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DIC project (p1)

1. **Instantiate one server s1, two whiteboards b1 and b2, and four clients.**
    1. **Use as many hosts as possible. For C+RPC, use at least two different CPU types, if possible.**
    2. **Click a few lines in each drawlines-window to show that the "original" functionality is still present.**

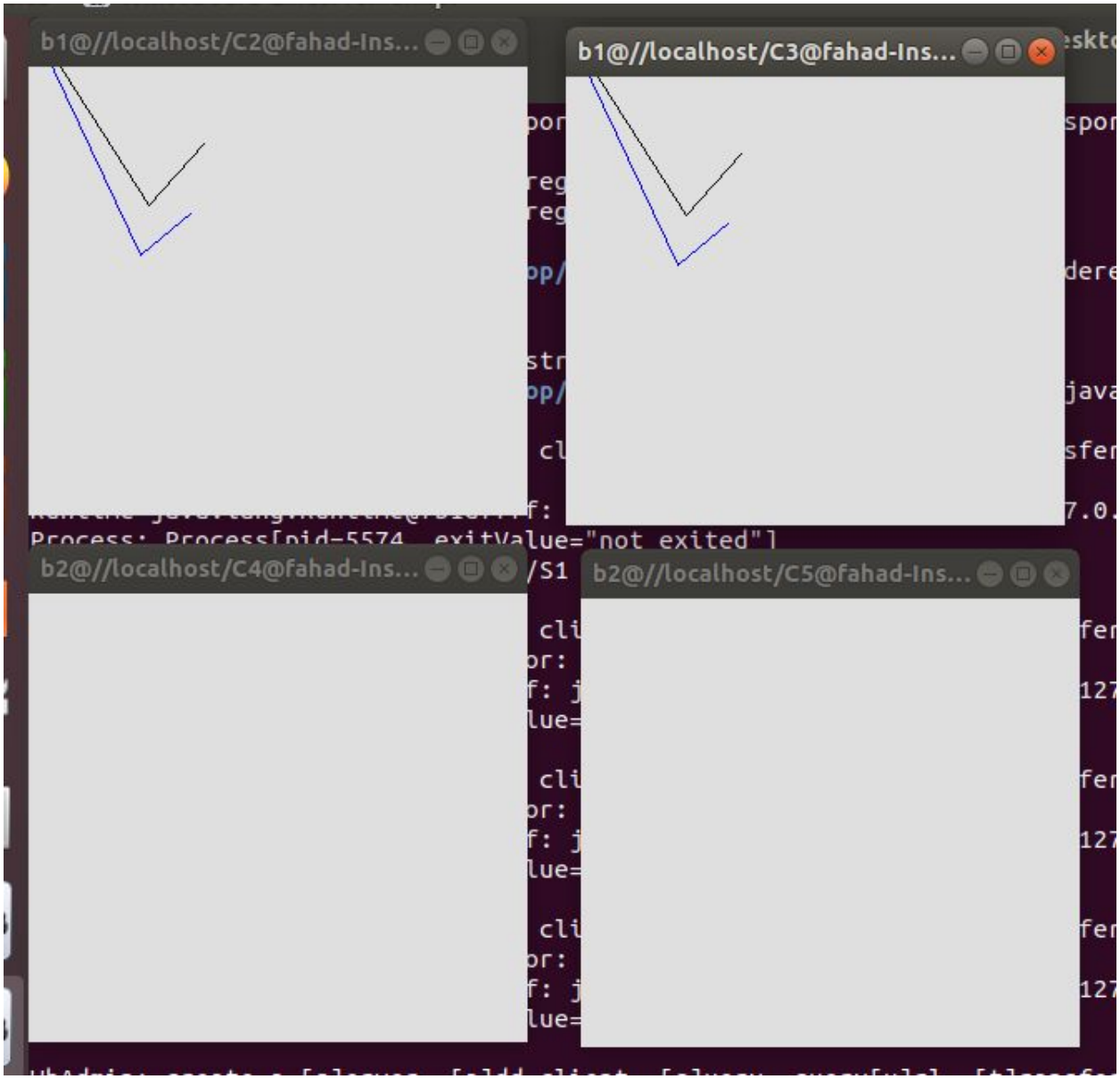
(started server S1 at url //localhost/S1)

```
fahad@fahad-Inspiron-5521:~/Desktop/dic/dic_projects/p2/WB-Java-RMI$ java WhiteBoard.WbAdmin

WbAdmin: create a [s]erver, [a]dd client, [q]uery, query[u]rl, [t]ransfer, e[x]it: s
ServerMachineName: 127.0.0.1
Runtime java.lang.Runtime@7b1d7fff: java WhiteBoard.WbServerImpl 1 127.0.0.1
Process: Process[pid=8254, exitValue="not exited"]
url of new server is: //localhost/S1
```

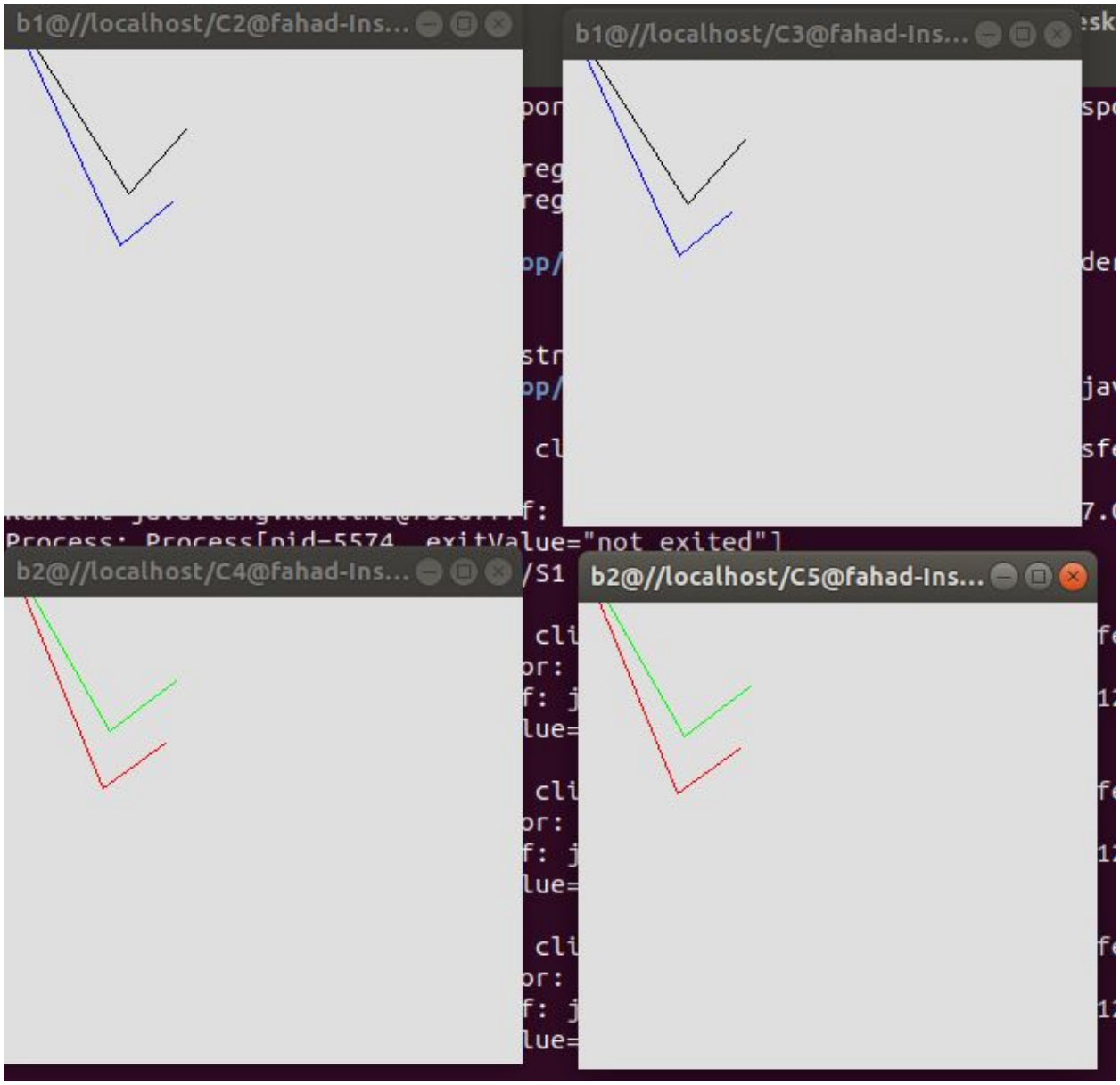
(started 4 clients, 2 on each whiteboard b1 and b2 on server S1)

```
WbAdmin: create a [s]erver, [a]dd client, [q]uery, query[u]rl, [t]ransfer, e[x]it: a
BoardName DisplayOn ServerURL color: b1 127.0.0.1 //localhost/S1 0
Runtime java.lang.Runtime@7b1d7fff: java WhiteBoard.WbClientImpl 2 b1 127.0.0.1 //localhost/S1 0
Process: Process[pid=5620, exitValue="not exited"]

WbAdmin: create a [s]erver, [a]dd client, [q]uery, query[u]rl, [t]ransfer, e[x]it: a
BoardName DisplayOn ServerURL color: b1 127.0.0.1 //localhost/S1 ff
Runtime java.lang.Runtime@7b1d7fff: java WhiteBoard.WbClientImpl 3 b1 127.0.0.1 //localhost/S1 ff
Process: Process[pid=5684, exitValue="not exited"]

WbAdmin: create a [s]erver, [a]dd client, [q]uery, query[u]rl, [t]ransfer, e[x]it: a
BoardName DisplayOn ServerURL color: b2 127.0.0.1 //localhost/S1 ff00
Runtime java.lang.Runtime@7b1d7fff: java WhiteBoard.WbClientImpl 4 b2 127.0.0.1 //localhost/S1 ff00
Process: Process[pid=5751, exitValue="not exited"]

WbAdmin: create a [s]erver, [a]dd client, [q]uery, query[u]rl, [t]ransfer, e[x]it: a
BoardName DisplayOn ServerURL color: b2 127.0.0.1 //localhost/S1 ff0000
Runtime java.lang.Runtime@7b1d7fff: java WhiteBoard.WbClientImpl 5 b2 127.0.0.1 //localhost/S1 ff0000
Process: Process[pid=5811, exitValue="not exited"]

WbAdmin: create a [s]erver, [a]dd client, [q]uery, query[u]rl, [t]ransfer, e[x]it:
```

