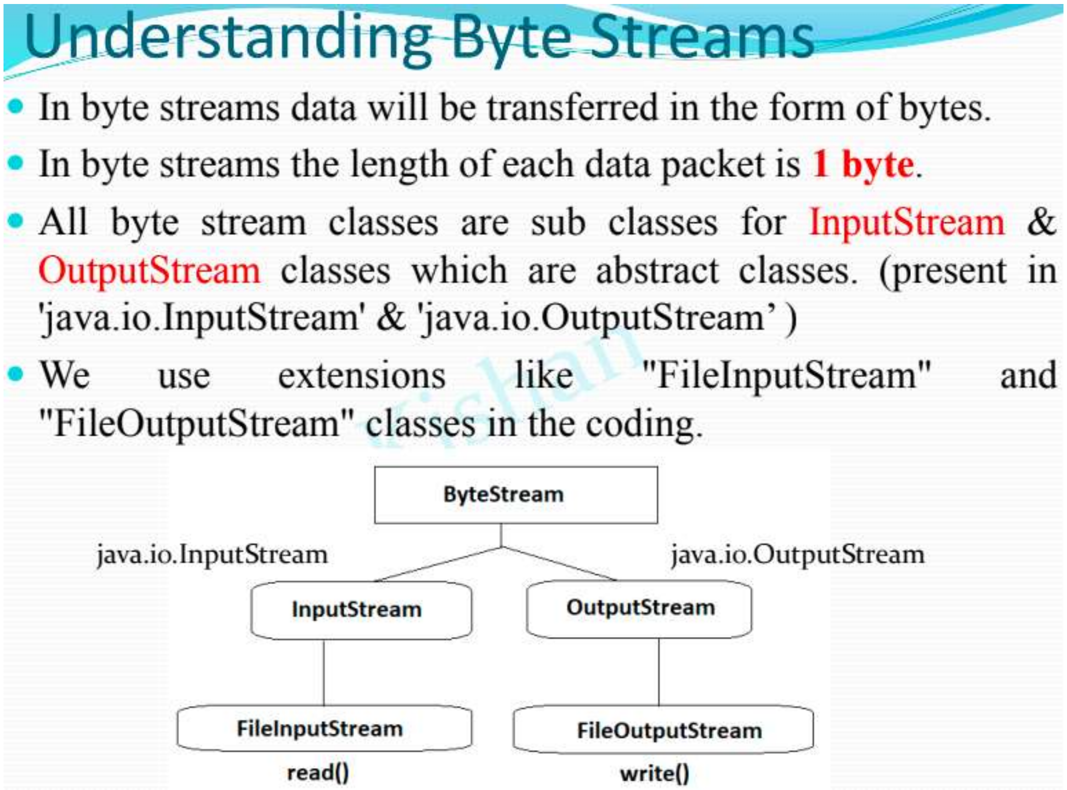
If call read method for one time it will return only the asci value of one character only and the cursor will move to the next line. So, for every character we need to call every time run().

Write() is a parameterized method having only one parameter. It can be either an int or byte Array.



- In java a stream represents a sequence of objects (byte, characters, etc.) which we can access them in a sequential order.
- In java, I/O streams represents either an Input source or an output destination.
- There are mainly '4' types of streams

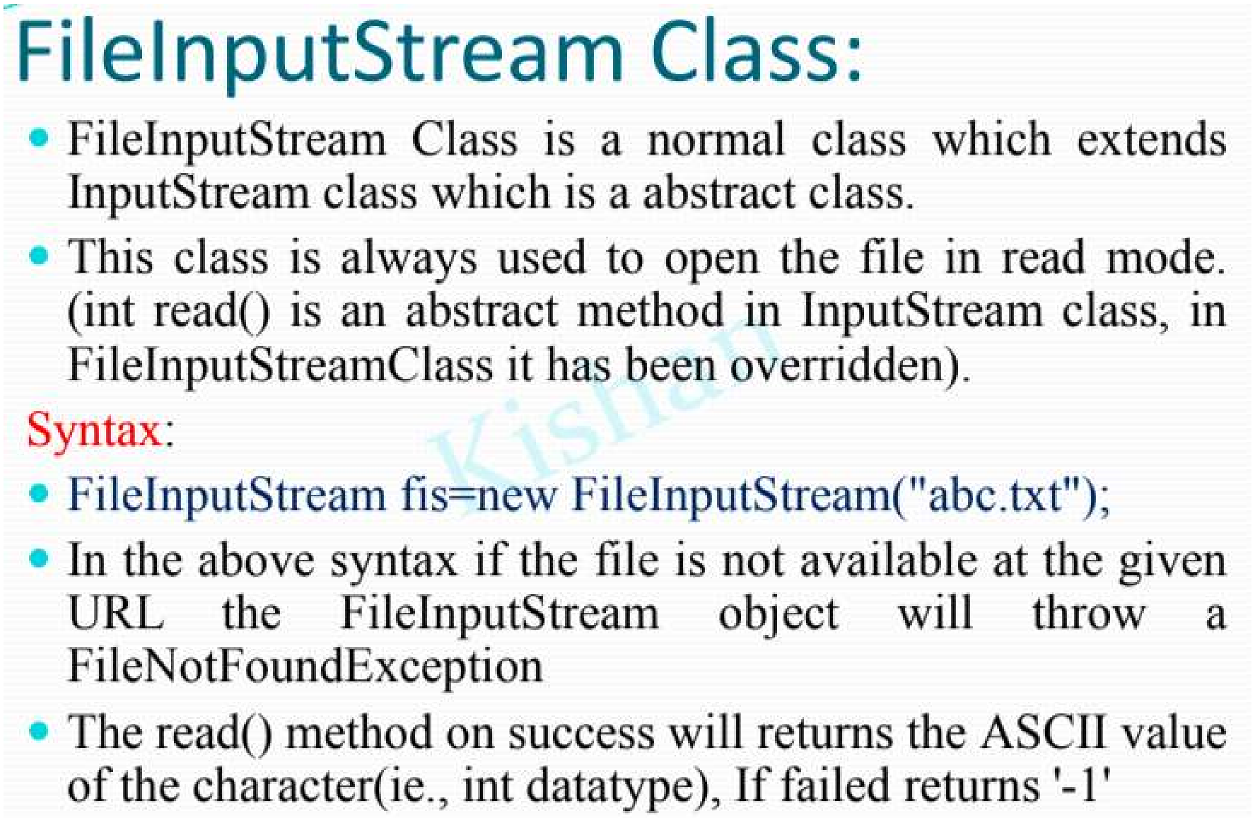
Name	Description
Byte Streams	Read and write stream of data in byte format
Character Streams	Read and write stream of data in Character format
Data Streams	Handles I/O streams of primitive data types
Object Streams	Handles object streams (Serialization)



Understanding Byte Streams

- In byte streams data will be transferred in the form of bytes.
- In byte streams the length of each data packet is **1 byte**.
- All byte stream classes are sub classes for InputStream & OutputStream classes which are abstract classes. (present in 'java.io.InputStream' & 'java.io.OutputStream')
- We use extensions like "FileInputStream" and "FileOutputStream" classes in the coding.

ByteStream
java.io.InputStream
java.io.OutputStream
InputStream
OutputStream
FileInputStream
FileOutputStream
read()
write()

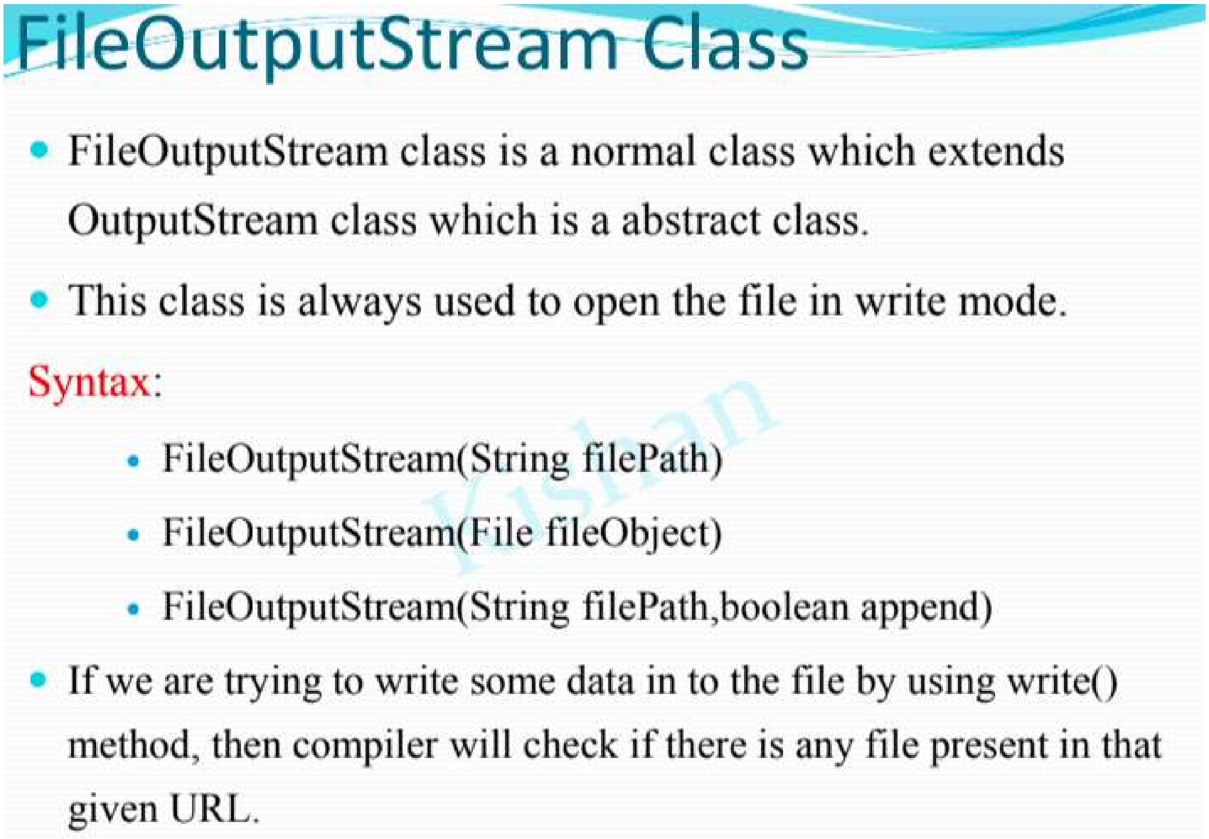


FileInputStream Class:

- FileInputStream Class is a normal class which extends InputStream class which is a abstract class.
- This class is always used to open the file in read mode. (int read() is an abstract method in InputStream class, in FileInputStreamClass it has been overridden).

