

$$f: A \rightarrow B$$

Console $\rightarrow A$
File $\rightarrow A$

$B \rightarrow \text{Console}$
 $B \rightarrow \text{File}$


```

public static void main(String[] args)
{
    String fileName = "data.txt";
    File f = new File(fileName);
    FileWriter fw = new FileWriter(f);
    writeAll(fw);
    fw.close();
}

```

```

BufferedReader br = new BufferedReader(fr);

```

```

// br.readLine(); // null when empty
String s;

```

```

// ...

```

```

while (true) {
    s = br.readLine();
    if (s == null) break;
    System.out.println(s);
}

```

```

br.close();

```

try-with-resources

Java 7

```

try (BufferedReader br = new BufferedReader(fr)) {
    String s;

```

```

    while (true) {
        s = br.readLine();
        if (s == null) break;
        System.out.println(s);
    }
}

```

br.close()

```

interface Closeable

```

```

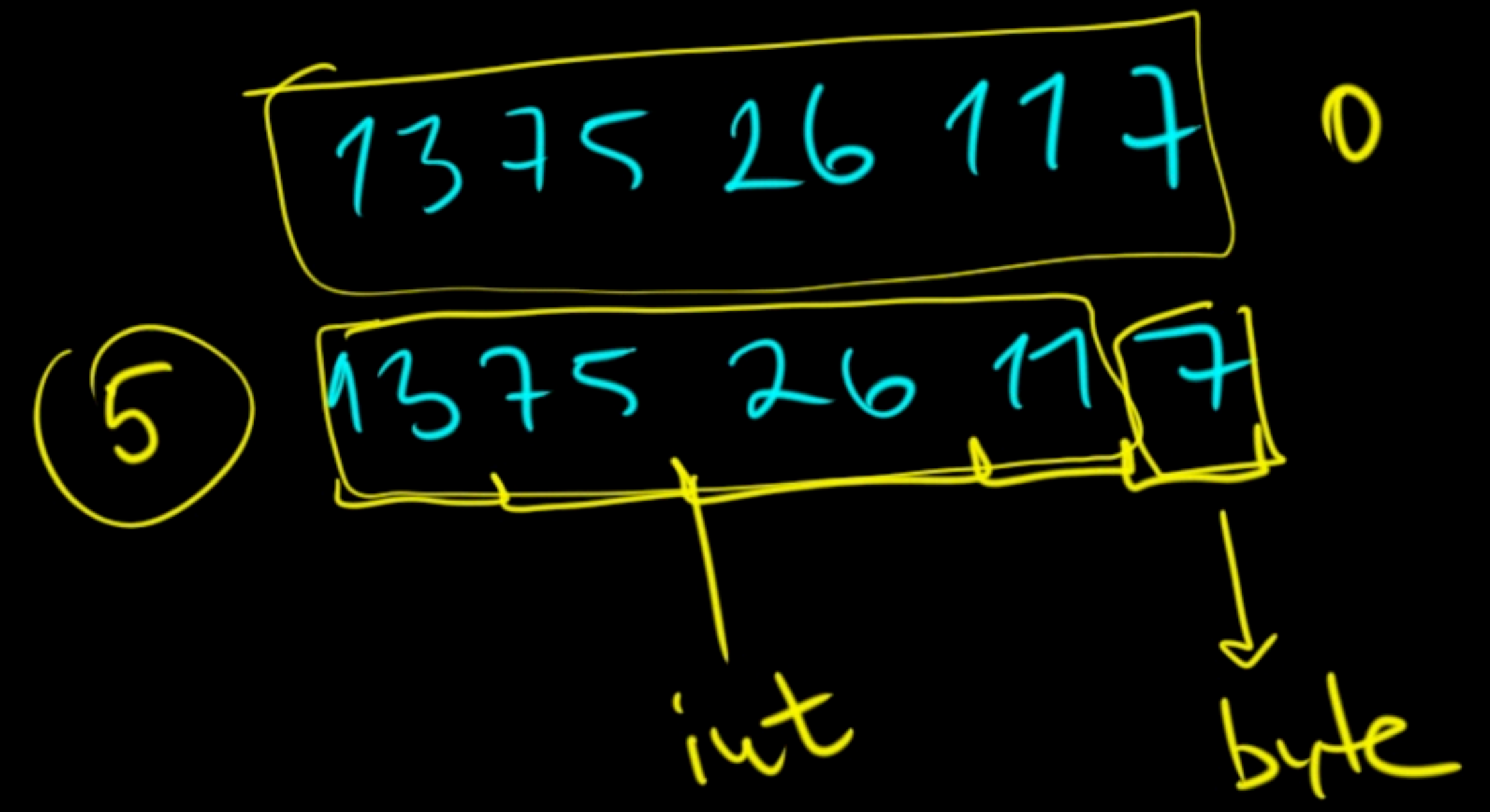
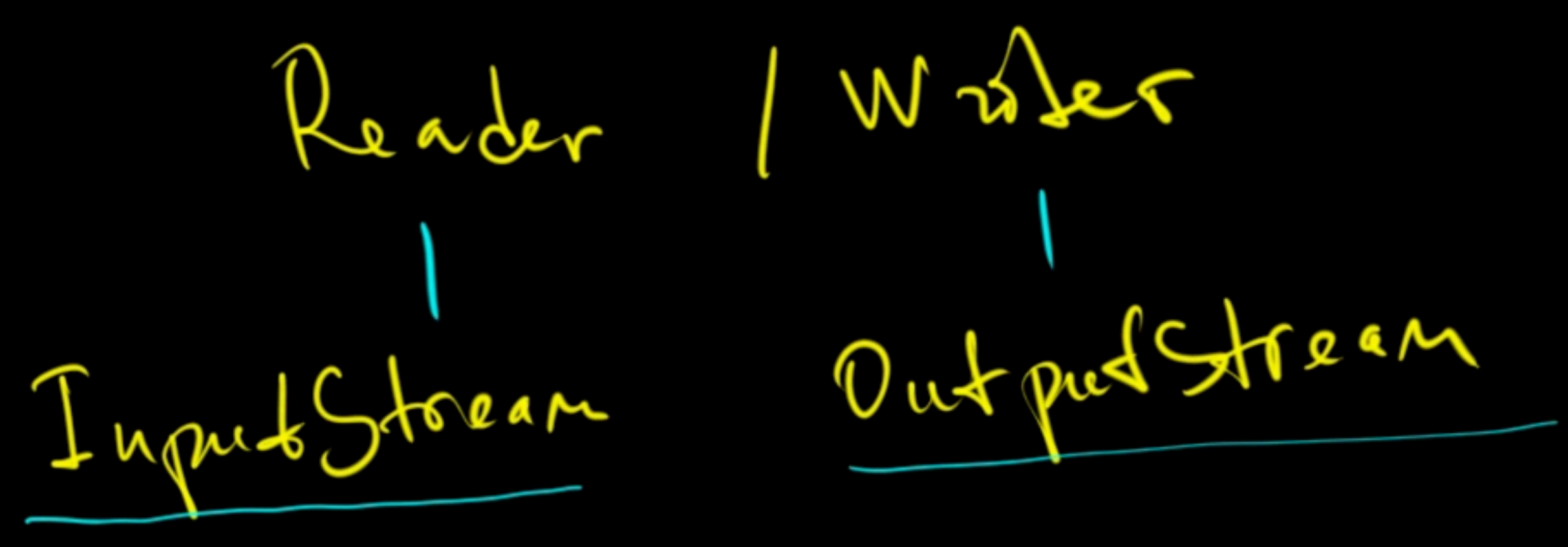
    void close()