(drew lines on b1 by both clients)



(drew lines on b2 by both clients)



2. **Start a new server s2 on a new host. Add a whiteboard b3 with one client to s2. Do 1.2 again.**

(stated new server S2 on url //localhost/S6)

```
WbAdmin: create a [s]erver, [a]dd client, [q]uery, query[u]rl, [t]ransfer, e[x]it: s
ServerMachineName: 127.0.0.1
Runtime java.lang.Runtime@7b1d7fff: java WhiteBoard.WbServerImpl 6 127.0.0.1
Process: Process[pid=6029, exitValue="not exited"]
url of new server is: //localhost/S6

WbAdmin: create a [s]erver, [a]dd client, [q]uery, query[u]rl, [t]ransfer, e[x]it: a
BoardName DisplayOn ServerURL color: b3 127.0.0.1 //localhost/S6 ffff
Runtime java.lang.Runtime@7b1d7fff: java WhiteBoard.WbClientImpl 7 b3 127.0.0.1 //localhost/S6 ffff
Process: Process[pid=6110, exitValue="not exited"]

WbAdmin: create a [s]erver, [a]dd client, [q]uery, query[u]rl, [t]ransfer, e[x]it:
```

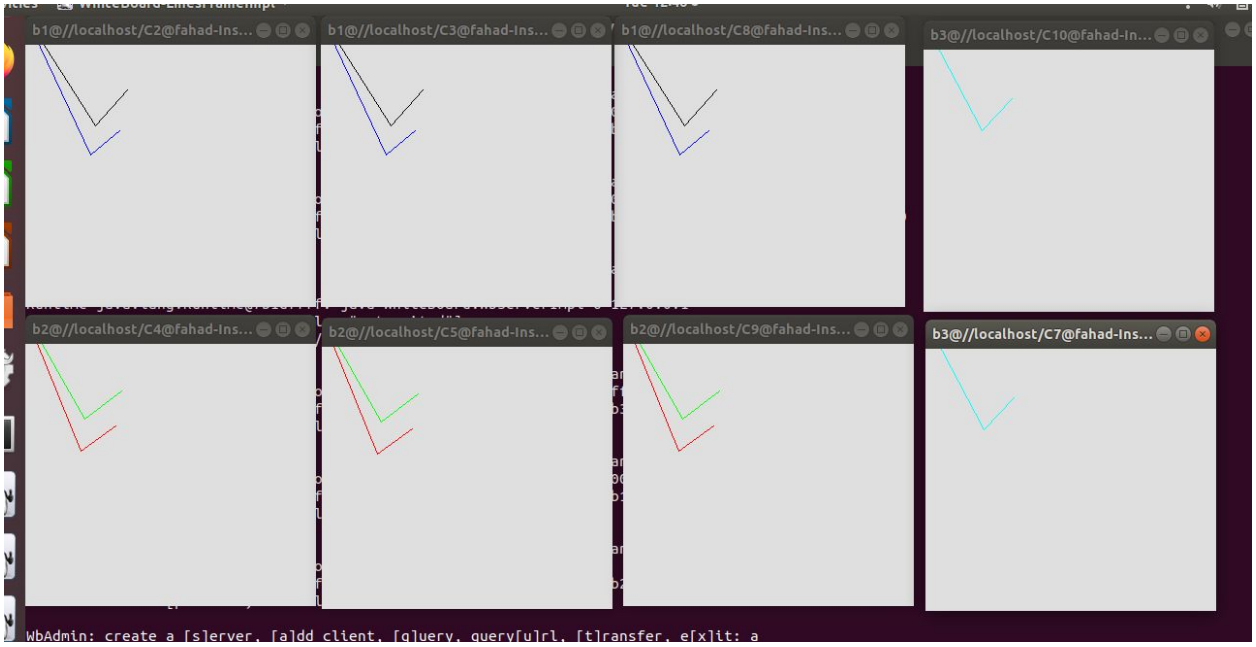
(started new client on new board b3 on S2, drew lines)

3. **Add a new client to each of the existing whiteboards. Do 1.2 again**

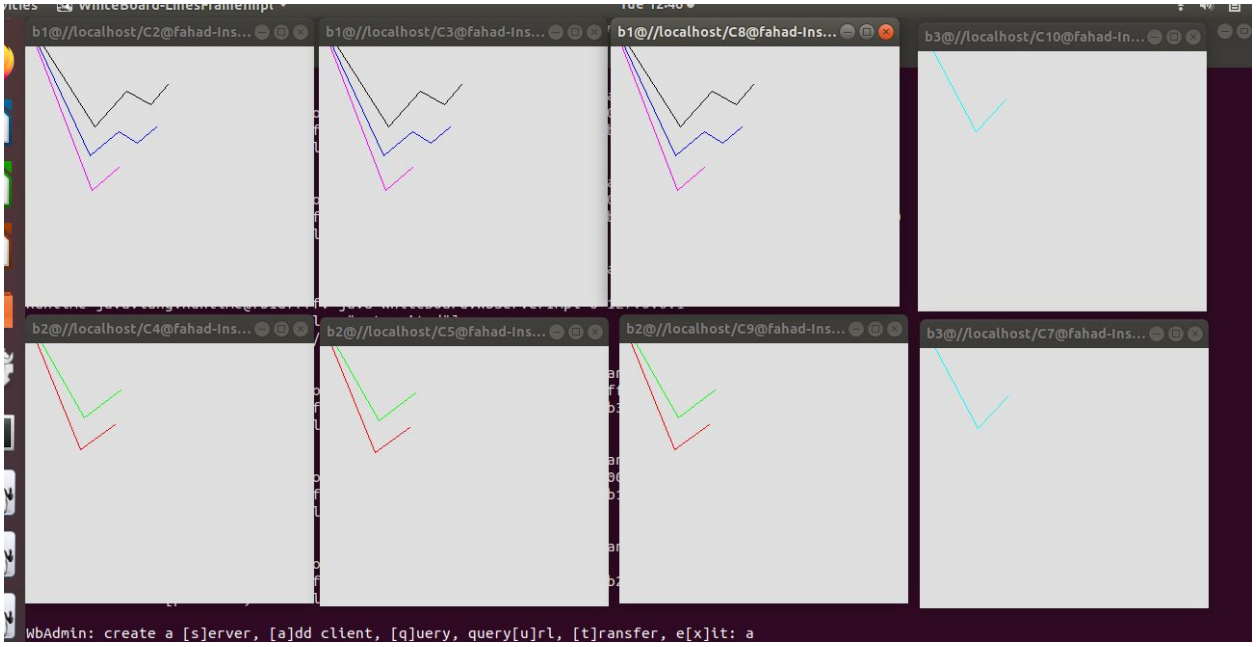
(started one new client on each board b1, b2 and b3)

```
WbAdmin: create a [s]erver, [a]dd client, [q]uery, query[u]rl, [t]ransfer, e[x]it: a
BoardName DisplayOn ServerURL color: b1 127.0.0.1 //localhost/S1 ff00ff
Runtime java.lang.Runtime@7b1d7fff: java WhiteBoard.WbClientImpl 8 b1 127.0.0.1 //localhost/S1 ff00ff
Process: Process[pid=6270, exitValue="not exited"]

WbAdmin: create a [s]erver, [a]dd client, [q]uery, query[u]rl, [t]ransfer, e[x]it: a
BoardName DisplayOn ServerURL color: b2 127.0.0.1 //localhost/S1 0
Runtime java.lang.Runtime@7b1d7fff: java WhiteBoard.WbClientImpl 9 b2 127.0.0.1 //localhost/S1 0
Process: Process[pid=6333, exitValue="not exited"]

WbAdmin: create a [s]erver, [a]dd client, [q]uery, query[u]rl, [t]ransfer, e[x]it: a
BoardName DisplayOn ServerURL color: b3 127.0.0.1 //localhost/S6 ff
Runtime java.lang.Runtime@7b1d7fff: java WhiteBoard.WbClientImpl 10 b3 127.0.0.1 //localhost/S6 ff
Process: Process[pid=6401, exitValue="not exited"]
```

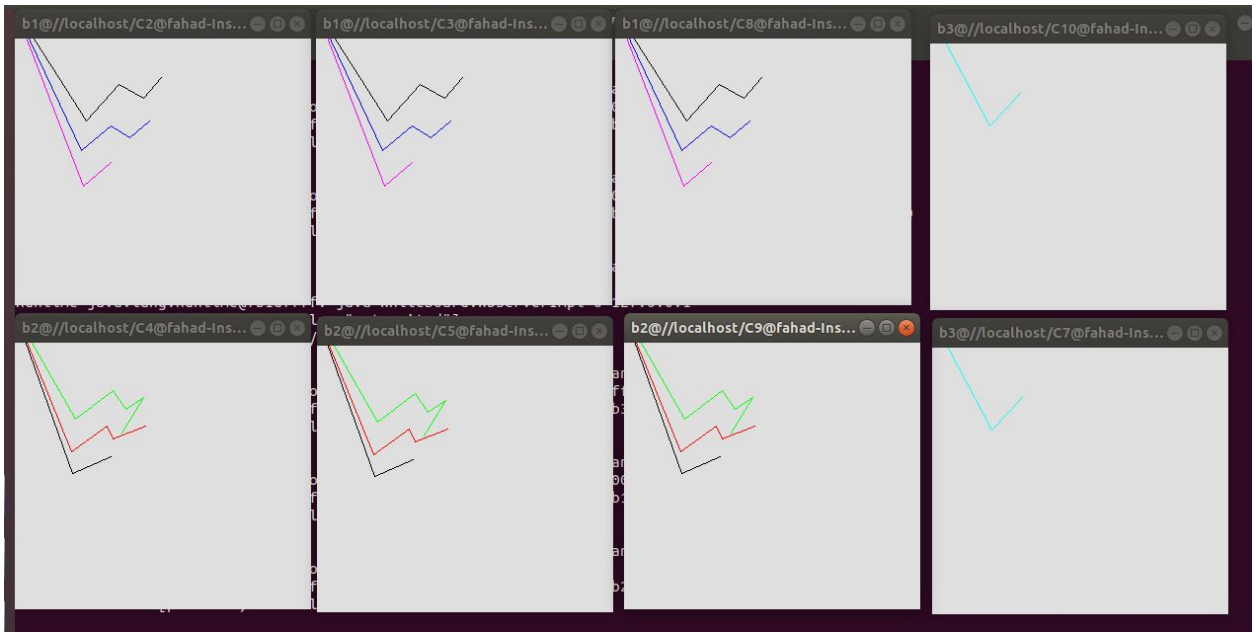
(brfore drawing new lines)



