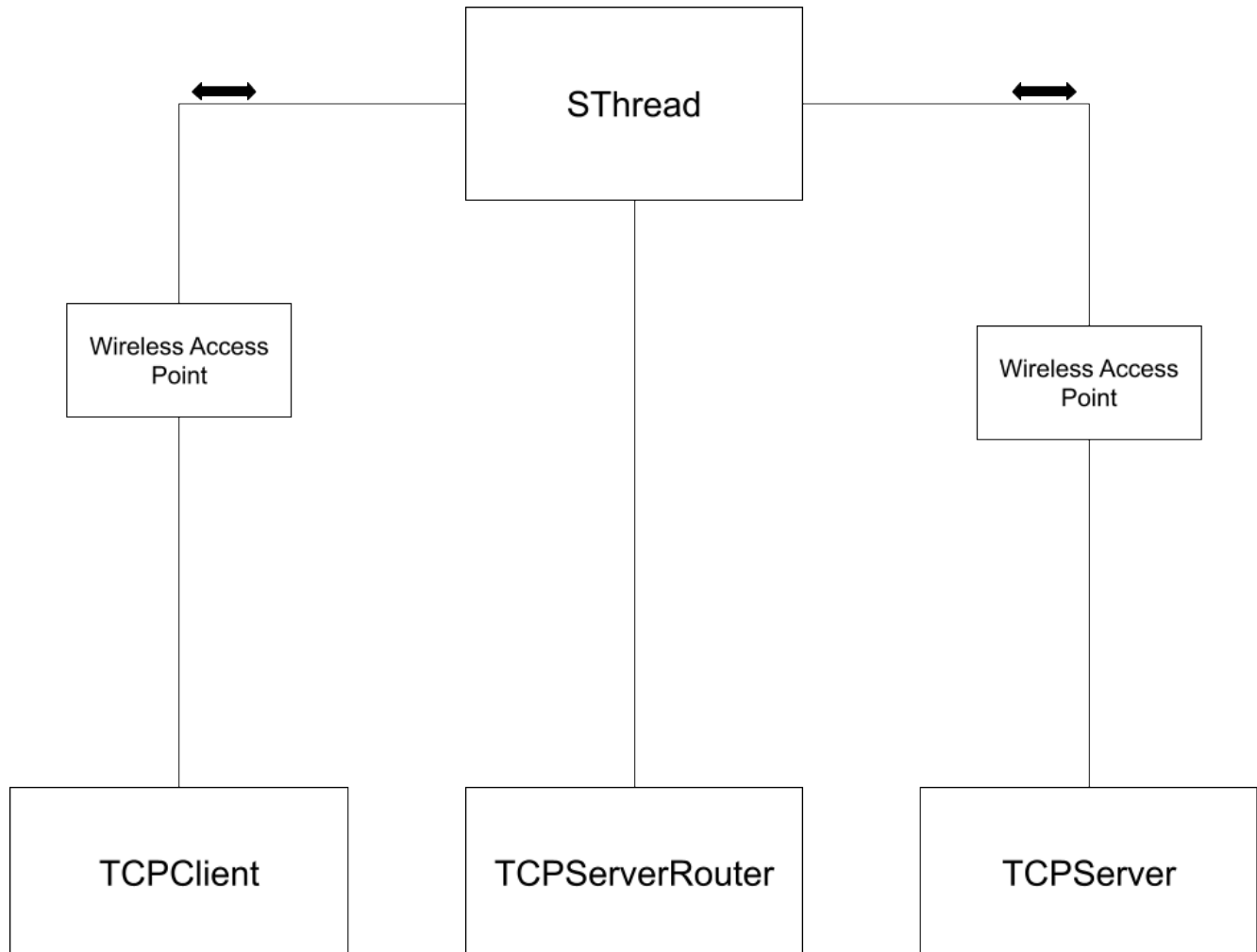# User Guide for CS 4504 Project Part 1

Created by Mae B. Morella, Mionne Gooch, William McNab, Louis Todd, Ethan Blaizis, and Stephen Flenniken

Functionality

This repository hosts three programs:

1. TCPServer
   - Receives messages from the client, and echoes them back in uppercase.
2. TCPClient
   - Reads a text file and transmits it to a socket.

3. TCPServerRouter
    ◦ Establishes socketed connections between Server and Client instances.
    ◦ Socket is closed when `"Bye.\n"` is received.

Configuration

The client and server programs load configuration data from environmental variables:

- `ROUTER_HOSTNAME` – The hostname of the device running the ServerRouter instance.
- `DESTINATION_IP` – The IP address of the server/client instance for the program to connect to.

To make these values persistent, set them as system-wide variables (platform-dependent), or define them in a file named `.env`, as explained below.