```


A → file

file → A

file ≡ byte[]



A → file

A → byte[]

A → byte[] → file

file → A

byte[] → A

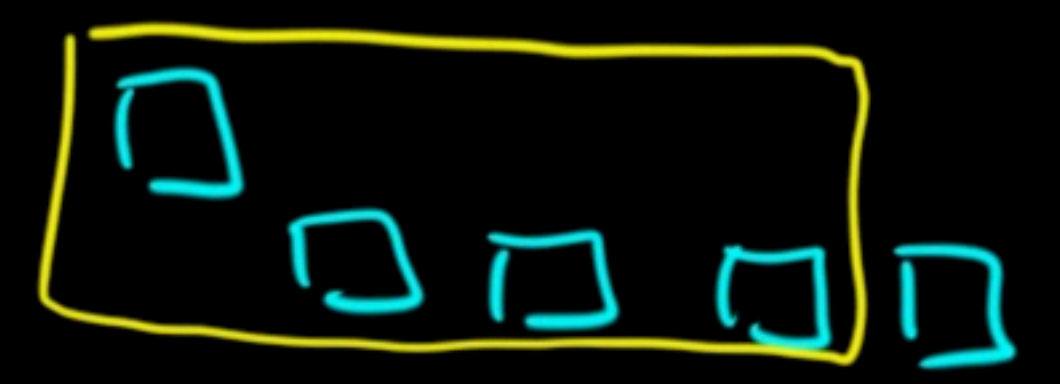
file → byte[] → A

!!w!sr"lesson16.ObjectsFileWriteApp\$Pizza/!!&X_!!IsizeLhametLjava/lang/String;xptMar%

```
try (ObjectOutputStream oos = new ObjectOutputStream(
    oos.writeBoolean(val: true);
    oos.writeByte(val: 33);
    oos.writeObject(new Pizza(name: "Mar", size: 30));
}
```

```
try (ObjectInputStream ois = new ObjectInputStream(
    boolean b = ois.readBoolean();
    byte b1 = ois.readByte();
    Object o = ois.readObject();
    Pizza pizza = (Pizza) o; // could be an exception
```


write Byte
write Int



read Int

```
public class ObjectsFileWriteApp {  
    static class Pizza implements Serializable {  
        String name;  
        int size;  
  
        public Pizza(String name, int size) {  
            this.name = name;  
            this.size = size;  
        }  
    }  
}
```

```
public class ObjectsFileReadApp {  
    static class Pizza implements Serializable {  
        String name;  
        int size;  
  
        public Pizza(String name, int size) {  
            this.name = name;  
            this.size = size;  
        }  
    }  
}
```