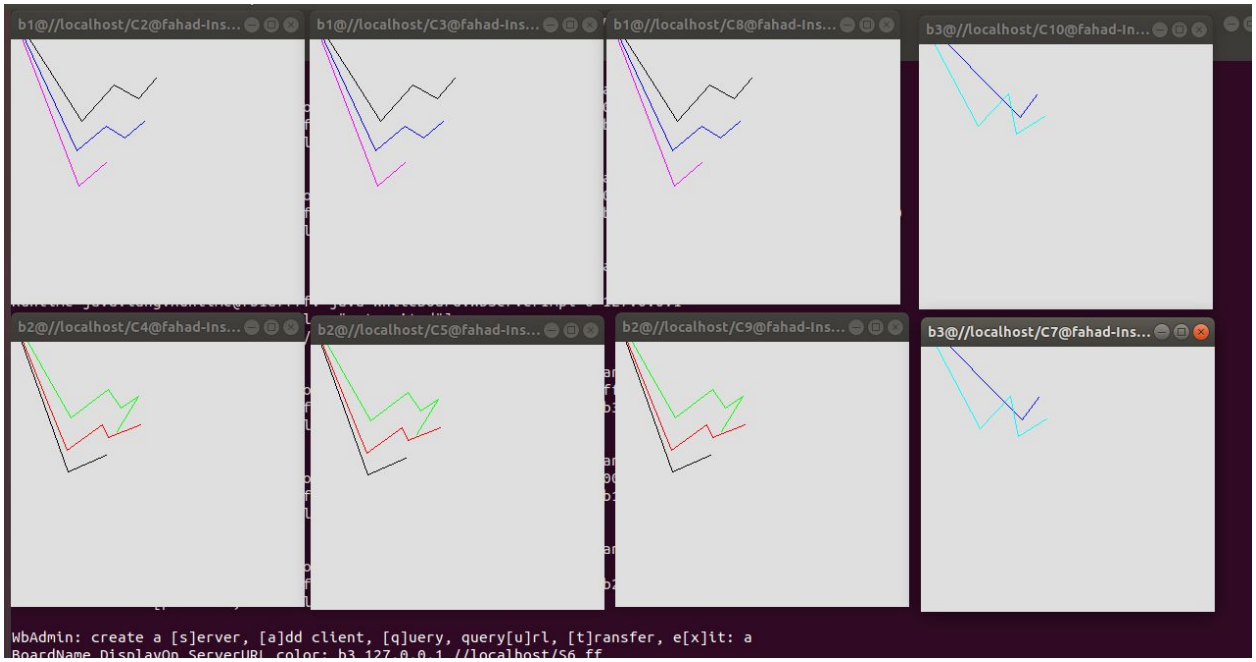
(drew lines on b1)



(drew lines on b2)



(drew lines on b3)



4. **Transfer b2 (and all clients on it) to s2. Do 1.2 again. Show what is where.**

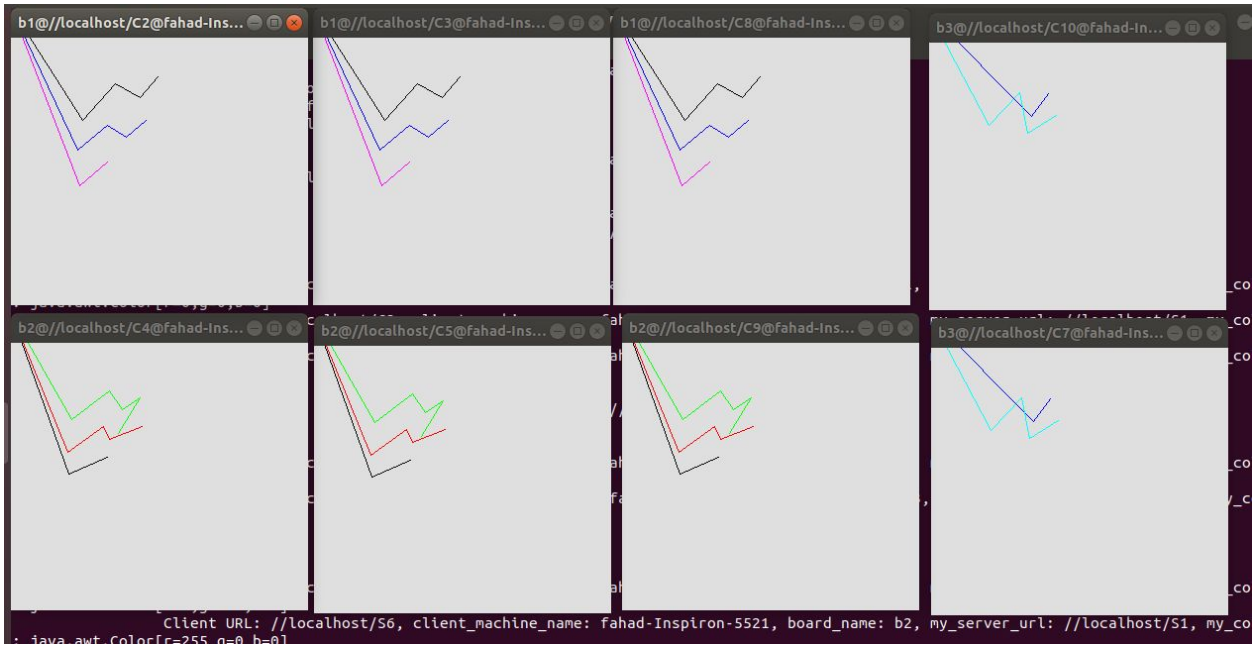
(transferred b2 from S1 to S2)

```
WbAdmin: create a [s]erver, [a]dd client, [q]uery, query[u]rl, [t]ransfer, e[x]it: t
URL_from BoardName URL_to: //localhost/S1 b2 //localhost/S6
```

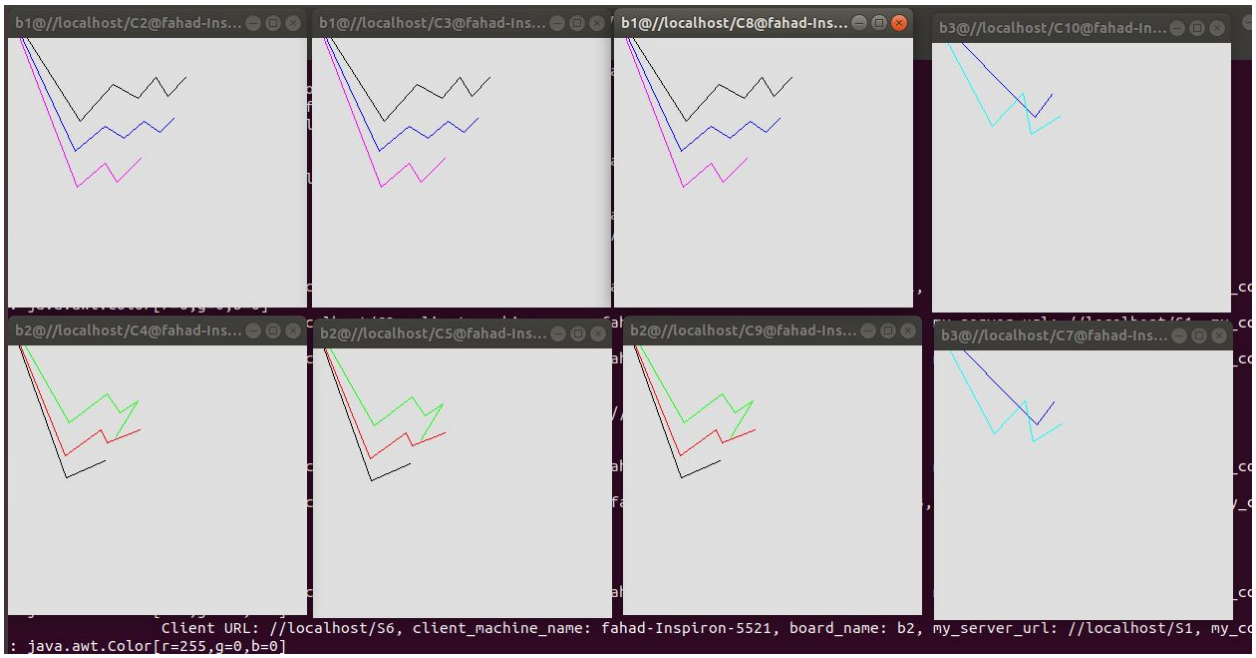
(query showing that now S1 has b1 and S2 has b2 and b3)

```
WbAdmin: create a [s]erver, [a]dd client, [q]uery, query[u]rl, [t]ransfer, e[x]it: q
                        ***------ information about Server at url: //localhost/S1 -----***
        boardname: b1
        clients on this board:
                Client URL: //localhost/C2, client_machine_name: fahad-Inspiron-5521, board_name: b1, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=0,g=0,b=0]
                Client URL: //localhost/C3, client_machine_name: fahad-Inspiron-5521, board_name: b1, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=0,g=0,b=255]
                Client URL: //localhost/C8, client_machine_name: fahad-Inspiron-5521, board_name: b1, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=255,g=0,b=255]

                        ***------ information about Server at url: //localhost/S6 -----***
        boardname: b3
        clients on this board:
                Client URL: //localhost/C7, client_machine_name: fahad-Inspiron-5521, board_name: b3, my_server_url: //localhost/S6, my_color
: java.awt.Color[r=0,g=255,b=255]
                Client URL: //localhost/C10, client_machine_name: fahad-Inspiron-5521, board_name: b3, my_server_url: //localhost/S6, my_colo
r: java.awt.Color[r=0,g=0,b=255]

        boardname: b2
        clients on this board:
                Client URL: //localhost/S6, client_machine_name: fahad-Inspiron-5521, board_name: b2, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=0,g=255,b=0]
                Client URL: //localhost/S6, client_machine_name: fahad-Inspiron-5521, board_name: b2, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=255,g=0,b=0]
                Client URL: //localhost/S6, client_machine_name: fahad-Inspiron-5521, board_name: b2, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=0,g=0,b=0]
```