Syntax:

- FileInputStream fis=new FileInputStream("abc.txt");
- In the above syntax if the file is not available at the given URL the FileInputStream object will throw a FileNotFoundException
- The read() method on success will returns the ASCII value of the character(ie., int datatype), If failed returns '-1'



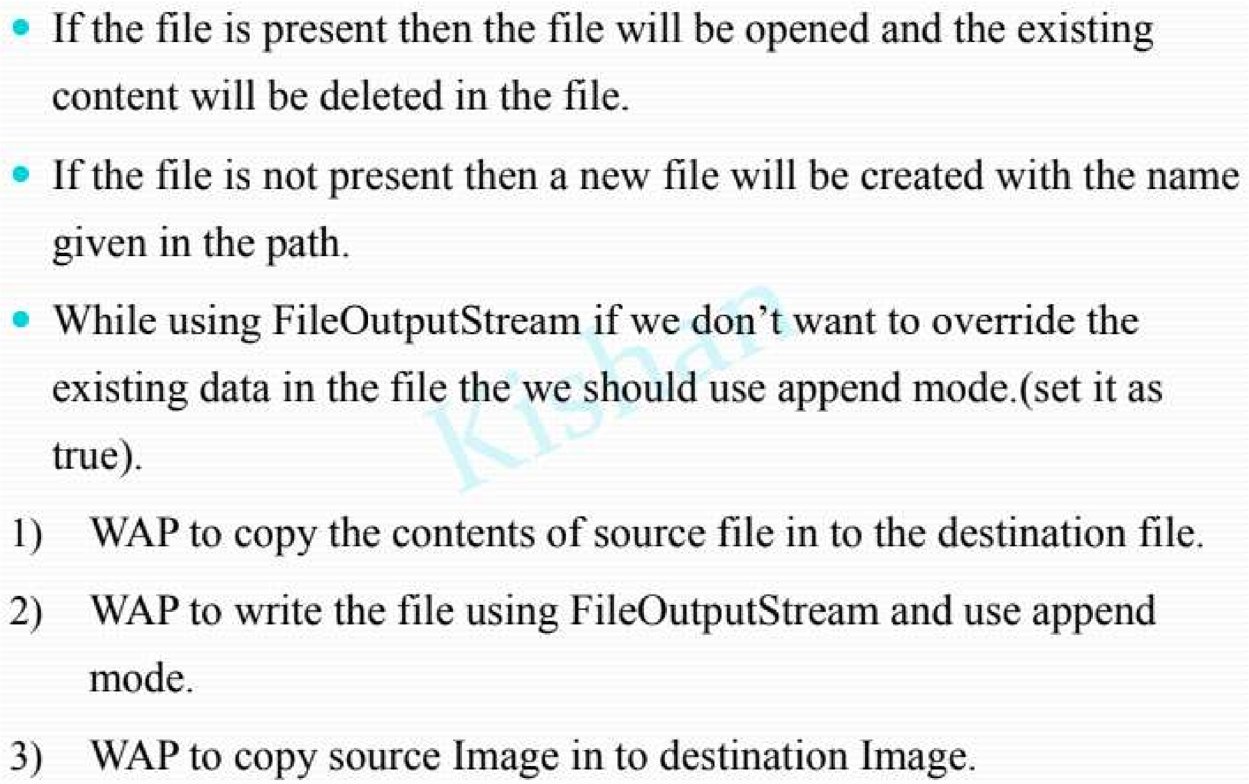
FileOutputStream Class

- FileOutputStream class is a normal class which extends OutputStream class which is a abstract class.
- This class is always used to open the file in write mode.

Syntax:

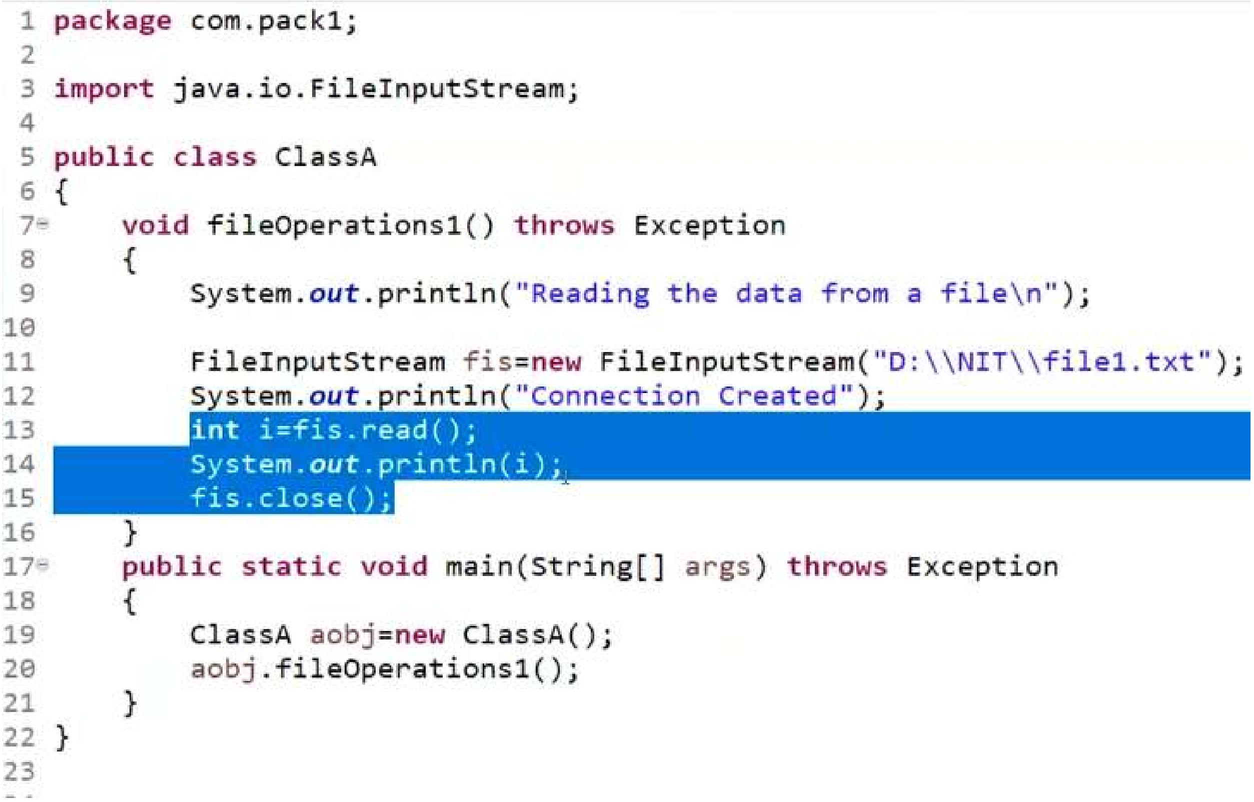
- FileOutputStream(String filePath)
- FileOutputStream(File fileObject)
- FileOutputStream(String filePath,boolean append)

- If we are trying to write some data in to the file by using write() method, then compiler will check if there is any file present in that given URL.

