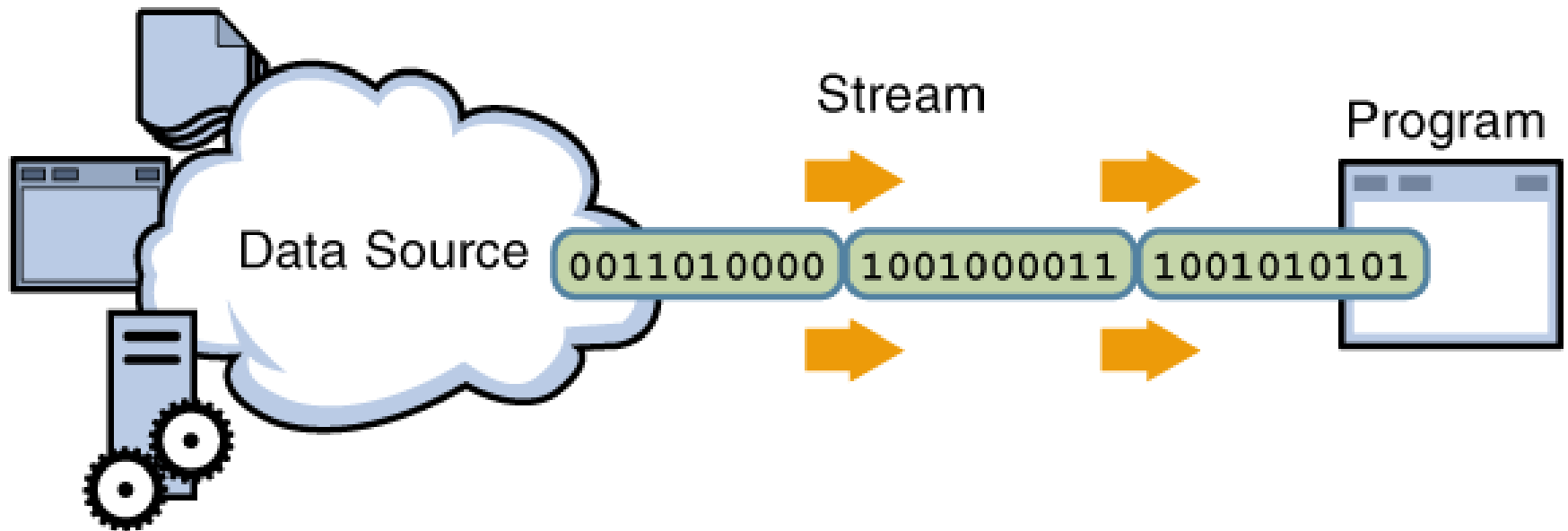


# **Streams (File Handling)**

## Streams (File Handling)



# Streams (File Handling)

- Byte Streams
- Character Streams

# Streams (File Handling)

- byte        -128    to    +127
- char        -32,768    to    32,767

# Streams (File Handling)

byte 0 to 255

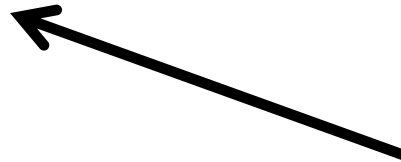


97 a 01100001

98 b 01100010

99 c 01100011

char 0 to 65,535



97 a 0000 0000 0110 0001

98 b 0000 0000 0110 0010

99 c 0000 0000 0110 0011

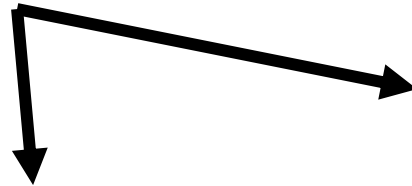
# Byte Streams

- **java.io.\*;**