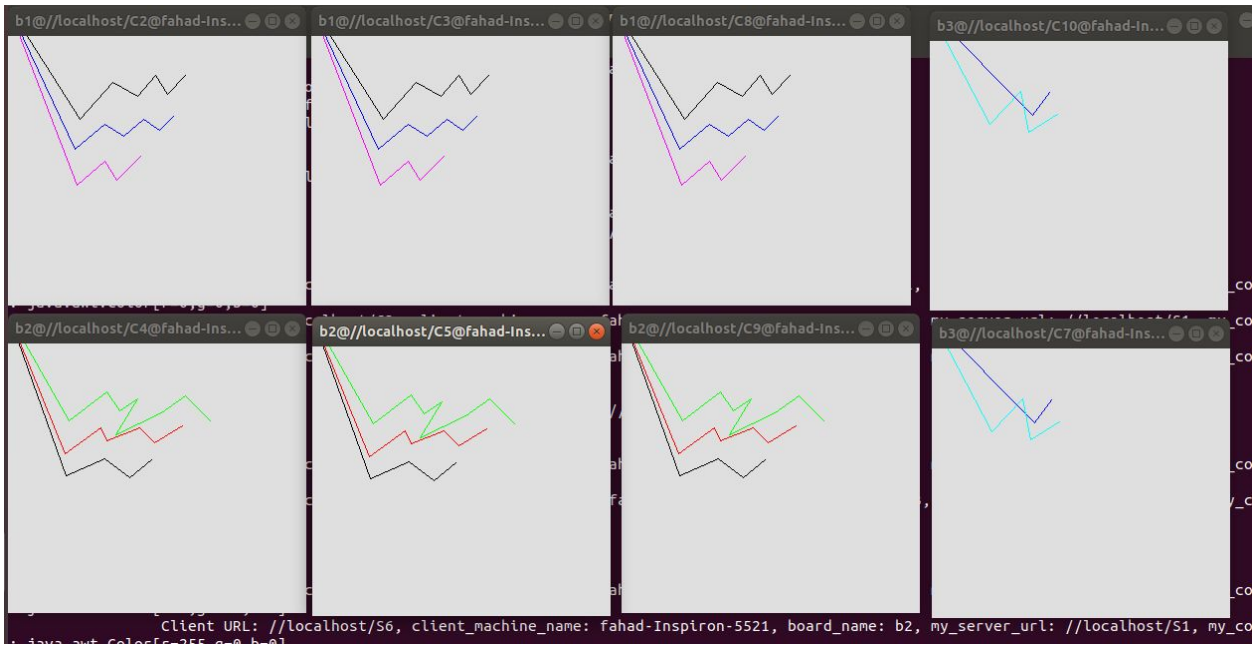
(before drawing new lines)



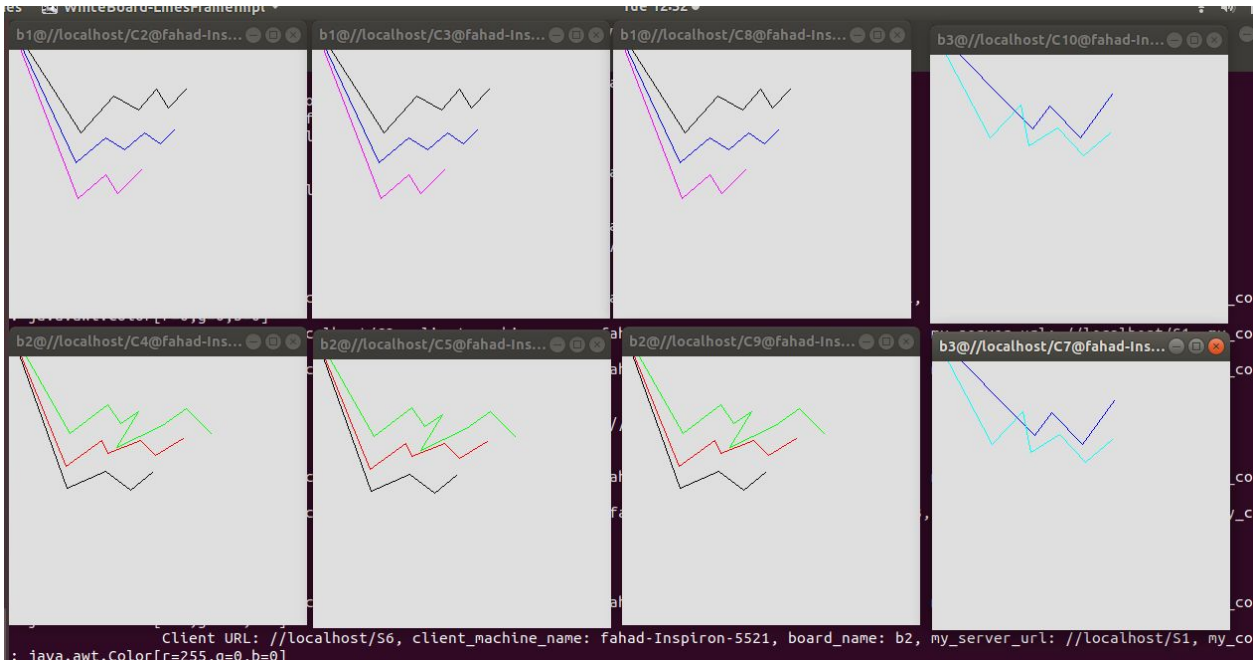
(drew new lines on board B1)



(drew new lines on board B2)



(drew new lines on board B3)

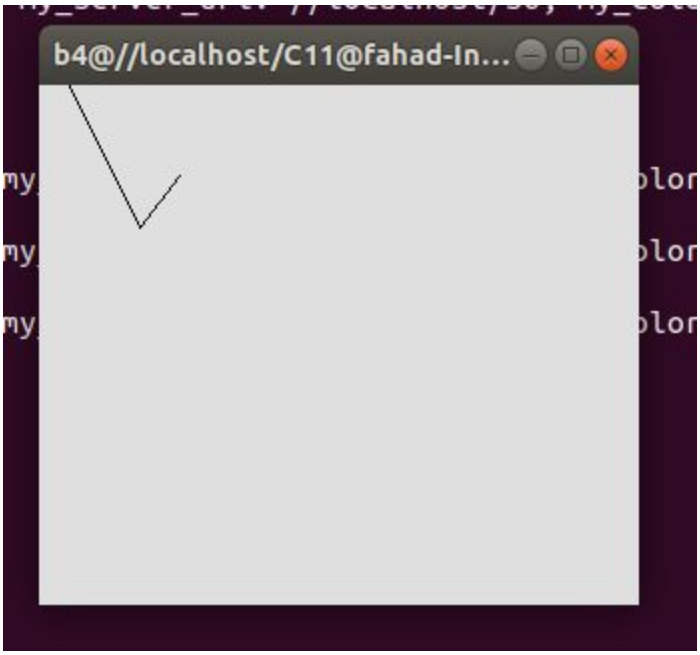


5. **Add a new whiteboard b4 with just one client to server s1. Do 1.2 again.**

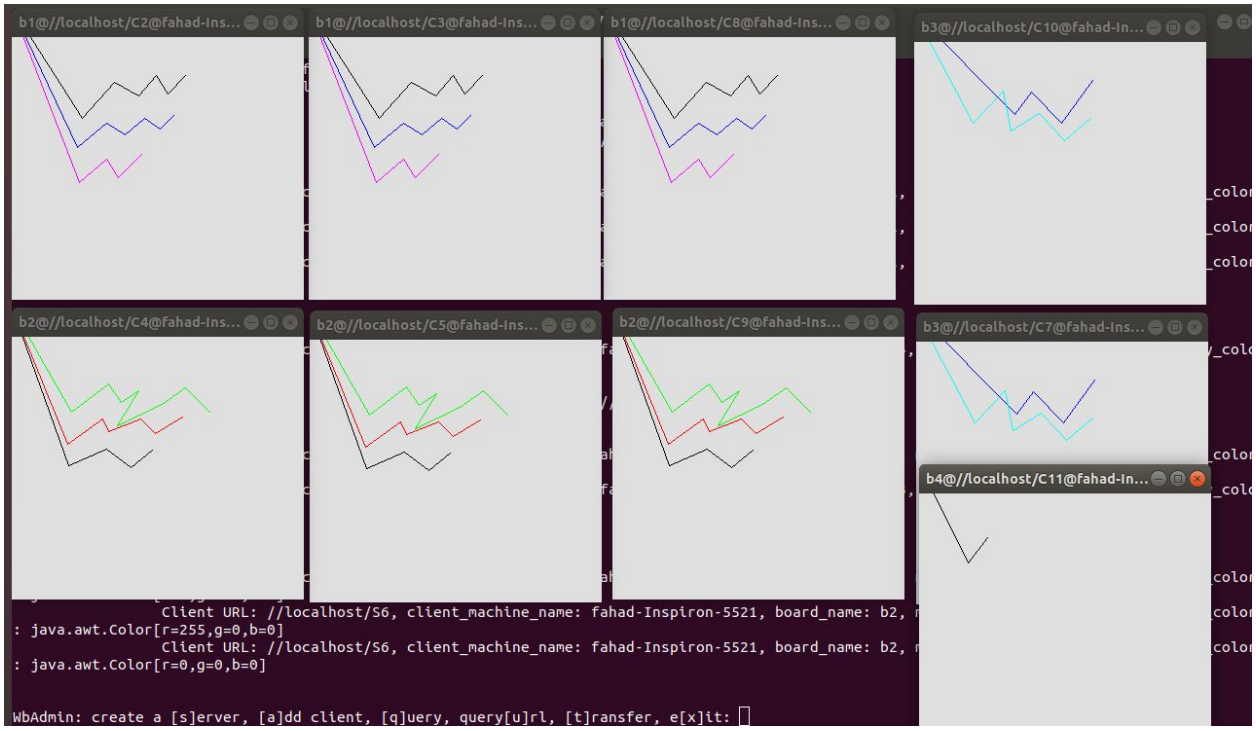
(started a new client on a new board b4 on server S1)

```
WbAdmin: create a [s]erver, [a]dd client, [q]uery, query[u]rl, [t]ransfer, e[x]it: a
BoardName DisplayOn ServerURL color: b4 127.0.0.1 //localhost/S1 0
Runtime java.lang.Runtime@7b1d7fff: java WhiteBoard.WbClientImpl 11 b4 127.0.0.1 //localhost/S1 0
Process: Process[pid=7040, exitValue="not exited"]
```