To deploy

1. Clone the project repository:
   ```
   git clone https://github.com/Mgooch2/ParallelDistrib_Project.git
   cd ParallelDistrib_Project
   ```

2. Compile the Java classes
   ```
   javac @classes
   ```

3. Create a file called .env containing the following definitions:
   ```
   # The hostname of the TCPServerRouter instance
   ROUTER_HOSTNAME=localhost
   # The IP address of the server/client to connect to
   DESTINATION_IP=127.0.0.1
   ```

    ◦ For a connection between multiple machines, these should be changed to the desired values.
    ◦ On Windows and POSIX systems, the `hostname` command will print the system's hostname.

- On Windows, the `ipconfig` command will print this. On most Linux systems, `ip addr`, `hostname -I`, or `ifconfig` will print the system's IP address.

4. On one system, launch the TCPServerRouter program.
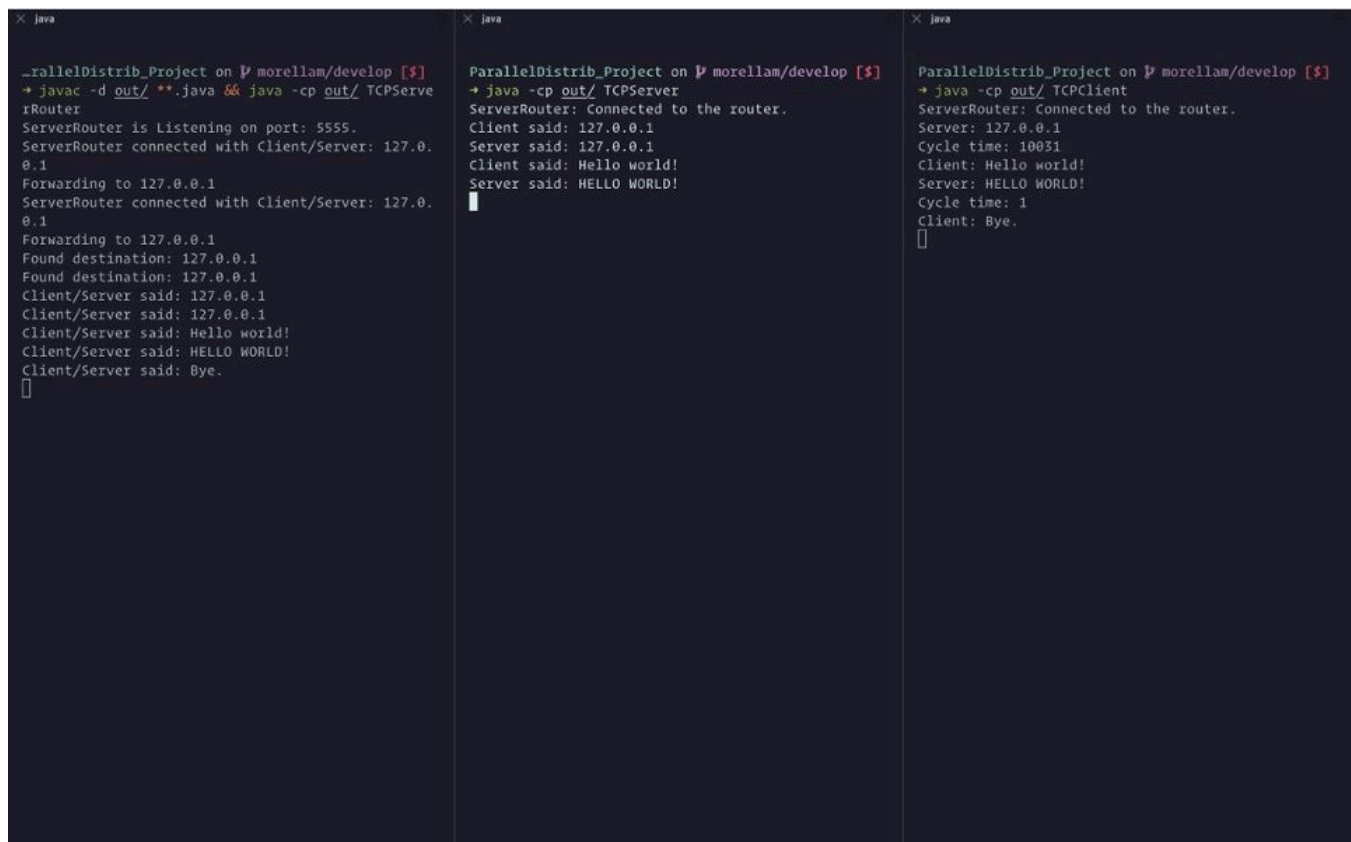
```
java -cp src/ TCPServerRouter
```

5. On another system, launch the TCPServer

```
java -cp src/ TCPServer
```

6. Finally, invoke the client process with the name of a text file

```
java -cp src/ TCPClient txt/file.txt
```

Output

Copyright notice