InputStream

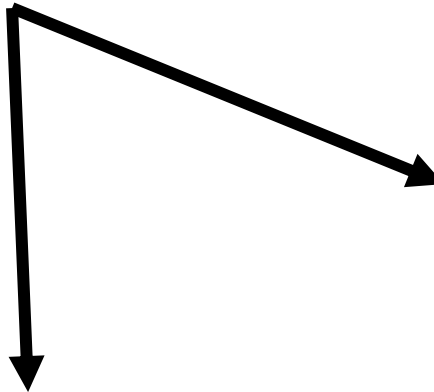
OutputStream

**InputStream**



**FilterInputStream**

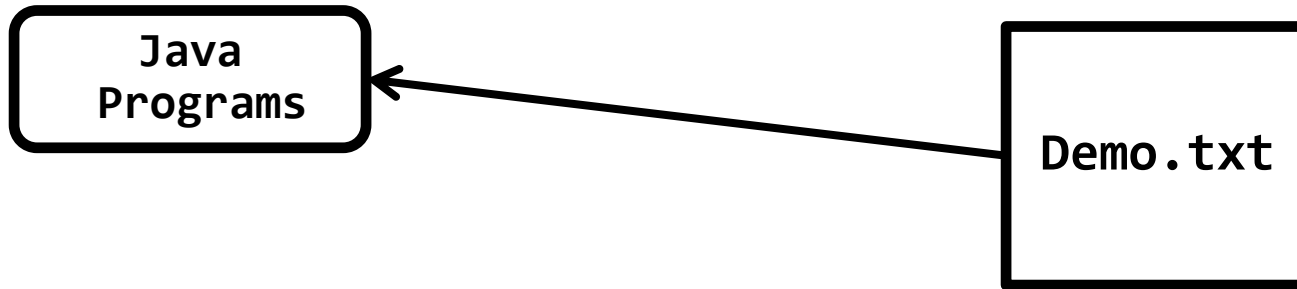
**FileInputStream**



**DataInputStream**

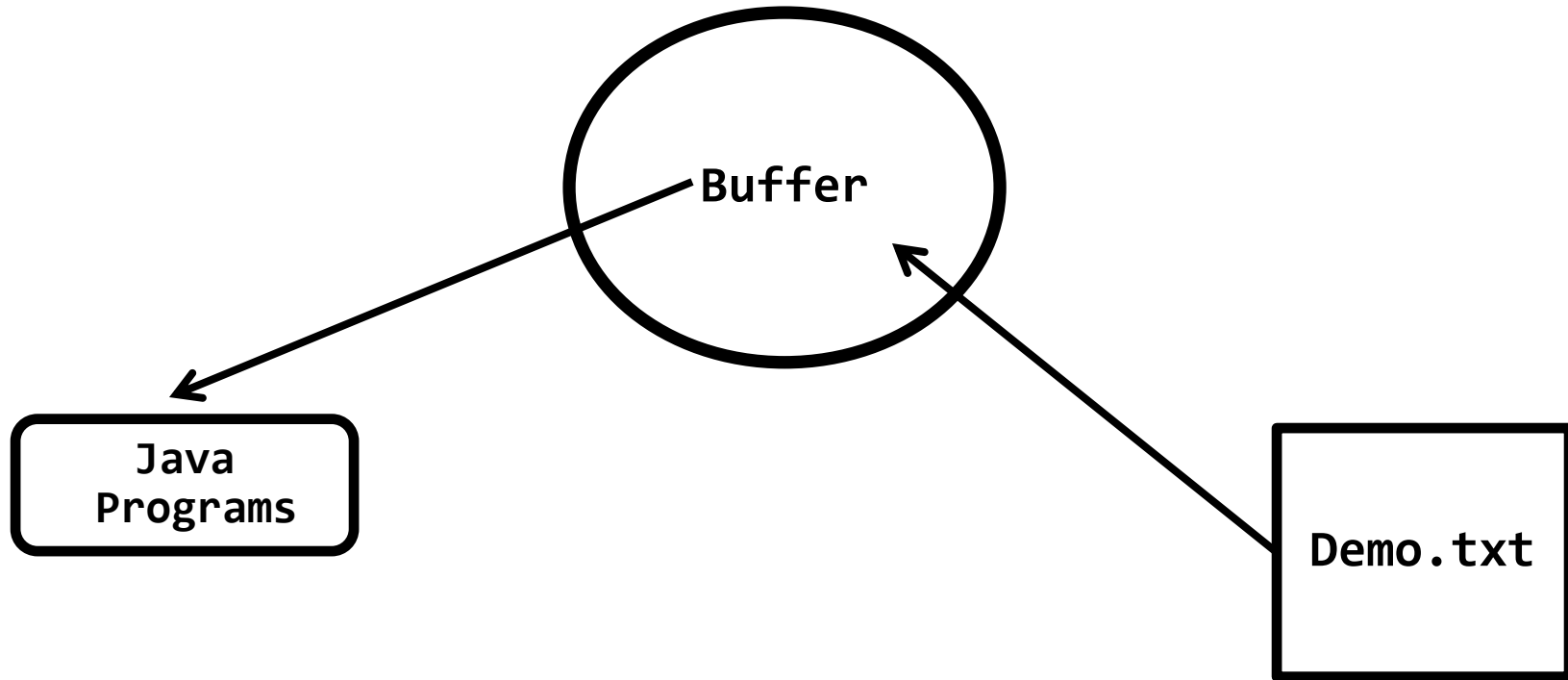
**BufferedInputStream**

# FileInputStream





# BufferedInputStream



```
class InputStream
{
    int    read()
    int    read(byte[])
    int    available()
}
```

✓ `BufferedInputStream(InputStream)`

✓ `BufferedInputStream(InputStream, int)`

```
FileInputStream fis=new FileInputStream("Test.txt");
```

```
int c;
```