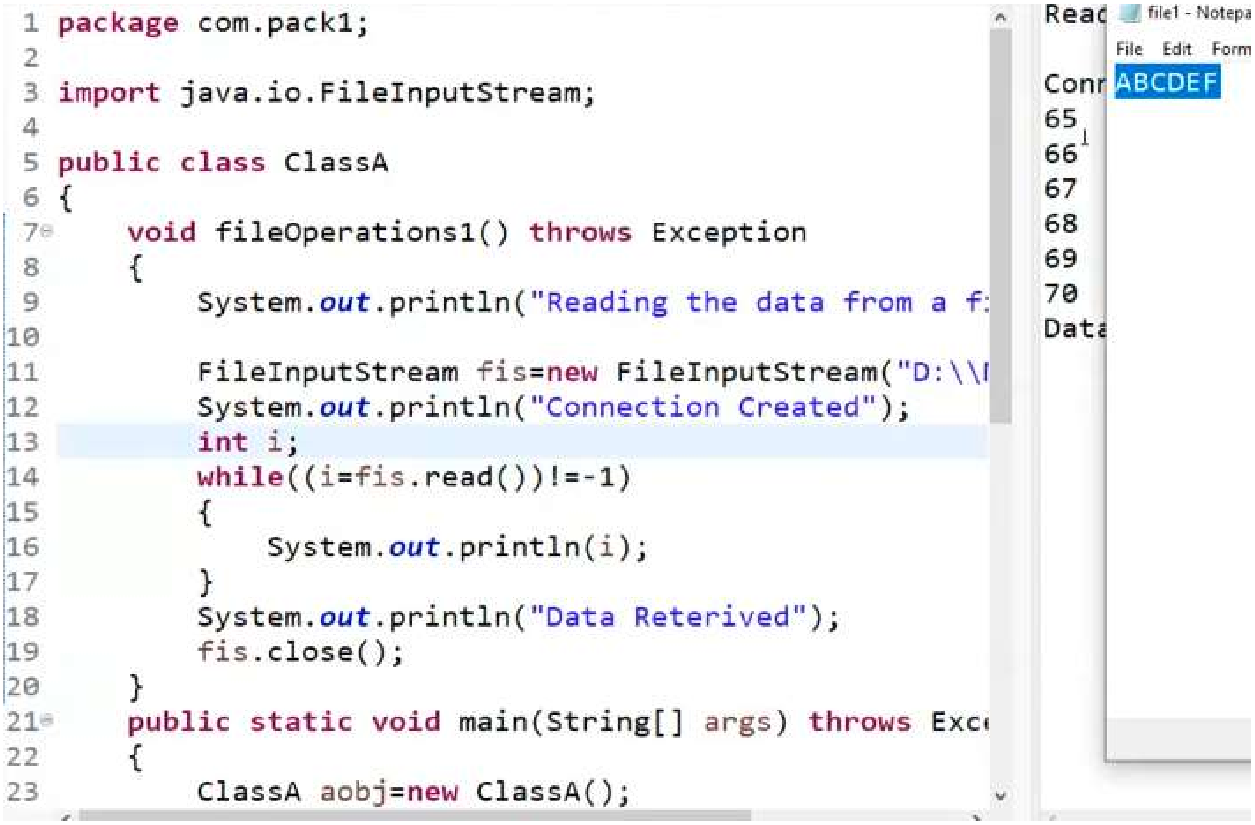


- If the file is present then the file will be opened and the existing content will be deleted in the file.
- If the file is not present then a new file will be created with the name given in the path.
- While using FileOutputStream if we don't want to override the existing data in the file the we should use append mode.(set it as true).

1) WAP to copy the contents of source file in to the destination file.
2) WAP to write the file using FileOutputStream and use append mode.
3) WAP to copy source Image in to destination Image.



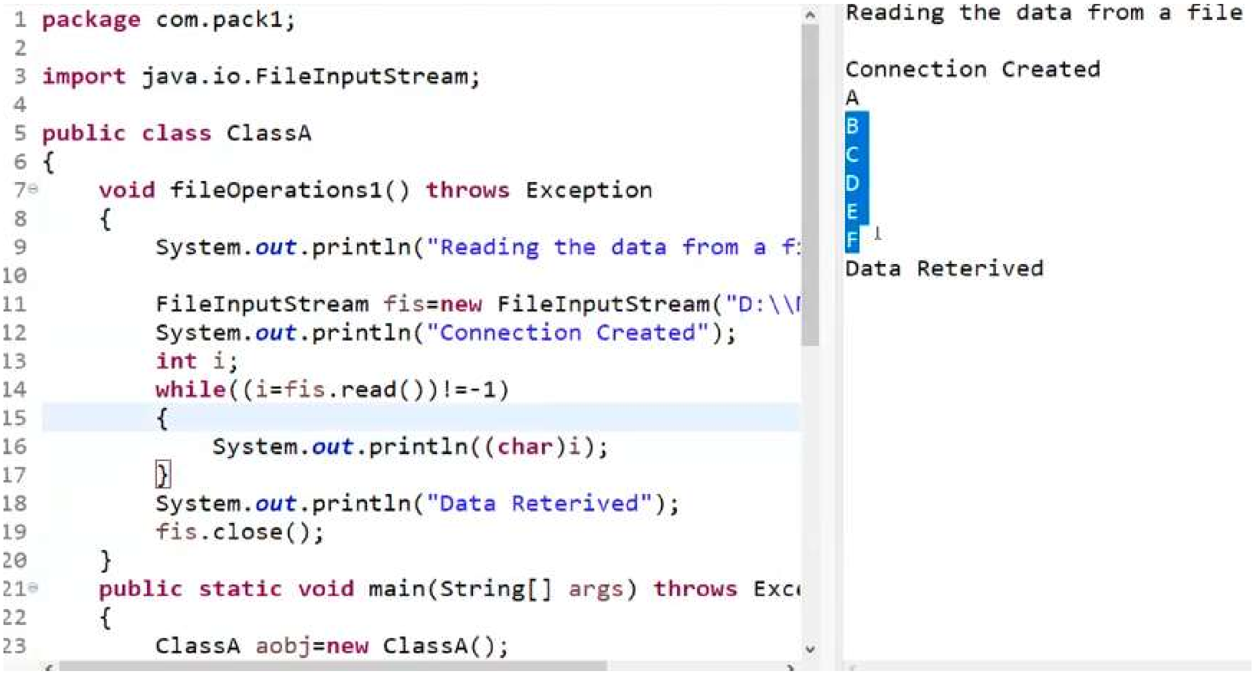
```java
package com.pack1;

import java.io.FileInputStream;

public class ClassA
{
    void fileOperations1() throws Exception
    {
        System.out.println("Reading the data from a file\n");

        FileInputStream fis=new FileInputStream("D:\\NIT\\file1.txt");
        System.out.println("Connection Created");
        int i=fis.read();
        System.out.println(i);
        fis.close();
    }
    public static void main(String[] args) throws Exception
    {
        ClassA aobj=new ClassA();
        aobj.fileOperations1();
    }
}
```



```
package com.pack1;

import java.io.FileInputStream;

public class ClassA
{
    void fileOperations1() throws Exception
    {
        System.out.println("Reading the data from a f:

        FileInputStream fis=new FileInputStream("D:\\
        System.out.println("Connection Created");
        int i;
        while((i=fis.read())!=-1)
        {
            System.out.println(i);
        }
        System.out.println("Data Reterived");
        fis.close();
    }
    public static void main(String[] args) throws Exc
    {
        ClassA aobj=new ClassA();
```

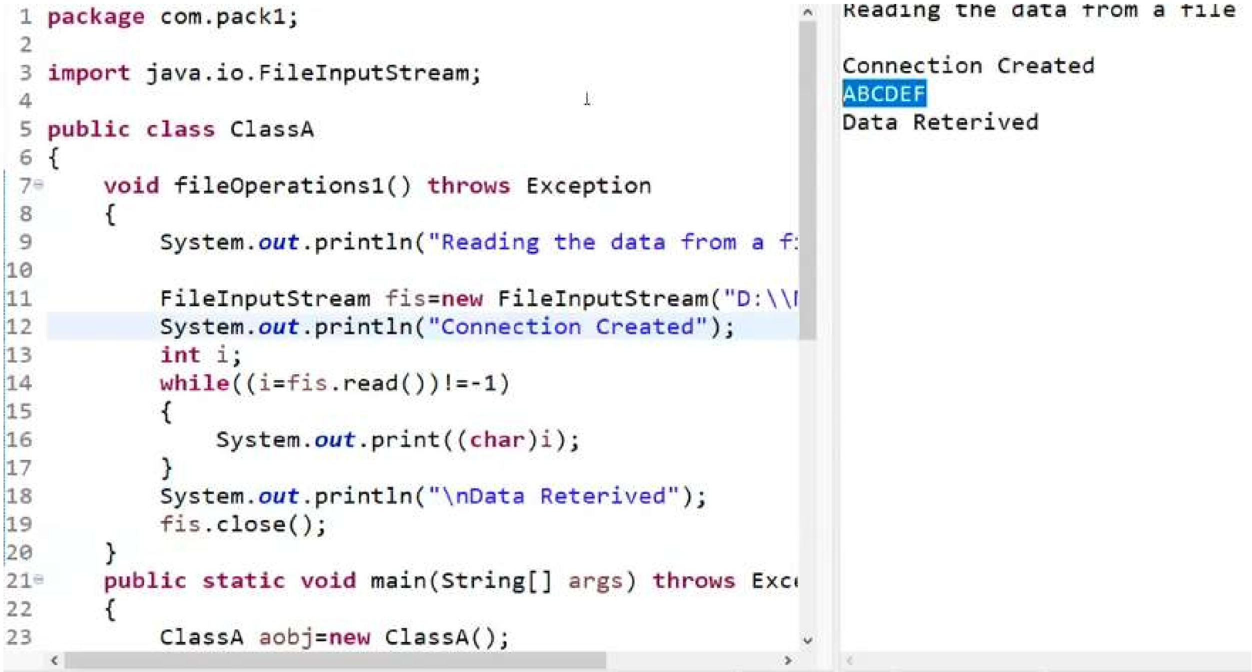
```
Read
Conr
65
66
67
68
69
70
Data
```

```
ABCDEF
```



