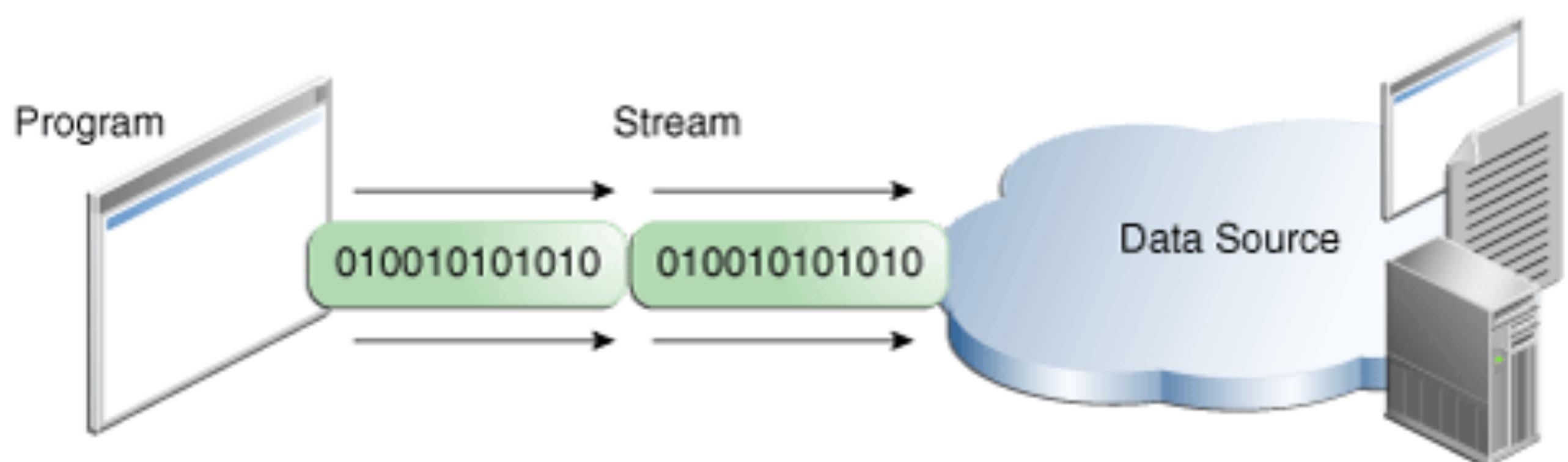
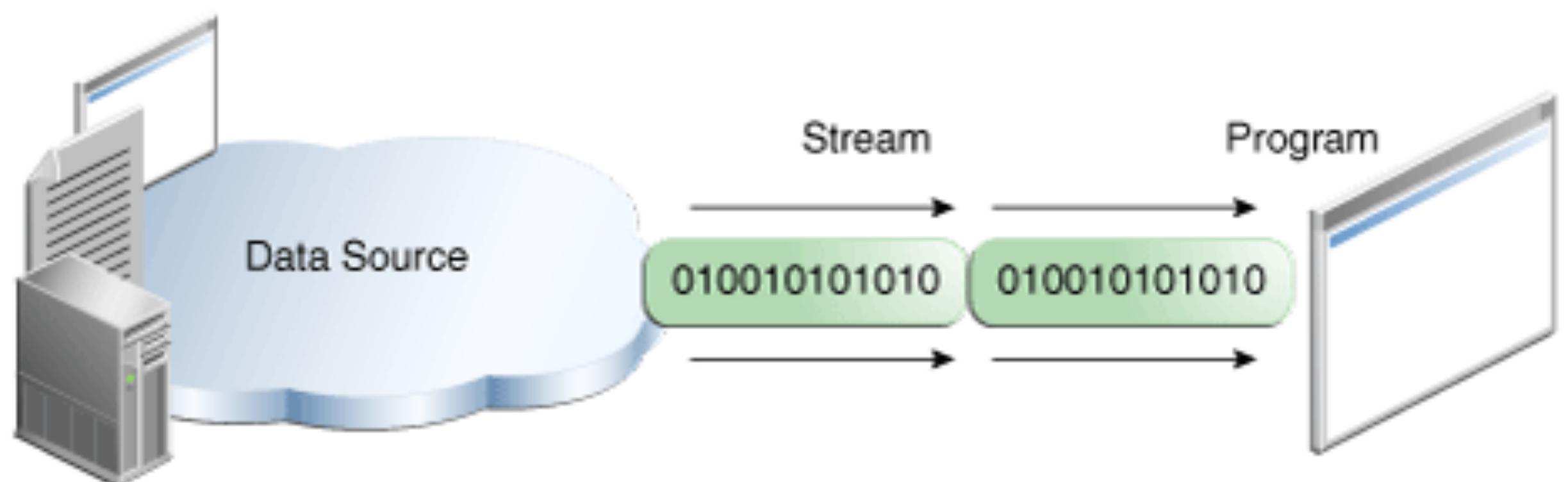