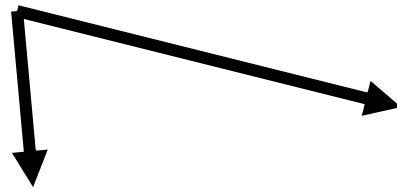
```
while((c=fis.read())!=-1)
```

```
{
```

```
    System.out.print("  "+(char)c);
```

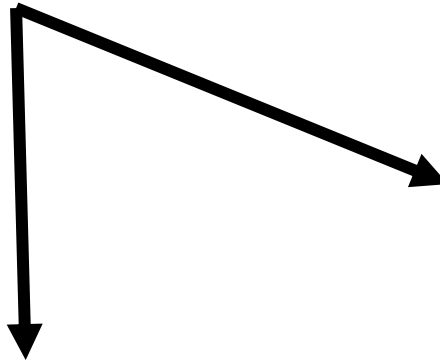
```
}
```

**OutputStream**



**FilterOutputStream**

**FileOutputStream**



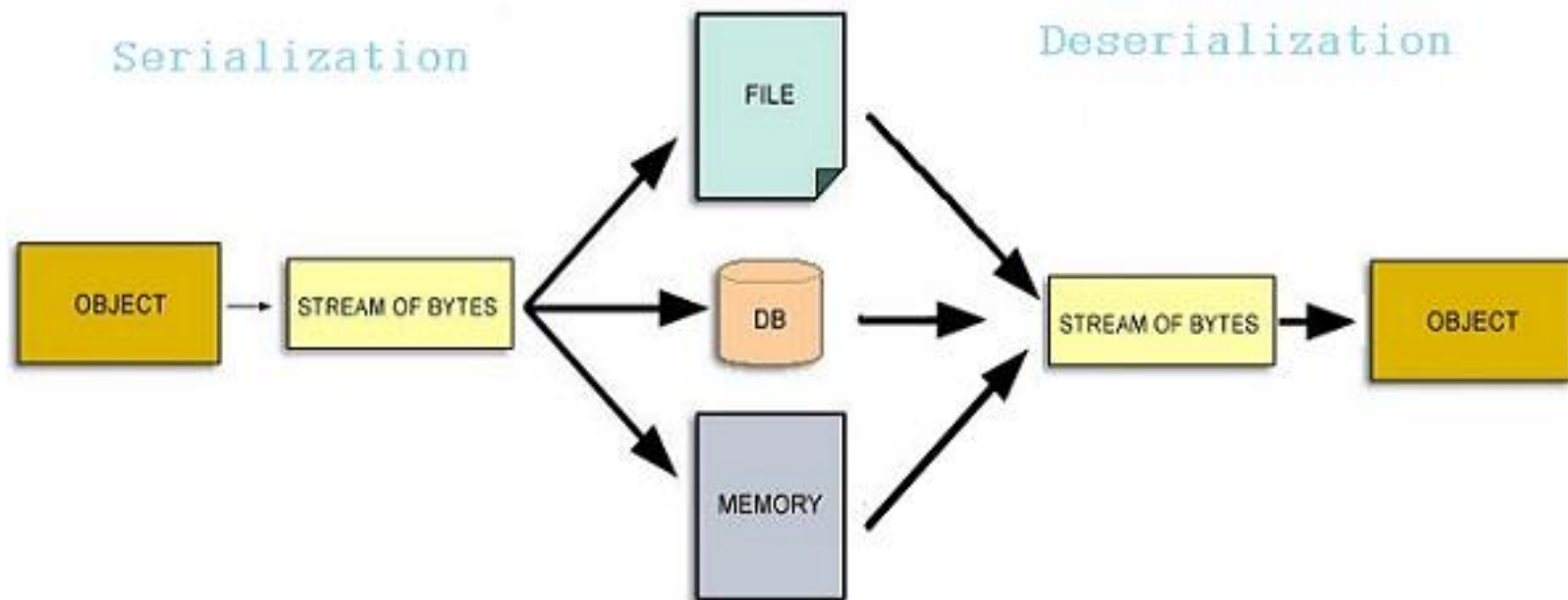
**DataOutputStream**

**BufferedOutputStream**

```
class OutputStream
{
    void    write(byte[])
    void    write(byte[], int, int)
    void    close()
}
```

Serialization

Deserialization



```
class Demo
{
    int a;
    void sum()
    {
        cout<<a;
    }
}
```

```
Demo o1=new Demo();
```

```
    o1.a=1000;
```

```
    o1.sum();
```

```
Demo o2=new Demo();
```

```
    o2.a=3000;
```

```
    o2.sum();
```



# Serialization

```
java.io.*;
```

```
class Sample implements Serializable  
{  
}
```

```
class ObjectOutputStream
{
    void    writeObject(Object)
}
```

```
class ObjectInputStream
{
    Object    readObject()
}
```

# Character Streams

- `java.io.*;`

Reader

Writer

- `java.io.*;`

`InputStream`       $\rightarrow$     `Reader`

`OutputStream`     $\rightarrow$     `Writer`

- `java.io.*;`