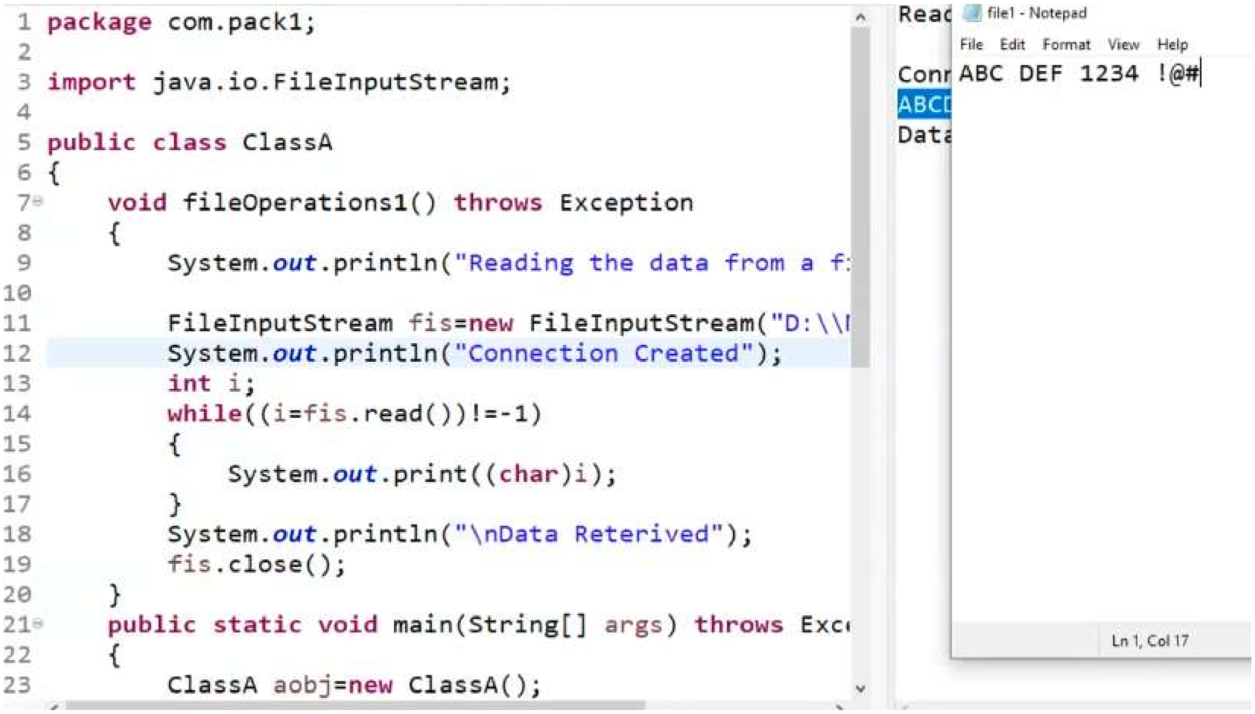
```
package com.pack1;

import java.io.FileInputStream;

public class ClassA
{
    void fileOperations1() throws Exception
    {
        System.out.println("Reading the data from a f:

        FileInputStream fis=new FileInputStream("D:\\
        System.out.println("Connection Created");
        int i;
        while((i=fis.read())!=-1)
        {
            System.out.println((char)i);
        }
        System.out.println("Data Reterived");
        fis.close();
    }
    public static void main(String[] args) throws Exc
    {
        ClassA aobj=new ClassA();
```

```
Reading the data from a file

Connection Created
A
B
C
D
E
F
Data Reterived
```



```
package com.pack1;

import java.io.FileInputStream;

public class ClassA
{
    void fileOperations1() throws Exception
    {
        System.out.println("Reading the data from a f:

        FileInputStream fis=new FileInputStream("D:\\I
        System.out.println("Connection Created");
        int i;
        while((i=fis.read())!=-1)
        {
            System.out.print((char)i);
        }
        System.out.println("\nData Reterived");
        fis.close();
    }
    public static void main(String[] args) throws Exc
    {
        ClassA aobj=new ClassA();
```

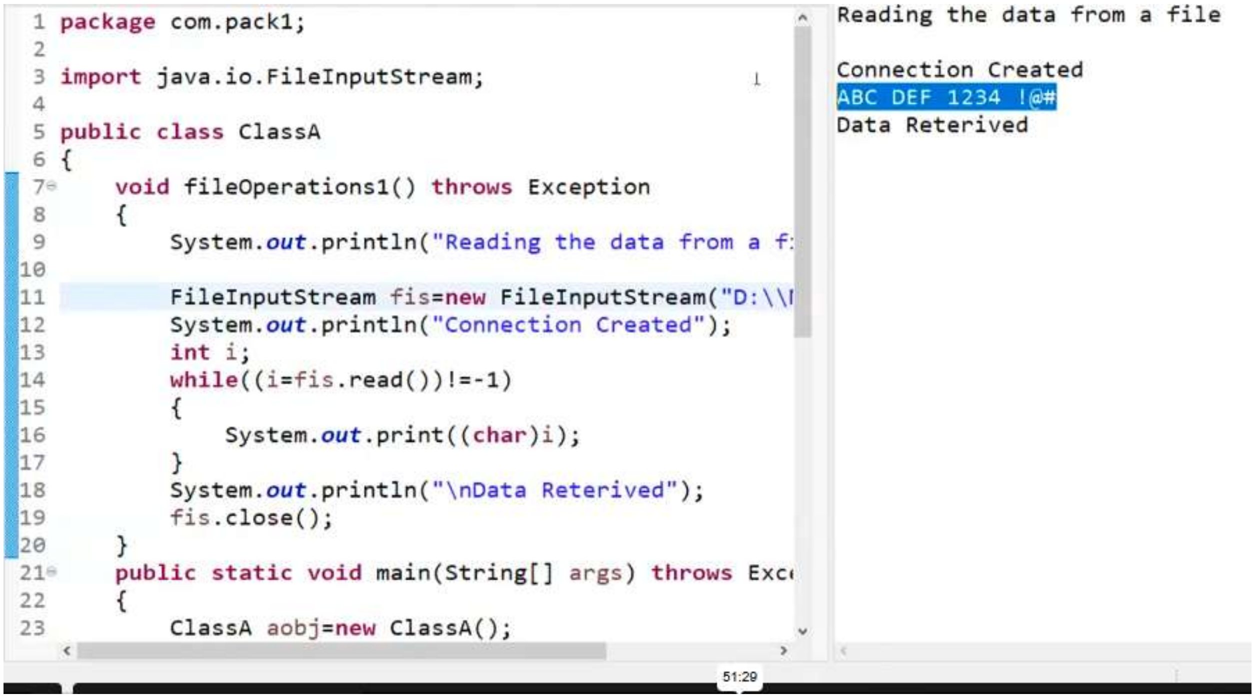
```
Reading the data from a file

Connection Created
ABCDEF
Data Reterived
```



```
package com.pack1;

import java.io.FileInputStream;

public class ClassA
{
    void fileOperations1() throws Exception
    {
        System.out.println("Reading the data from a f:

        FileInputStream fis=new FileInputStream("D:\\I
        System.out.println("Connection Created");
        int i;
        while((i=fis.read())!=-1)
        {
            System.out.print((char)i);
        }
        System.out.println("\nData Reterived");
        fis.close();
    }
    public static void main(String[] args) throws Exc
    {
        ClassA aobj=new ClassA();
```

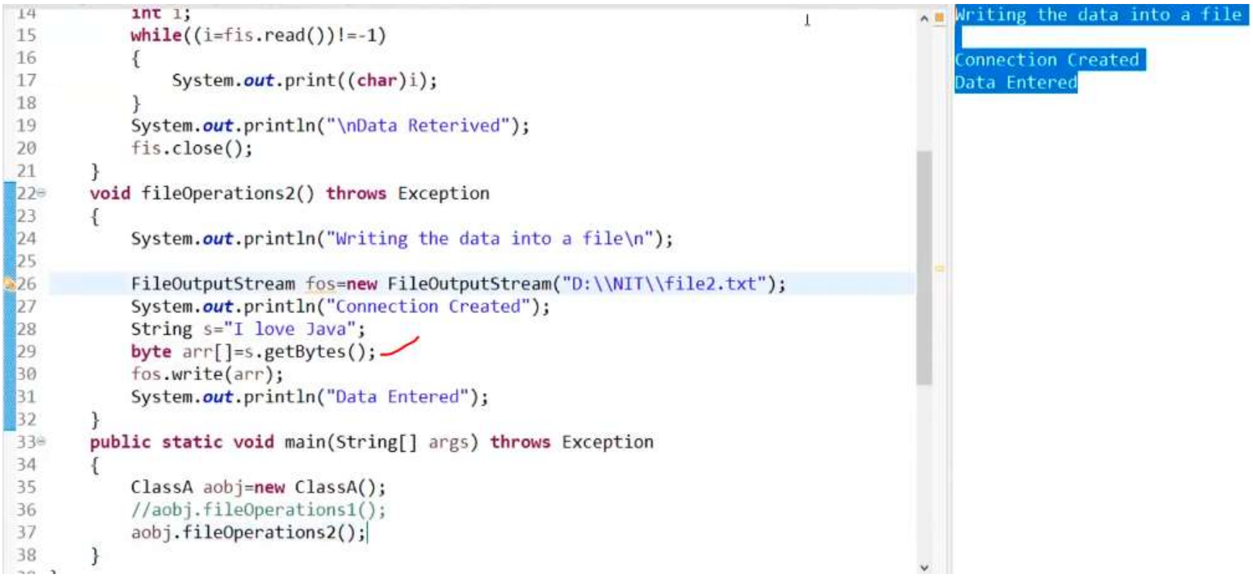
```
Read

Conn
ABCD
Data
```

```
ABC DEF 1234 !@#
```



```
package com.pack1;

import java.io.FileInputStream;

public class ClassA
{
    void fileOperations1() throws Exception
    {
        System.out.println("Reading the data from a f:

        FileInputStream fis=new FileInputStream("D:\\I
        System.out.println("Connection Created");
        int i;
        while((i=fis.read())!=-1)
        {
            System.out.print((char)i);
        }
        System.out.println("\nData Reterived");
        fis.close();
    }
    public static void main(String[] args) throws Exc
    {
        ClassA aobj=new ClassA();
```

```
Reading the data from a file

Connection Created
ABC DEF 1234 !@#
Data Reterived
```