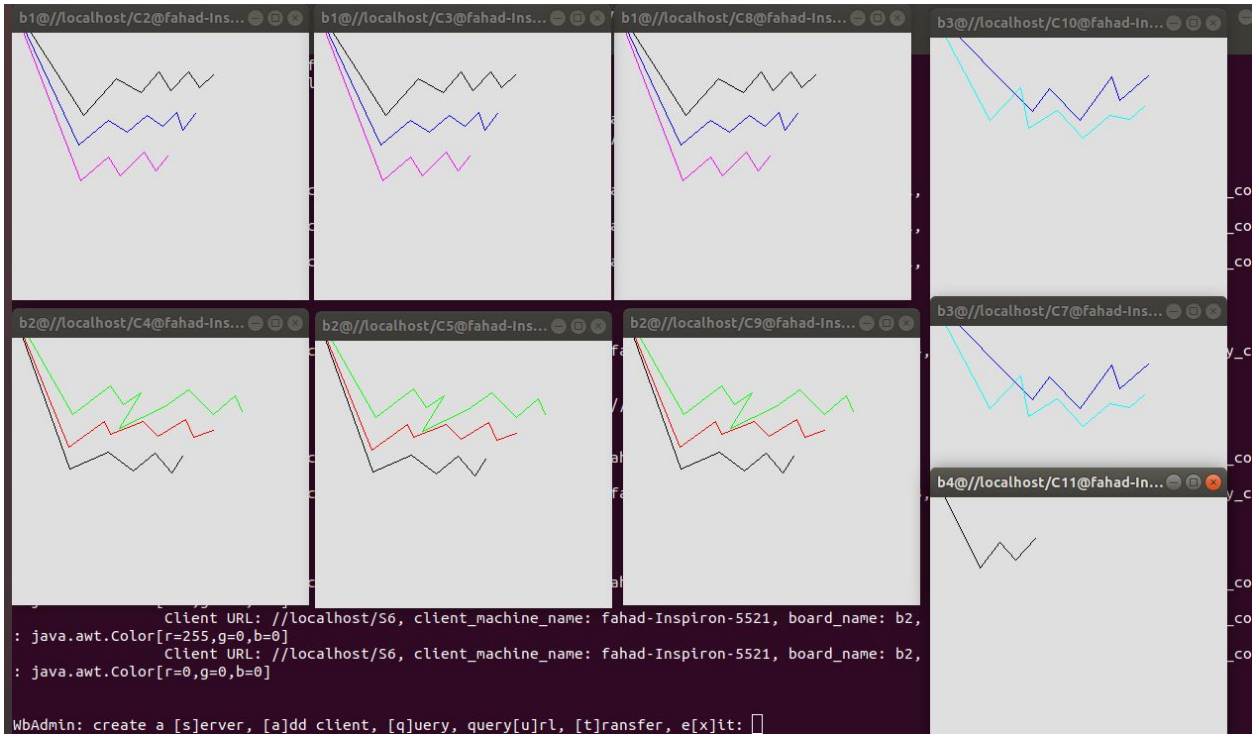
(drew lines on b4)



(before drawing new lines)



(drew new lines on all boards b1, b2, b3, b4)



6. **Transfer b3 to s1. Transfer b4 to s2. Do 1.2 again. Show what is where.**

(query showing s1 has b1 and b4, s2 has b3 and b2)

```
WbAdmin: create a [s]erver, [a]dd client, [q]uery, query[u]rl, [t]ransfer, e[x]it: q
                        ***------ information about Server at url: //localhost/S1 -----***
        boardname: b1
        clients on this board:
                 Client URL: //localhost/C2, client_machine_name: fahad-Inspiron-5521, board_name: b1, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=0,g=0,b=0]
                 Client URL: //localhost/C3, client_machine_name: fahad-Inspiron-5521, board_name: b1, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=0,g=0,b=255]
                 Client URL: //localhost/C8, client_machine_name: fahad-Inspiron-5521, board_name: b1, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=255,g=0,b=255]

        boardname: b4
        clients on this board:
                 Client URL: //localhost/C11, client_machine_name: fahad-Inspiron-5521, board_name: b4, my_server_url: //localhost/S1, my_colo
r: java.awt.Color[r=0,g=0,b=0]

                        ***------ information about Server at url: //localhost/S6 -----***
        boardname: b3
        clients on this board:
                 Client URL: //localhost/C7, client_machine_name: fahad-Inspiron-5521, board_name: b3, my_server_url: //localhost/S6, my_color
: java.awt.Color[r=0,g=255,b=255]
                 Client URL: //localhost/C10, client_machine_name: fahad-Inspiron-5521, board_name: b3, my_server_url: //localhost/S6, my_colo
r: java.awt.Color[r=0,g=0,b=255]

        boardname: b2
        clients on this board:
                 Client URL: //localhost/S6, client_machine_name: fahad-Inspiron-5521, board_name: b2, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=0,g=255,b=0]
                 Client URL: //localhost/S6, client_machine_name: fahad-Inspiron-5521, board_name: b2, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=255,g=0,b=0]
                 Client URL: //localhost/S6, client_machine_name: fahad-Inspiron-5521, board_name: b2, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=0,g=0,b=0]
```

(transferred b3 from S2 to S1)

```
WbAdmin: create a [s]erver, [a]dd client, [q]uery, query[u]rl, [t]ransfer, e[x]it: t
URL_from BoardName URL_to: //localhost/S6 b3 //localhost/S1
```

(query showing that now S1 has B1, B3 and B4 while S2 has B2 only)

```
WbAdmin: create a [s]erver, [a]dd client, [q]uery, query[u]rl, [t]ransfer, e[x]it: q
                        ***------ information about Server at url: //localhost/S1 -----***
        boardname: b1
        clients on this board:
                 Client URL: //localhost/C2, client_machine_name: fahad-Inspiron-5521, board_name: b1, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=0,g=0,b=0]
                 Client URL: //localhost/C3, client_machine_name: fahad-Inspiron-5521, board_name: b1, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=0,g=0,b=255]
                 Client URL: //localhost/C8, client_machine_name: fahad-Inspiron-5521, board_name: b1, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=255,g=0,b=255]

        boardname: b4
        clients on this board:
                 Client URL: //localhost/C11, client_machine_name: fahad-Inspiron-5521, board_name: b4, my_server_url: //localhost/S1, my_colo
r: java.awt.Color[r=0,g=0,b=0]

        boardname: b3
        clients on this board:
                 Client URL: //localhost/S1, client_machine_name: fahad-Inspiron-5521, board_name: b3, my_server_url: //localhost/S6, my_color
: java.awt.Color[r=0,g=255,b=255]
                 Client URL: //localhost/S1, client_machine_name: fahad-Inspiron-5521, board_name: b3, my_server_url: //localhost/S6, my_color
: java.awt.Color[r=0,g=0,b=255]

                        ***------ information about Server at url: //localhost/S6 -----***
        boardname: b2
        clients on this board:
                 Client URL: //localhost/S6, client_machine_name: fahad-Inspiron-5521, board_name: b2, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=0,g=255,b=0]
                 Client URL: //localhost/S6, client_machine_name: fahad-Inspiron-5521, board_name: b2, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=255,g=0,b=0]
                 Client URL: //localhost/S6, client_machine_name: fahad-Inspiron-5521, board_name: b2, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=0,g=0,b=0]
```

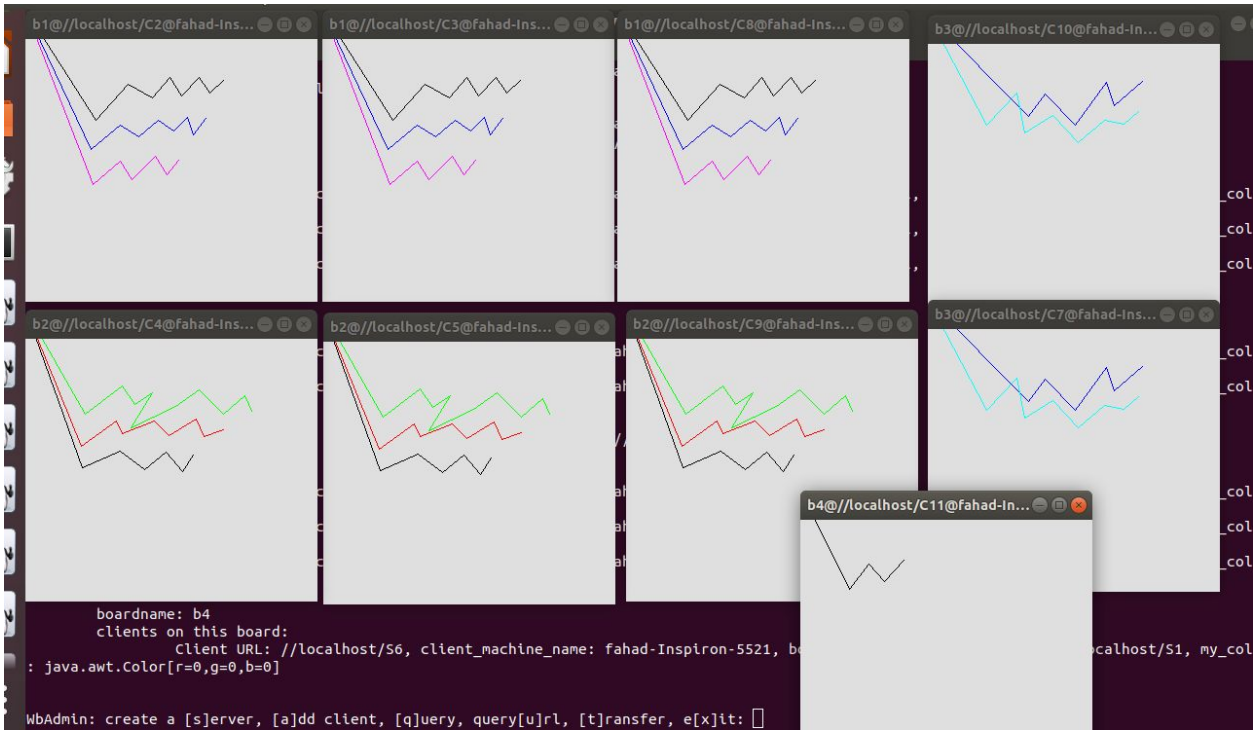
(query to transfer b4 from S1 to S2)

```
WbAdmin: create a [s]erver, [a]dd client, [q]uery, query[u]rl, [t]ransfer, e[x]it: t
URL_from BoardName URL_to: //localhost/S1 b4 //localhost/S6
```

