

```

import java.io.InputStream;

import java.io.PrintStream;

import java.util.Scanner;


public class Bully {

    static boolean[] state = new boolean[5];

    int coordinator;


    public static void up(int up) {

        if (state[up - 1]) {

            System.out.println("process " + up + "is already up");

        } else {

            int i;

            Bully.state[up - 1] = true;

            System.out.println("process " + up + "held election");

            for (i = up; i < 5; ++i) {

                System.out.println("election message sent from process" + up + "to process" + (i +
1));

            }

            for (i = up + 1; i <= 5; ++i) {

                if (!state[i - 1]) continue;

                System.out.println("alive message send from process" + i + "to process" + up);

                break;

            }

        }

    }

}

```

```

public static void down(int down) {
    if (!state[down - 1]) {
        System.out.println("process " + down + "is already down.");
    } else {
        Bully.state[down - 1] = false;
    }
}

```

```

public static void mess(int mess) {
    if (state[mess - 1]) {
        if (state[4]) {
            System.out.println("OK");
        } else if (!state[4]) {
            int i;
            System.out.println("process" + mess + "election");
            for (i = mess; i < 5; ++i) {
                System.out.println("election send from process" + mess + "to process " + (i + 1));
            }
            for (i = 5; i >= mess; --i) {
                if (!state[i - 1]) continue;
                System.out.println("Coordinator message send from process" + i + "to all");
                break;
            }
        }
    } else {
        System.out.println("Prccess" + mess + "is down");
    }
}

```

```
}
```

```
public static void main(String[] args) {  
    int choice;  
    Scanner sc = new Scanner(System.in);  
    for (int i = 0; i < 5; ++i) {  
        Bully.state[i] = true;  
    }  
    System.out.println("5 active process are:");  
    System.out.println("Process up = p1 p2 p3 p4 p5");  
    System.out.println("Process 5 is coordinator");  
    do {  
        System.out.println(".....");  
        System.out.println("1 up a process.");  
        System.out.println("2.down a process");  
        System.out.println("3 send a message");  
        System.out.println("4.Exit");  
        choice = sc.nextInt();  
        switch (choice) {  
            case 1: {  
                System.out.println("bring proces up");  
                int up = sc.nextInt();  
                if (up == 5) {  
                    System.out.println("process 5 is co-ordinator");  
                    Bully.state[4] = true;  
                    break;  
                }  
            }  
        }  
    }  
}
```

```
        Bully.up(up);
        break;
    }
    case 2: {
        System.out.println("bring down any process.");
        int down = sc.nextInt();
        Bully.down(down);
        break;
    }
    case 3: {
        System.out.println("which process will send message");
        int mess = sc.nextInt();
        Bully.mess(mess);
    }
}
} while (choice != 4);
}
```

- **OUTPUT:**

```
Activities Terminal Apr 2 23:51
sukanya@sukanya-VirtualBox: ~/distri/assign6

.....
1 up a process.
2 down a process
3 send a message
4.Exit
1
bring proces up
2
process2is already up
.....
1 up a process.
2 down a process
3 send a message
4.Exit
4
sukanyas@sukanya-VirtualBox:~/distri/assign6$ java Bully
Process up = p1 p2 p3 p4 p5
Process 5 is coordinator
.....
1 up a process.
2 down a process
3 send a message
4.Exit
1
bring proces up
1
process1is already up
.....
1 up a process.
2 down a process
3 send a message
4.Exit
2
bring down any process.
1
.....
1 up a process.
2 down a process
3 send a message
4.Exit
3
which process will send message
2
OK
.....
1 up a process.
2 down a process
3 send a message
4.Exit
..
..
..
..
```