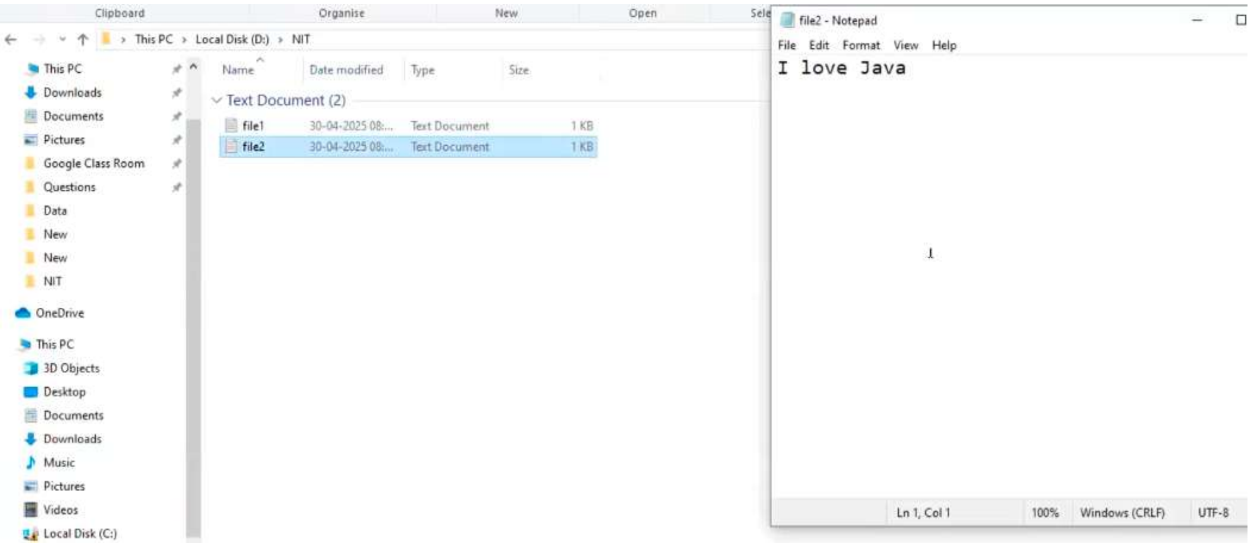


```
        int i;
        while((i=fis.read())!=-1)
        {
            System.out.print((char)i);
        }
        System.out.println("\nData Reterived");
        fis.close();
    }
    void fileOperations2() throws Exception
    {
        System.out.println("Writing the data into a file\n");

        FileOutputStream fos=new FileOutputStream("D:\\NIT\\file2.txt");
        System.out.println("Connection Created");
        String s="I love Java";
        byte arr[]=s.getBytes();
        fos.write(arr);
        System.out.println("Data Entered");
    }
    public static void main(String[] args) throws Exception
    {
        ClassA aobj=new ClassA();
        //aobj.fileOperations1();
        aobj.fileOperations2();
    }
```

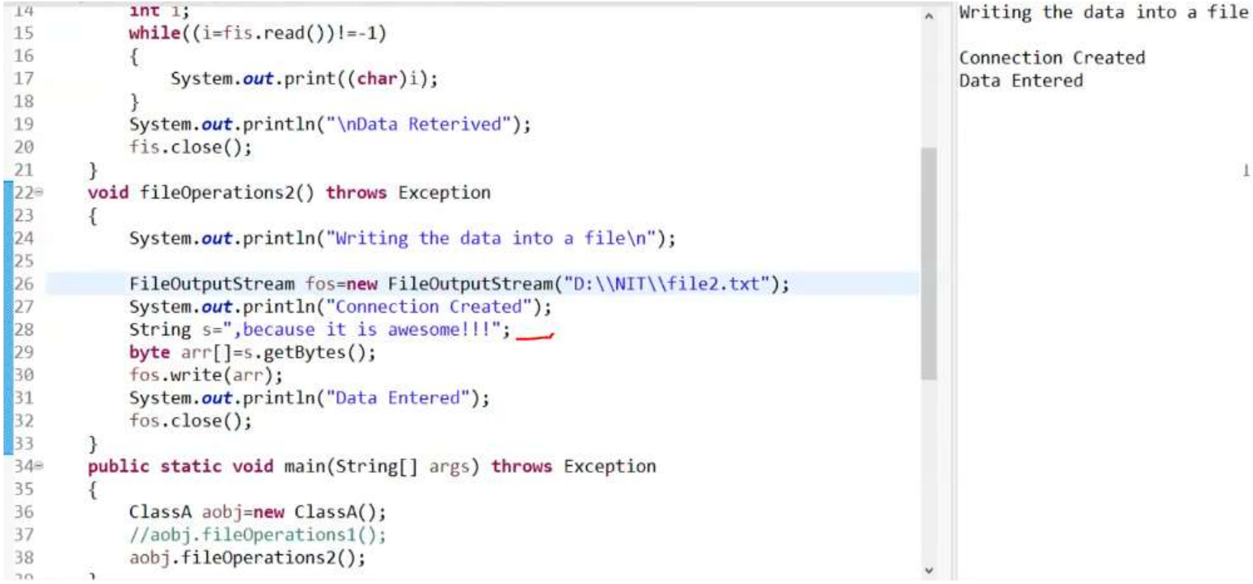
```
Writing the data into a file

Connection Created
Data Entered
```

getBytes() is of string handling method which has return type as byte arr[]

In **Java**, the getBytes() method is used to **convert a String into a byte array (byte[])**.