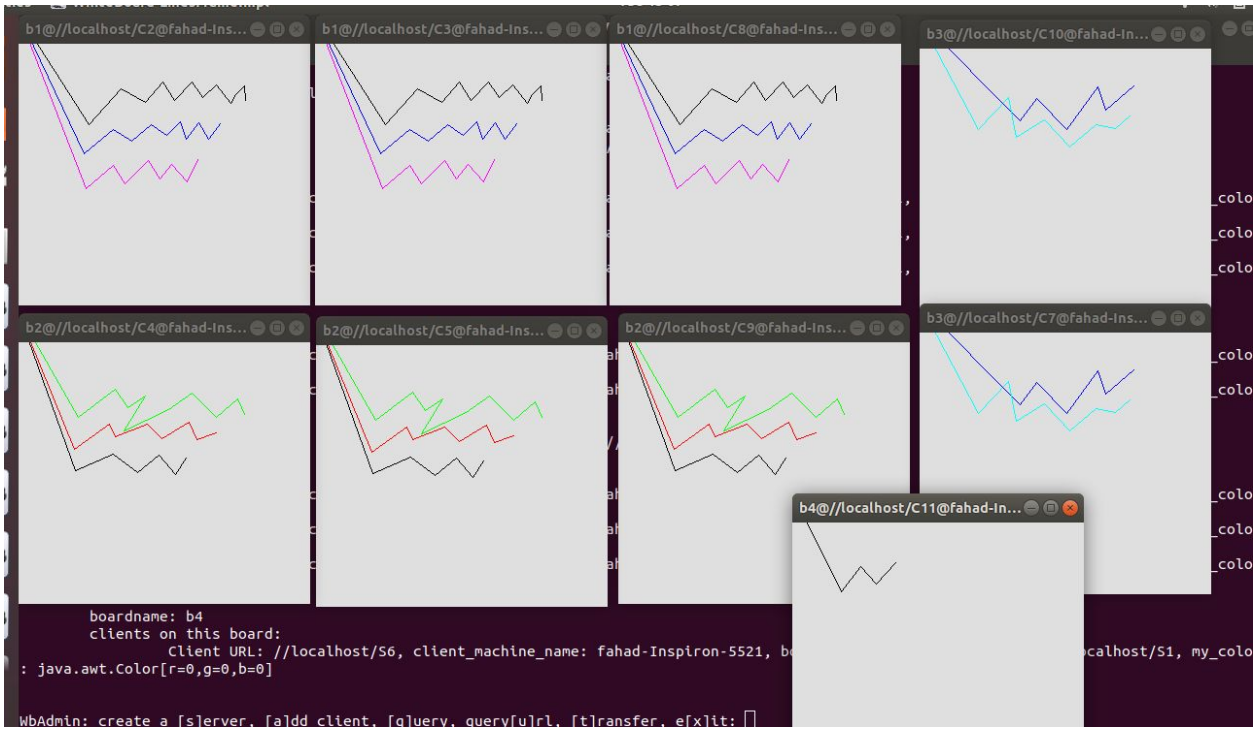
(query showing that now S1 has b1 and b3, while S2 has b2 and b4)

```
WbAdmin: create a [s]erver, [a]dd client, [q]uery, query[u]rl, [t]ransfer, e[x]it: q
                        ***------ information about Server at url: //localhost/S1 -----***
        boardname: b1
        clients on this board:
                Client URL: //localhost/C2, client_machine_name: fahad-Inspiron-5521, board_name: b1, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=0,g=0,b=0]
                Client URL: //localhost/C3, client_machine_name: fahad-Inspiron-5521, board_name: b1, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=0,g=0,b=255]
                Client URL: //localhost/C8, client_machine_name: fahad-Inspiron-5521, board_name: b1, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=255,g=0,b=255]

        boardname: b3
        clients on this board:
                Client URL: //localhost/S1, client_machine_name: fahad-Inspiron-5521, board_name: b3, my_server_url: //localhost/S6, my_color
: java.awt.Color[r=0,g=255,b=255]
                Client URL: //localhost/S1, client_machine_name: fahad-Inspiron-5521, board_name: b3, my_server_url: //localhost/S6, my_color
: java.awt.Color[r=0,g=0,b=255]

                        ***------ information about Server at url: //localhost/S6 -----***
        boardname: b2
        clients on this board:
                Client URL: //localhost/S6, client_machine_name: fahad-Inspiron-5521, board_name: b2, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=0,g=255,b=0]
                Client URL: //localhost/S6, client_machine_name: fahad-Inspiron-5521, board_name: b2, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=255,g=0,b=0]
                Client URL: //localhost/S6, client_machine_name: fahad-Inspiron-5521, board_name: b2, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=0,g=0,b=0]

        boardname: b4
        clients on this board:
                Client URL: //localhost/S6, client_machine_name: fahad-Inspiron-5521, board_name: b4, my_server_url: //localhost/S1, my_color
: java.awt.Color[r=0,g=0,b=0]
```

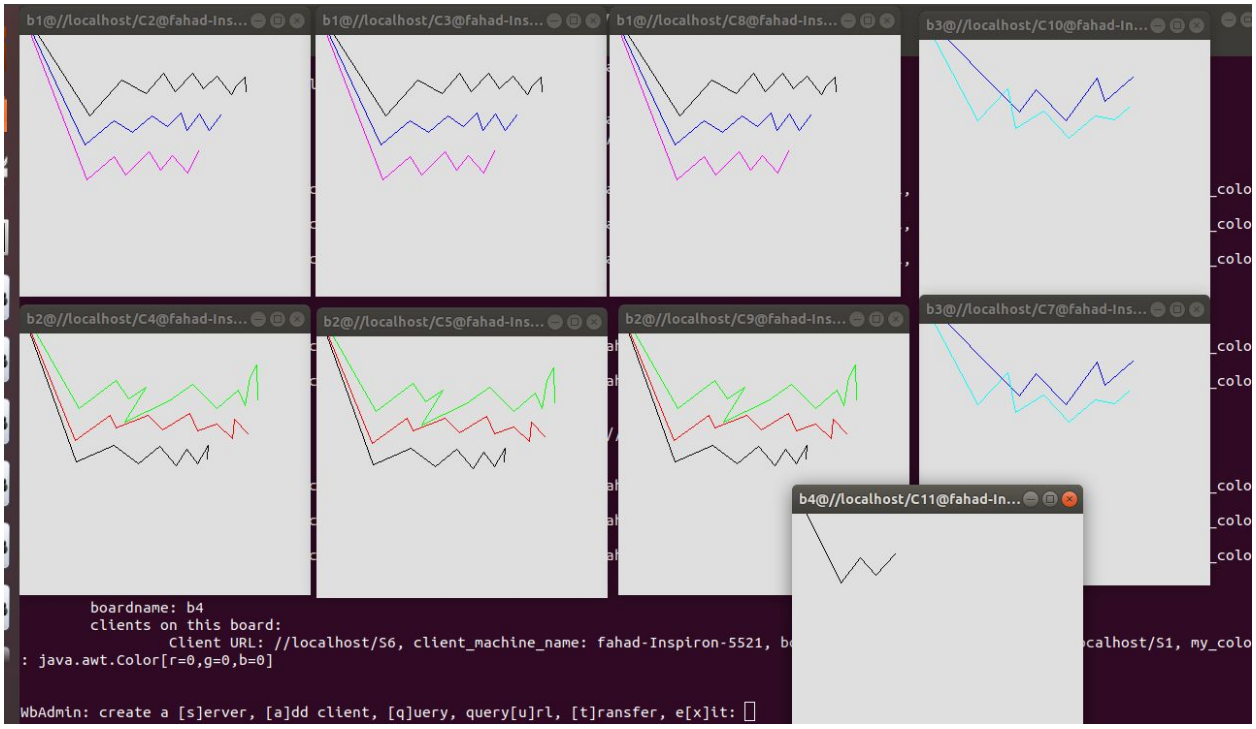
(before drawing new lines)