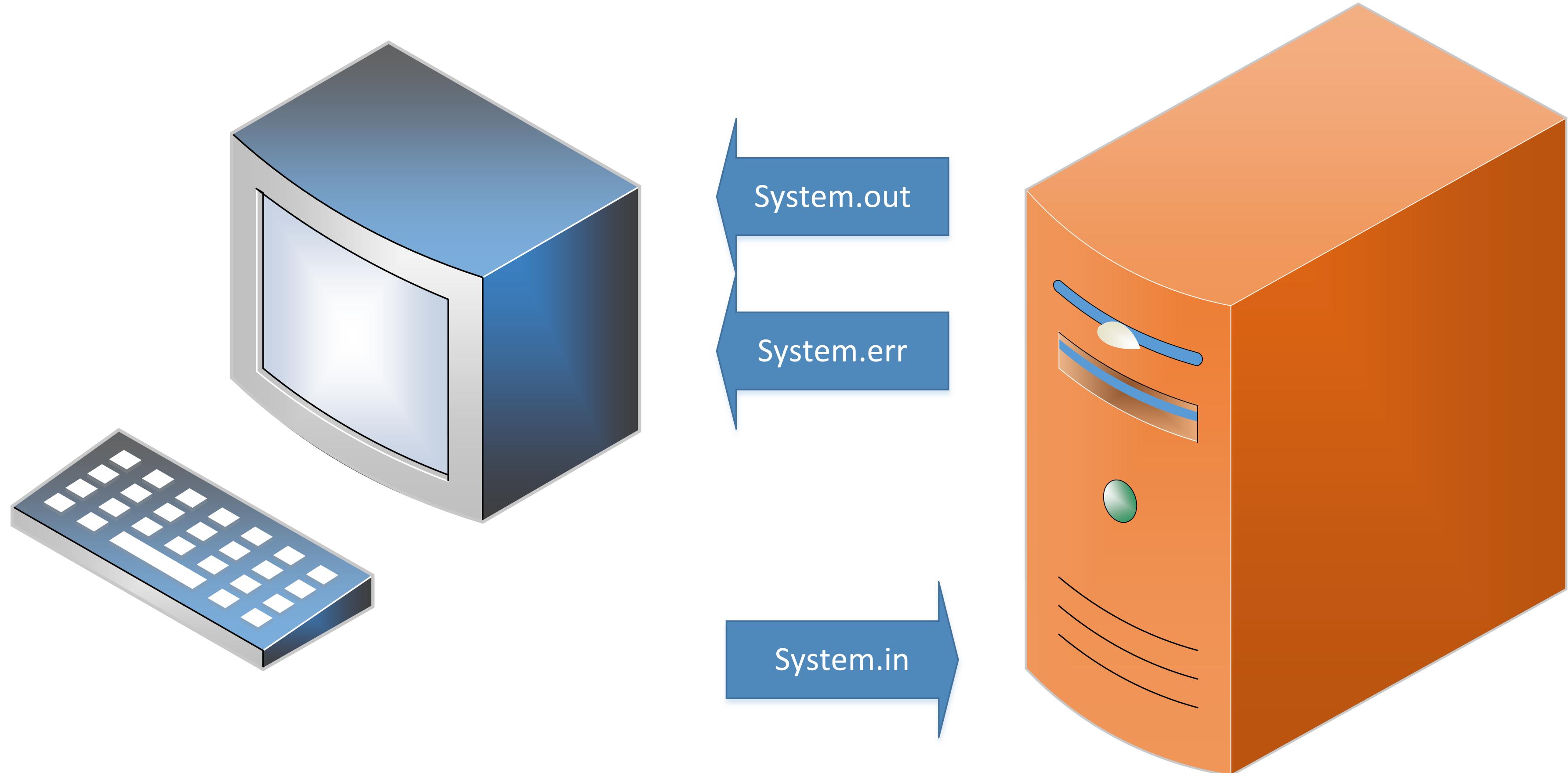
# Programming Using Java

Session 7: Input/Output

# Streams

- files abstracted as sequential streams
- user opens file via object
- interaction with file done using object methods





# Standard Streams

“...can be redirected to different devices...”

```
import java.nio.file.Path;
import java.nio.file.Paths;

public class App {
    public static void main(String[] args) {
        Path p1 = Paths.get("relative.txt");
        Path p2 = Paths.get("file://C:/sample.txt");
        Path p3 = Paths.get("http://www.horstmann.com/index.html");
    }
}
```

# Path Class

“used to get object representing a file or location”

```
import java.util.Formatter;
import java.io.IOException;

public class App {
    public static void main(String[] args) {
        try (Formatter f = new Formatter("out.txt")) {
            f.format("out text");
        catch (IOException e) {
            ...
        }
    }
}
```

# Writing To a File

“...formatter object is used to access file stream...”

```
import java.nio.file.Path;
import java.nio.file.Paths;
import java.util.Scanner;
import java.io.IOException;

public class App {
    public static void main(String[] args) {
        Path p1 = Paths.get("relative.txt");
        try (Scanner s = new Scanner(p1)) {
            while (s.hasNext()) Double d = s.nextDouble();
        } catch (IOException e) {
            ...
        }
    }
}
```

# Reading From a File

“...scanner object is used to access file stream...”