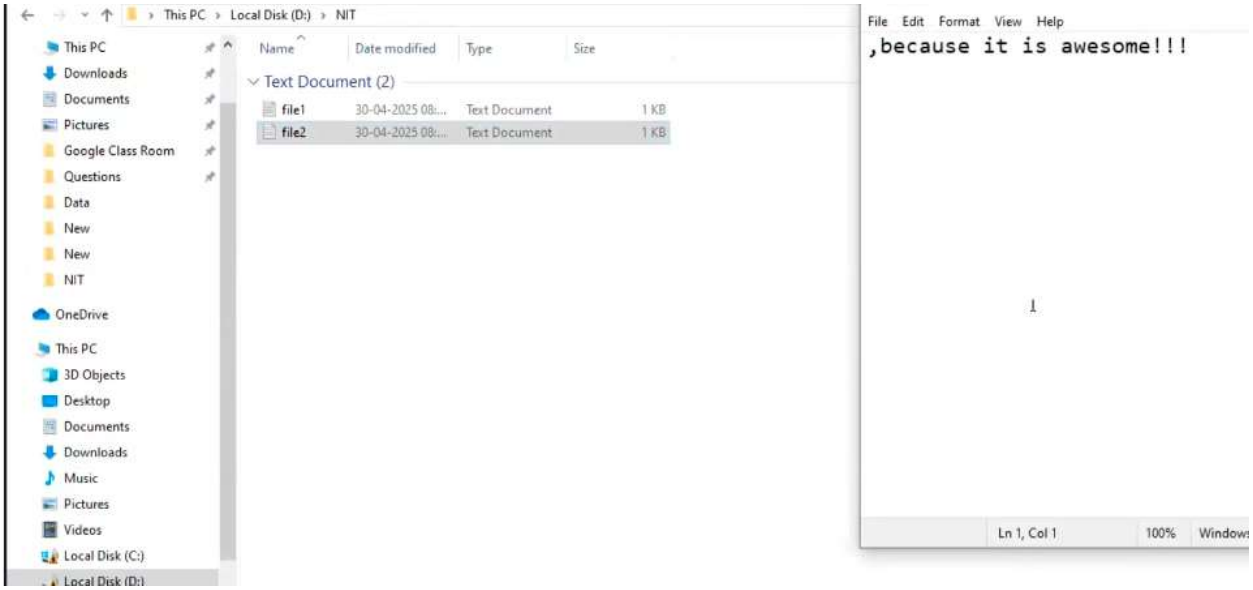


```
I love Java
```



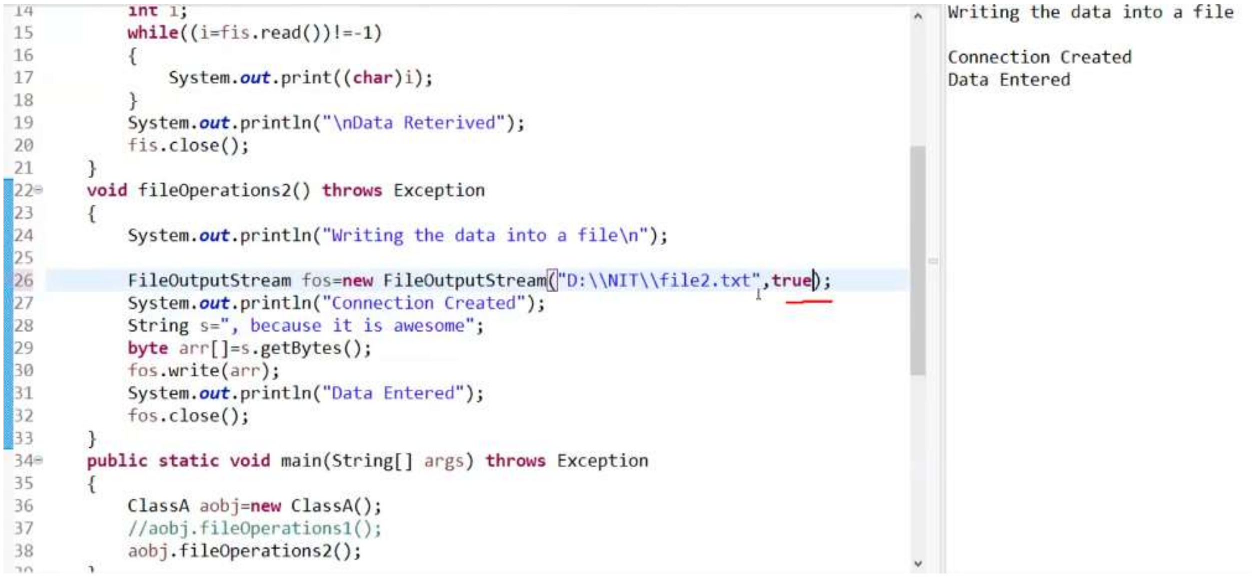
```java
        int i;
        while((i=fis.read())!=-1)
        {
            System.out.print((char)i);
        }
        System.out.println("\nData Reterived");
        fis.close();
    }
    void fileOperations2() throws Exception
    {
        System.out.println("Writing the data into a file\n");

        FileOutputStream fos=new FileOutputStream("D:\\NIT\\file2.txt");
        System.out.println("Connection Created");
        String s=",because it is awesome!!!";
        byte arr[]=s.getBytes();
        fos.write(arr);
        System.out.println("Data Entered");
        fos.close();
    }
    public static void main(String[] args) throws Exception
    {
        ClassA aobj=new ClassA();
        //aobj.fileOperations1();
        aobj.fileOperations2();
```

```
Writing the data into a file

Connection Created
Data Entered
```


This PC > Local Disk (D:) > NIT
Name
Date modified
Type
Size
Text Document (2)
file1 30-04-2025 08:... Text Document 1 KB
file2 30-04-2025 08:... Text Document 1 KB
File Edit Format View Help
Ln 1, Col 1
100%
Windows

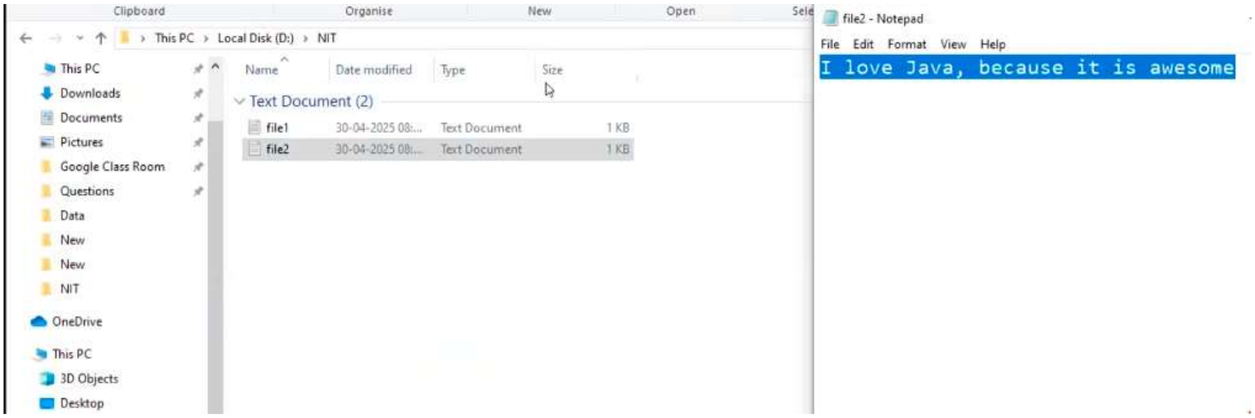
```
,because it is awesome!!!
```

The below as actually append mode

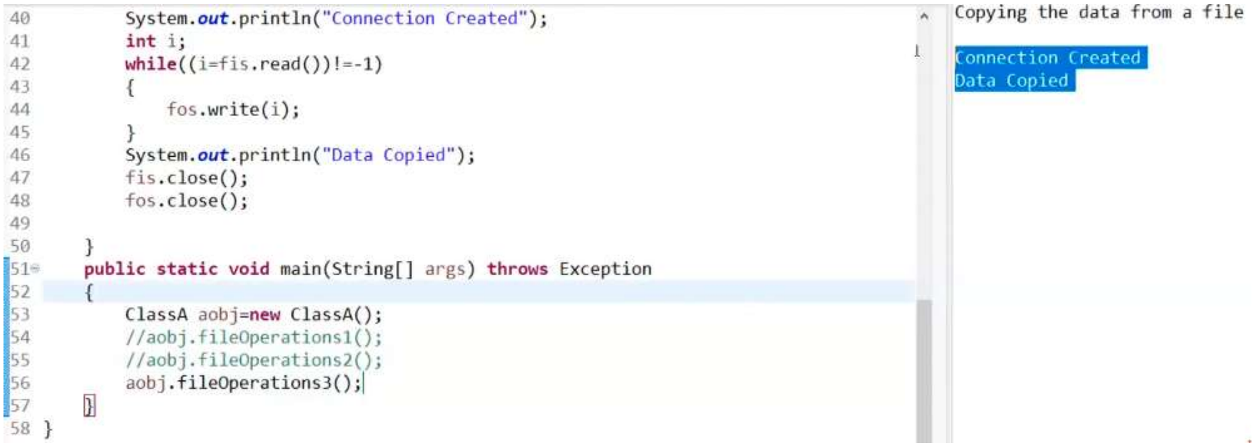


```java
        int i;
        while((i=fis.read())!=-1)
        {
            System.out.print((char)i);
        }
        System.out.println("\nData Reterived");
        fis.close();
    }
    void fileOperations2() throws Exception
    {
        System.out.println("Writing the data into a file\n");

        FileOutputStream fos=new FileOutputStream("D:\\NIT\\file2.txt",true);
        System.out.println("Connection Created");
        String s=", because it is awesome";
        byte arr[]=s.getBytes();
        fos.write(arr);
        System.out.println("Data Entered");
        fos.close();
    }
    public static void main(String[] args) throws Exception
    {
        ClassA aobj=new ClassA();
        //aobj.fileOperations1();
        aobj.fileOperations2();
```

```
Writing the data into a file

Connection Created
Data Entered
```

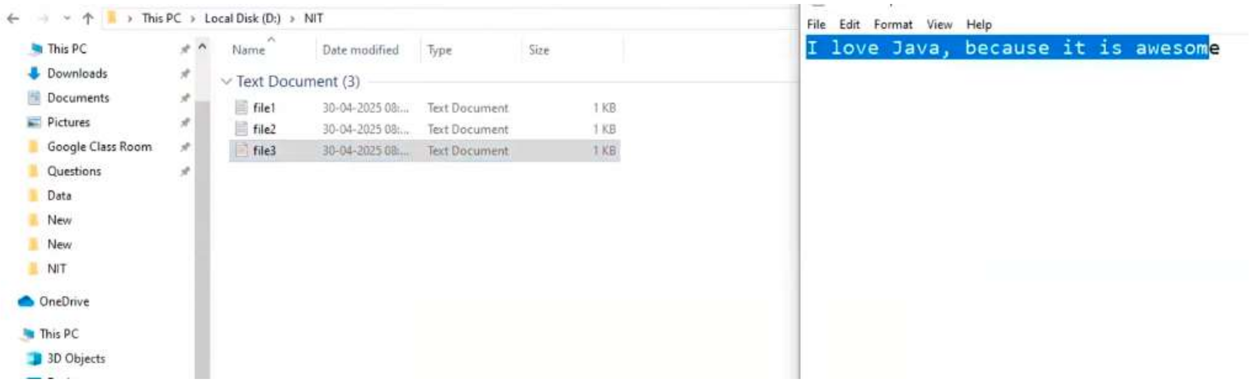

Clipboard
Organise
New
Open
This PC > Local Disk (D:) > NIT
Name
Date modified
Type
Size
Text Document (2)
file1 30-04-2025 08:... Text Document 1 KB
file2 30-04-2025 08:... Text Document 1 KB
file2 - Notepad
File Edit Format View Help

```
I love Java, because it is awesome
```