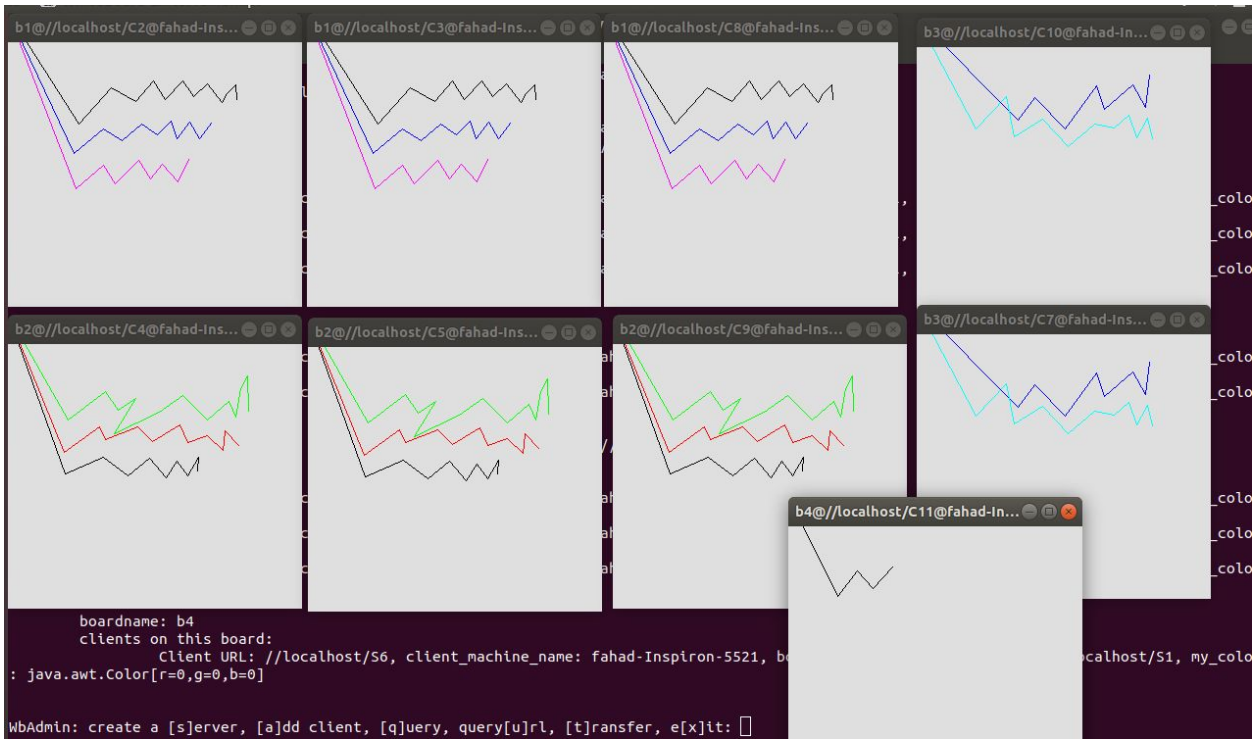
(drew new line on b1)



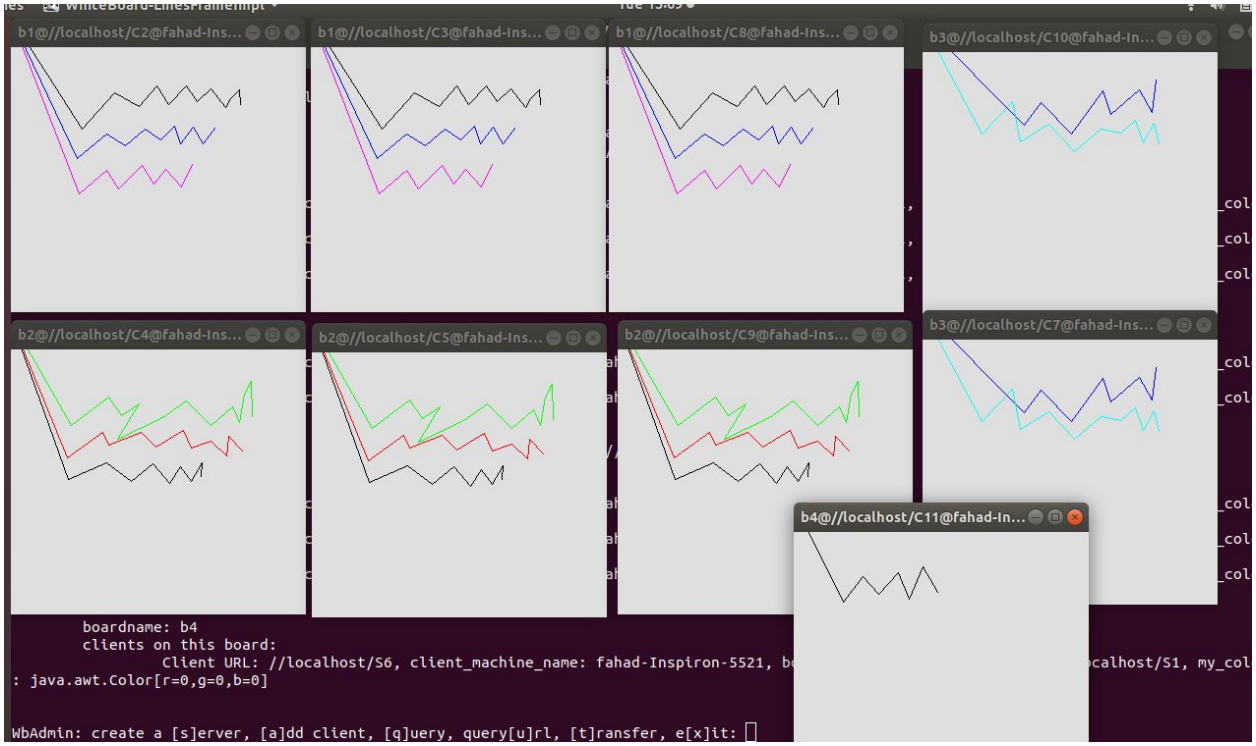
(drew new line on b2)



(drew new line on b3)

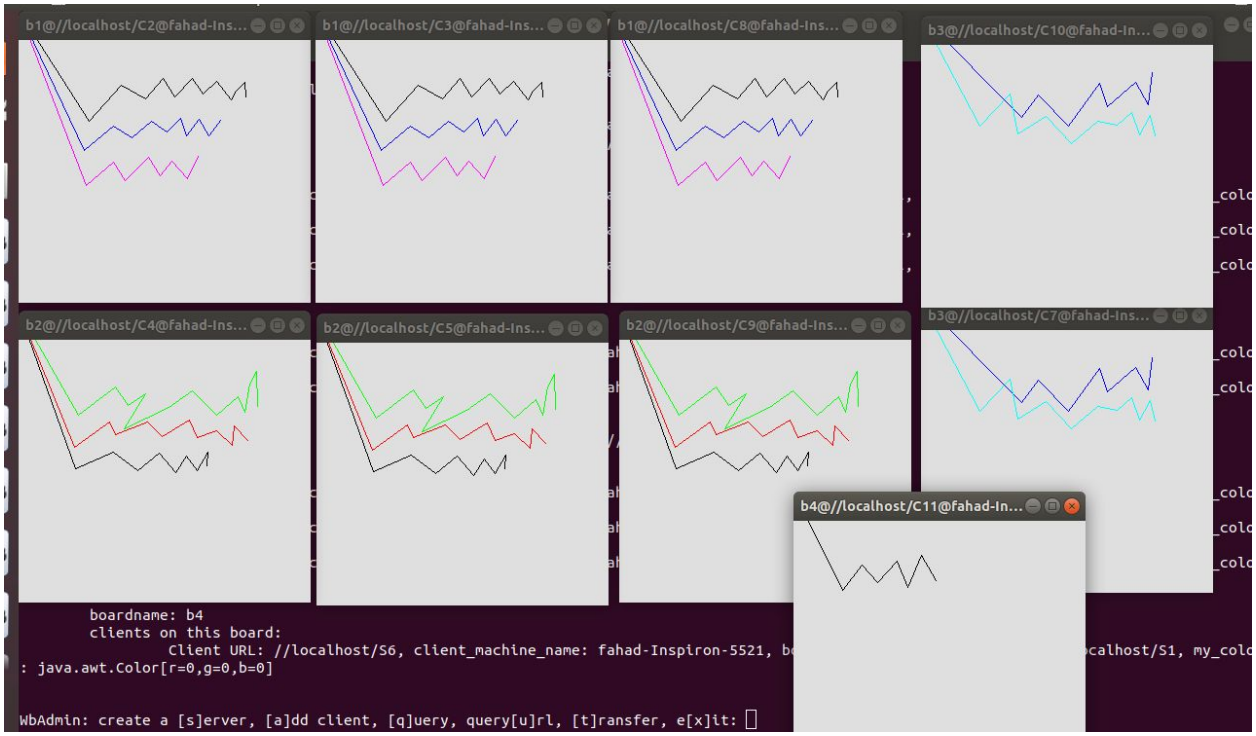


(drew new line on b4)

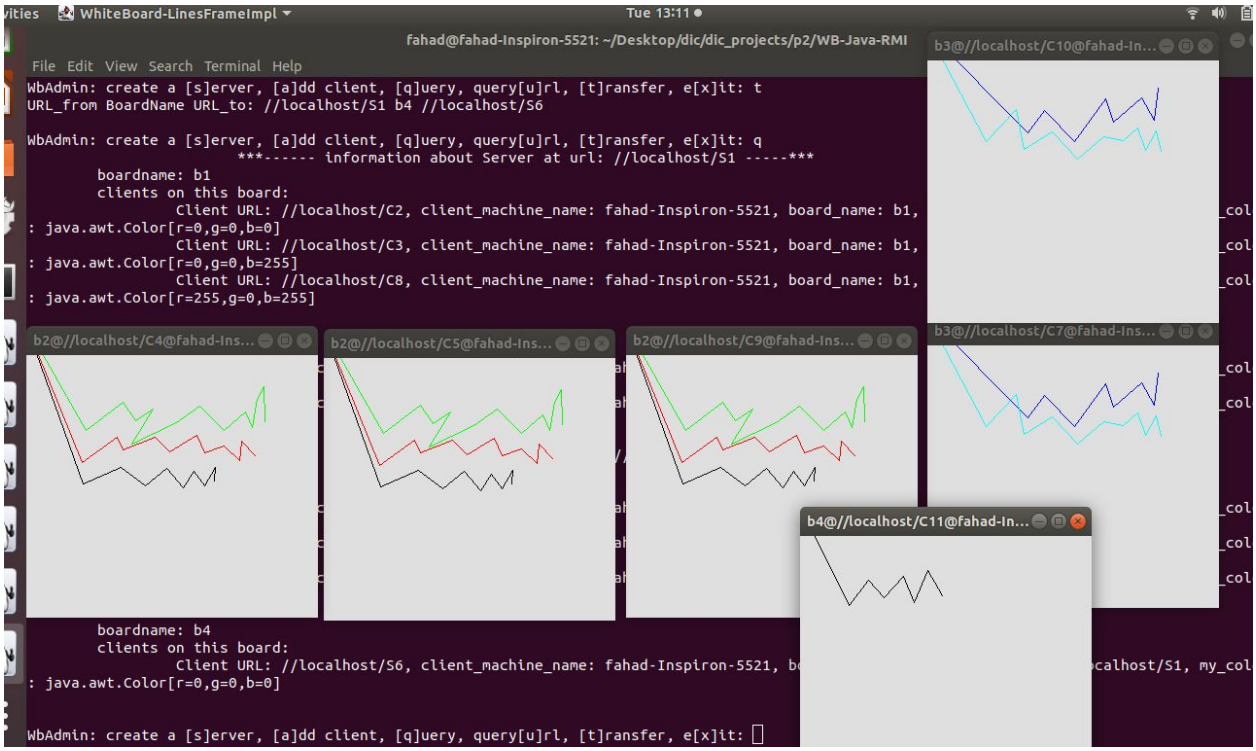


7. **Terminate each client by right-clicking. Show the results via ps (For P1: rpcinfo -p also).**