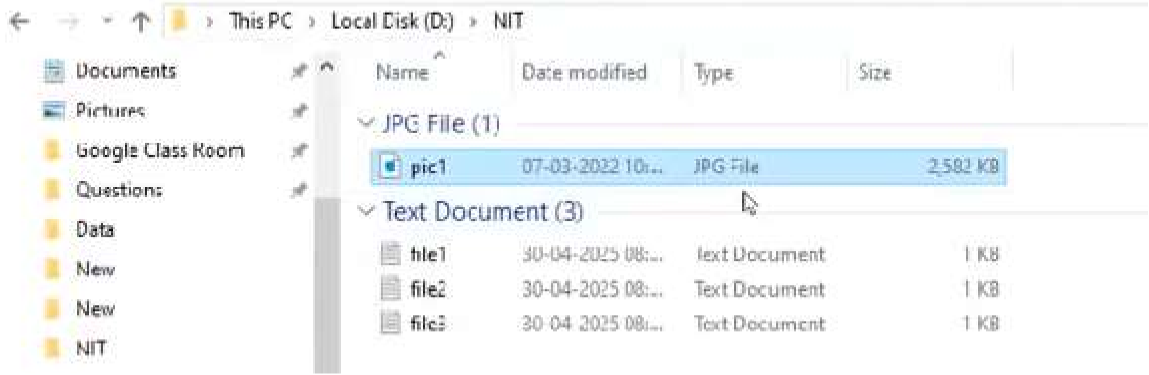
```
        System.out.println("Connection Created");
        int i;
        while((i=fis.read())!=-1)
        {
            fos.write(i);
        }
        System.out.println("Data Copied");
        fis.close();
        fos.close();

    }
    public static void main(String[] args) throws Exception
    {
        ClassA aobj=new ClassA();
        //aobj.fileOperations1();
        //aobj.fileOperations2();
        aobj.fileOperations3();
    }
}
```

```
Copying the data from a file

Connection Created
Data Copied
```

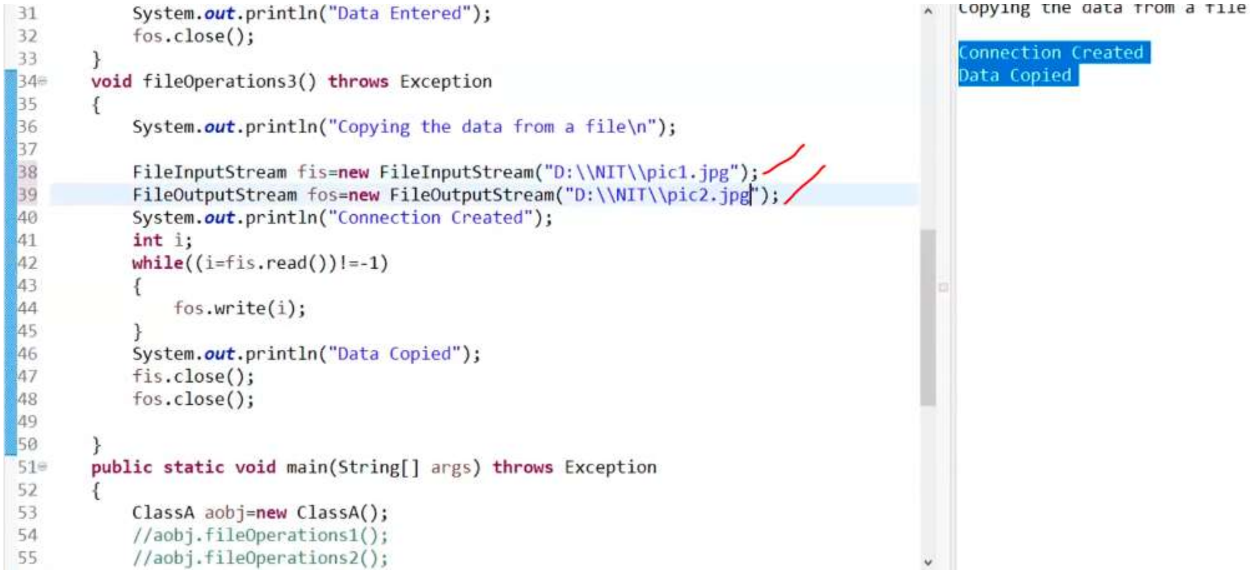


Name	Date modified	Type	Size
file1	30-04-2025 08:...	Text Document	1 KB
file2	30-04-2025 08:...	Text Document	1 KB
file3	30-04-2025 08:...	Text Document	1 KB

```
I love Java, because it is awesome
```

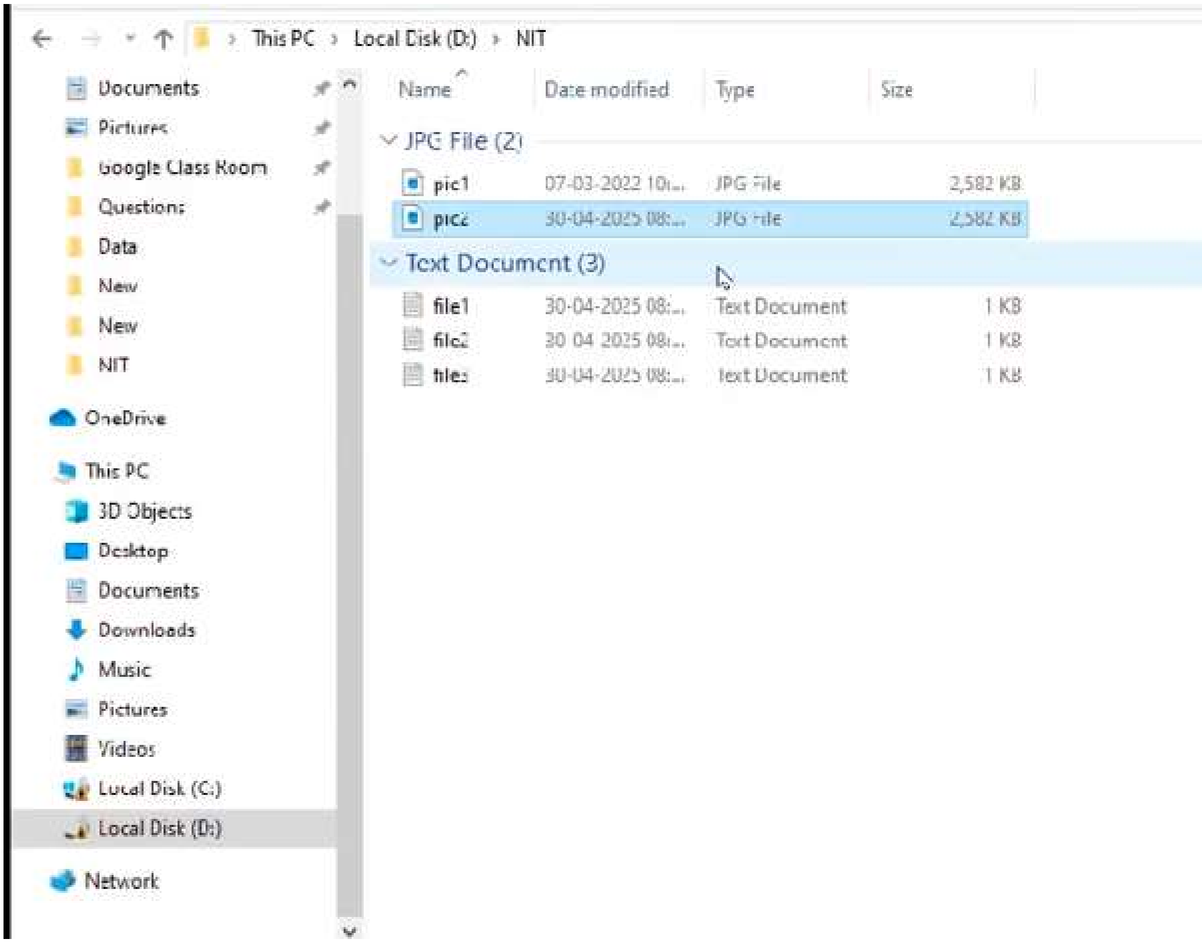


Name	Date modified	Type	Size
pic1	07-03-2022 10:...	JPG File	2,582 KB
file1	30-04-2025 08:...	Text Document	1 KB
file2	30-04-2025 08:...	Text Document	1 KB
file3	30-04-2025 08:...	Text Document	1 KB

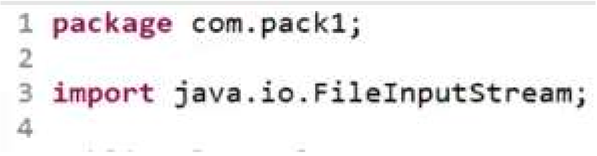


```java
        System.out.println("Data Entered");
        fos.close();
    }
    void fileOperations3() throws Exception
    {
        System.out.println("Copying the data from a file\n");

        FileInputStream fis=new FileInputStream("D:\\NIT\\pic1.jpg");
        FileOutputStream fos=new FileOutputStream("D:\\NIT\\pic2.jpg");
        System.out.println("Connection Created");
        int i;
        while((i=fis.read())!=-1)
        {
            fos.write(i);
        }
        System.out.println("Data Copied");
        fis.close();
        fos.close();

    }
    public static void main(String[] args) throws Exception
    {
        ClassA aobj=new ClassA();
        //aobj.fileOperations1();
        //aobj.fileOperations2();
```

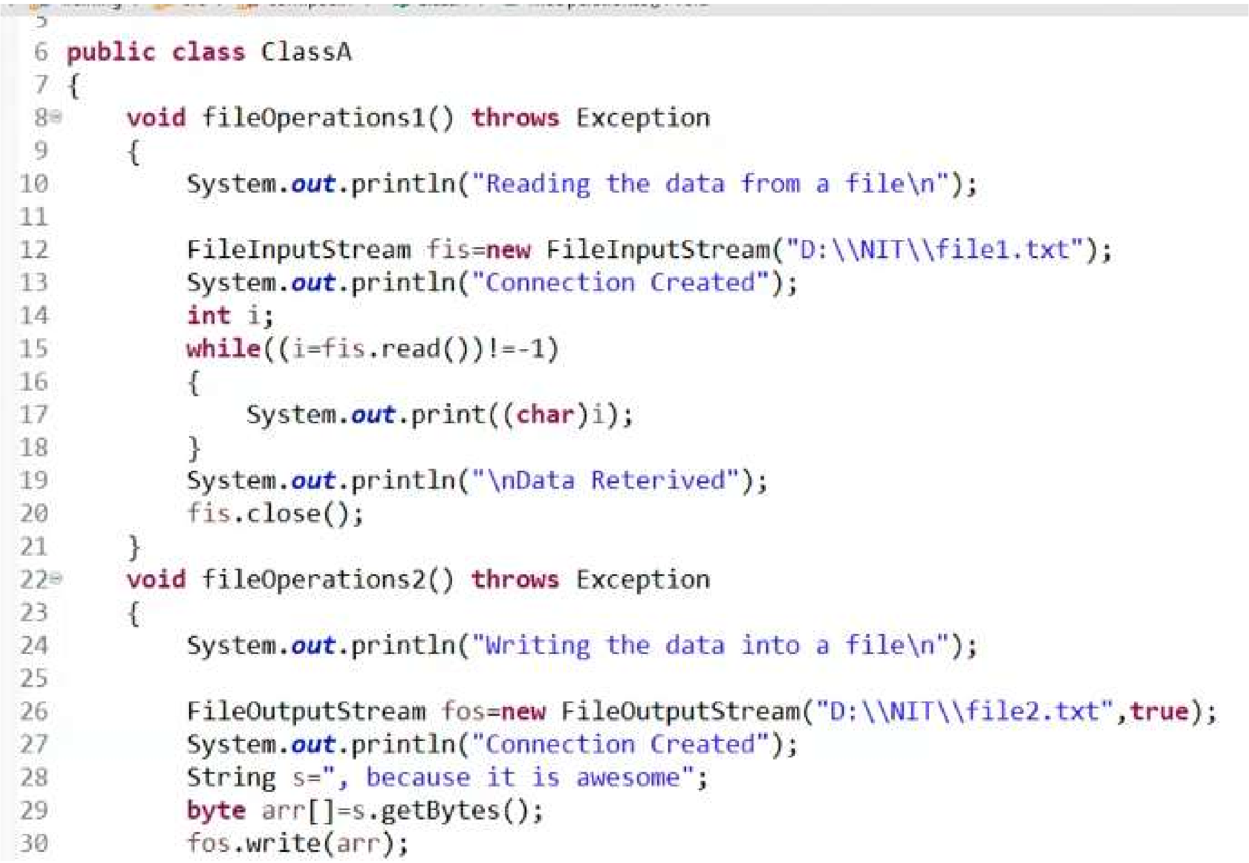
```
Copying the data from a file

Connection Created
Data Copied
```



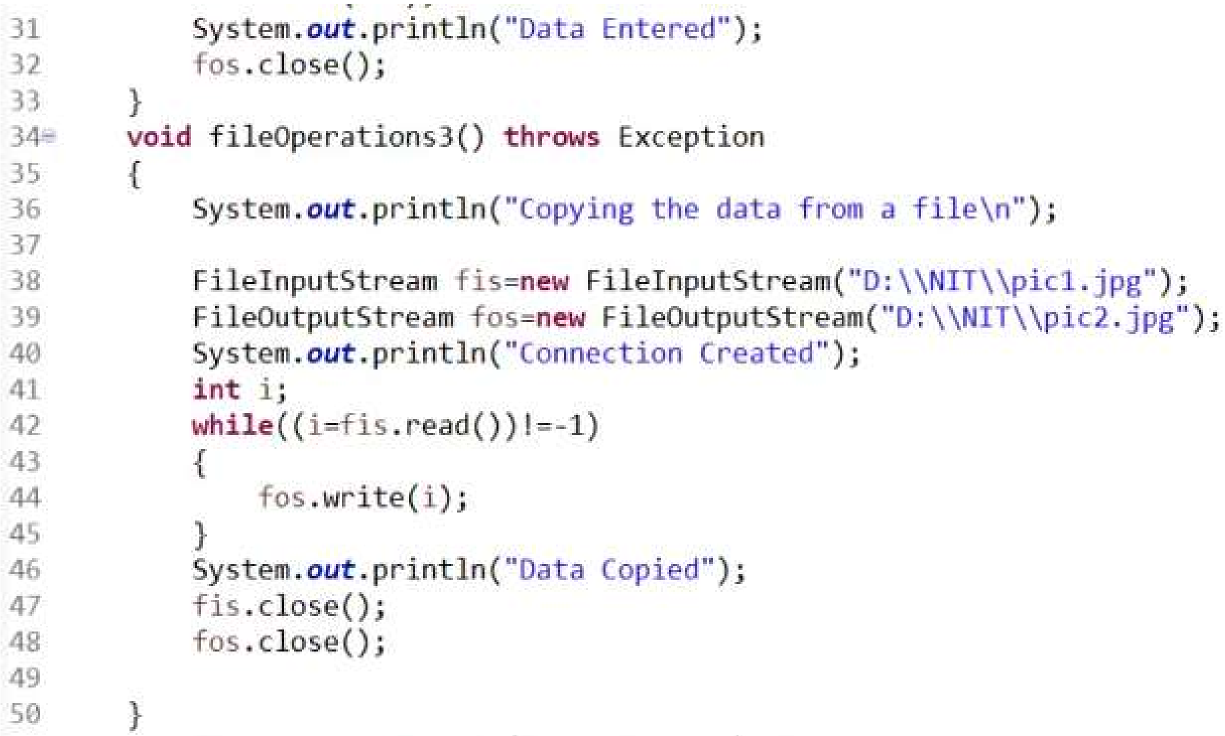
Name	Date modified	Type	Size
JPG File (2)			
pic1	07-03-2022 10:...	JPG File	2,582 KB
pic2	30-04-2025 08:...	JPG File	2,582 KB
Text Document (3)			
file1	30-04-2025 08:...	Text Document	1 KB
file2	30-04-2025 08:...	Text Document	1 KB
file3	30-04-2025 08:...	Text Document	1 KB



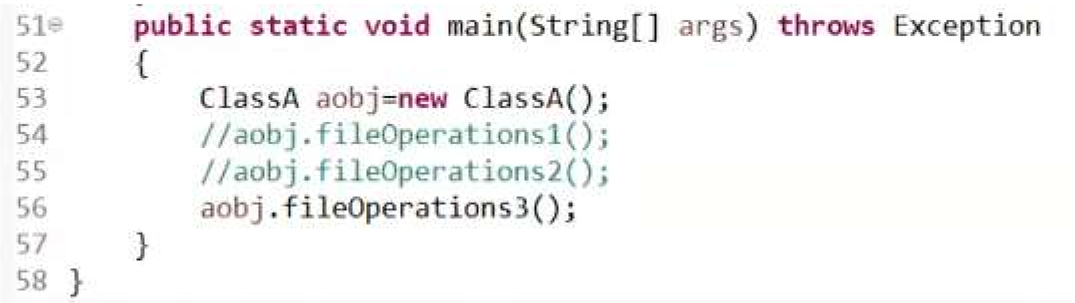
```java
package com.pack1;

import java.io.FileInputStream;

```



```java

public class ClassA
{
    void fileOperations1() throws Exception
    {
        System.out.println("Reading the data from a file\n");

        FileInputStream fis=new FileInputStream("D:\\NIT\\file1.txt");
        System.out.println("Connection Created");
        int i;
        while((i=fis.read())!=-1)
        {
            System.out.print((char)i);
        }
        System.out.println("\nData Reterived");
        fis.close();
    }
    void fileOperations2() throws Exception
    {
        System.out.println("Writing the data into a file\n");

        FileOutputStream fos=new FileOutputStream("D:\\NIT\\file2.txt",true);
        System.out.println("Connection Created");
        String s=", because it is awesome";
        byte arr[]=s.getBytes();
        fos.write(arr);
```



```
        System.out.println("Data Entered");
        fos.close();
    }
    void fileOperations3() throws Exception
    {
        System.out.println("Copying the data from a file\n");

        FileInputStream fis=new FileInputStream("D:\\NIT\\pic1.jpg");
        FileOutputStream fos=new FileOutputStream("D:\\NIT\\pic2.jpg");
        System.out.println("Connection Created");
        int i;
        while((i=fis.read())!=-1)
        {
            fos.write(i);
        }
        System.out.println("Data Copied");
        fis.close();
        fos.close();

    }
```



```
    public static void main(String[] args) throws Exception
    {
        ClassA aobj=new ClassA();
        //aobj.fileOperations1();
        //aobj.fileOperations2();
        aobj.fileOperations3();
    }
}
```