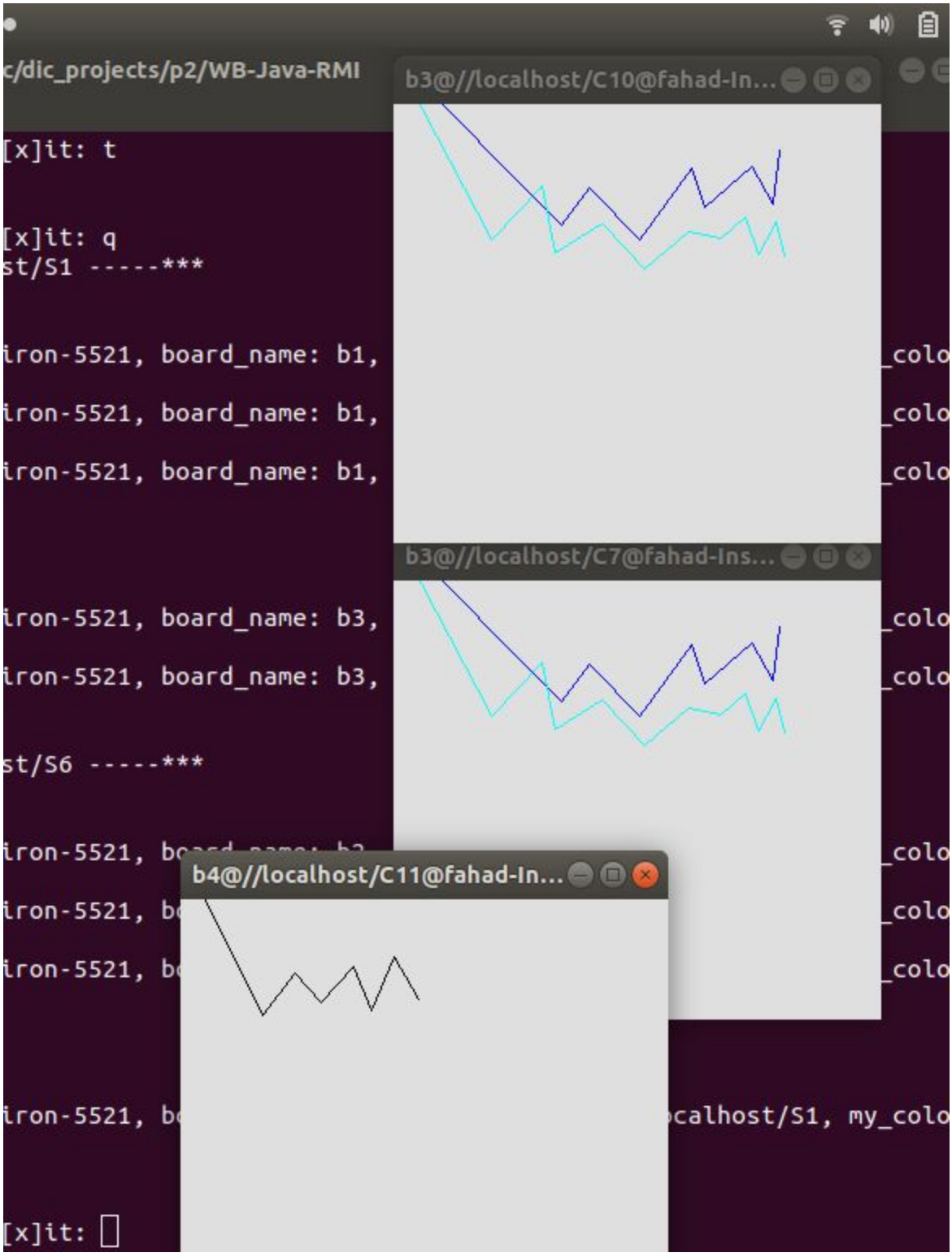
(before termination any client)



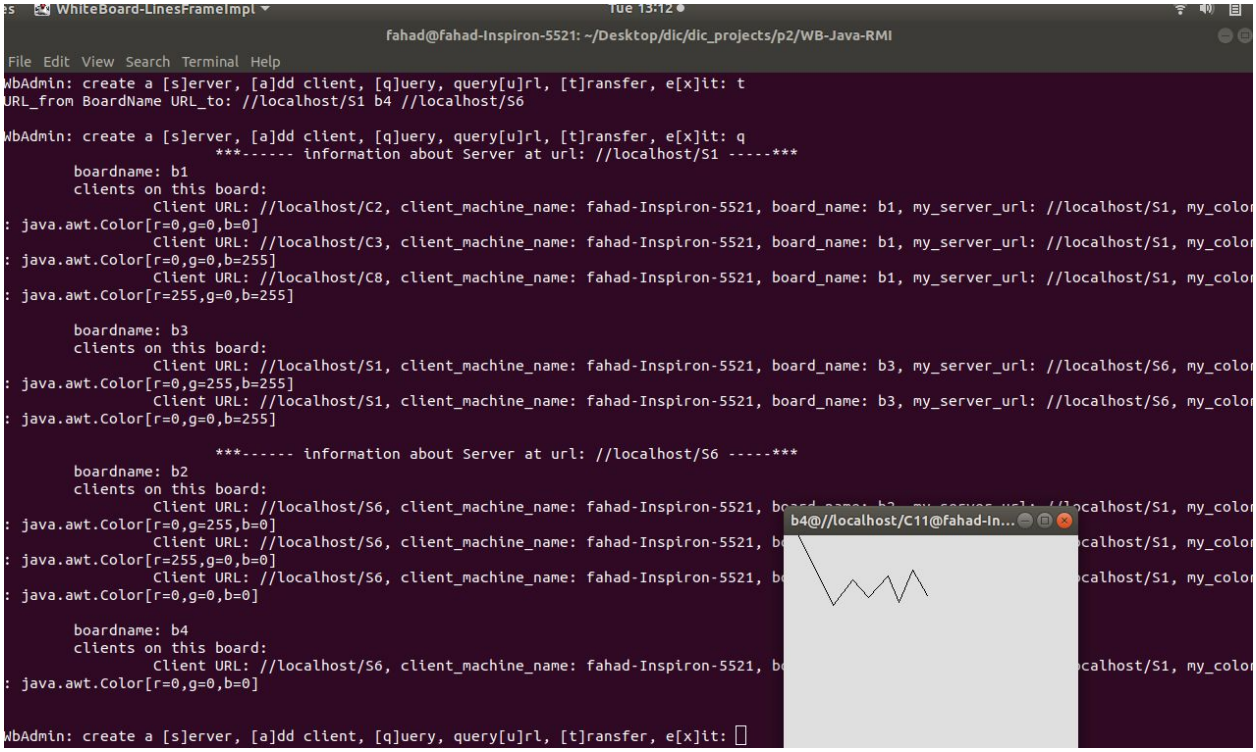
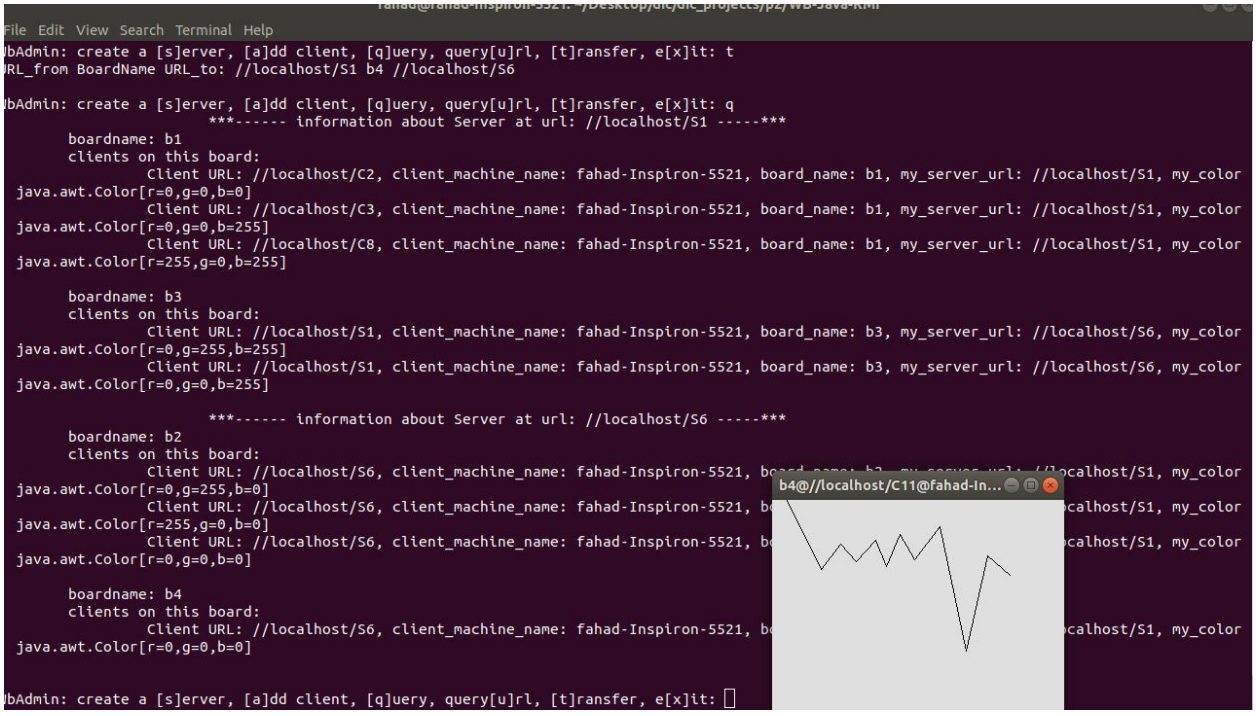
(after terminating all clients on b1)



(after terminating all clients of b2)



(after terminating all clients of b3)



(drew new lines on b4 to show that system is still working fine)