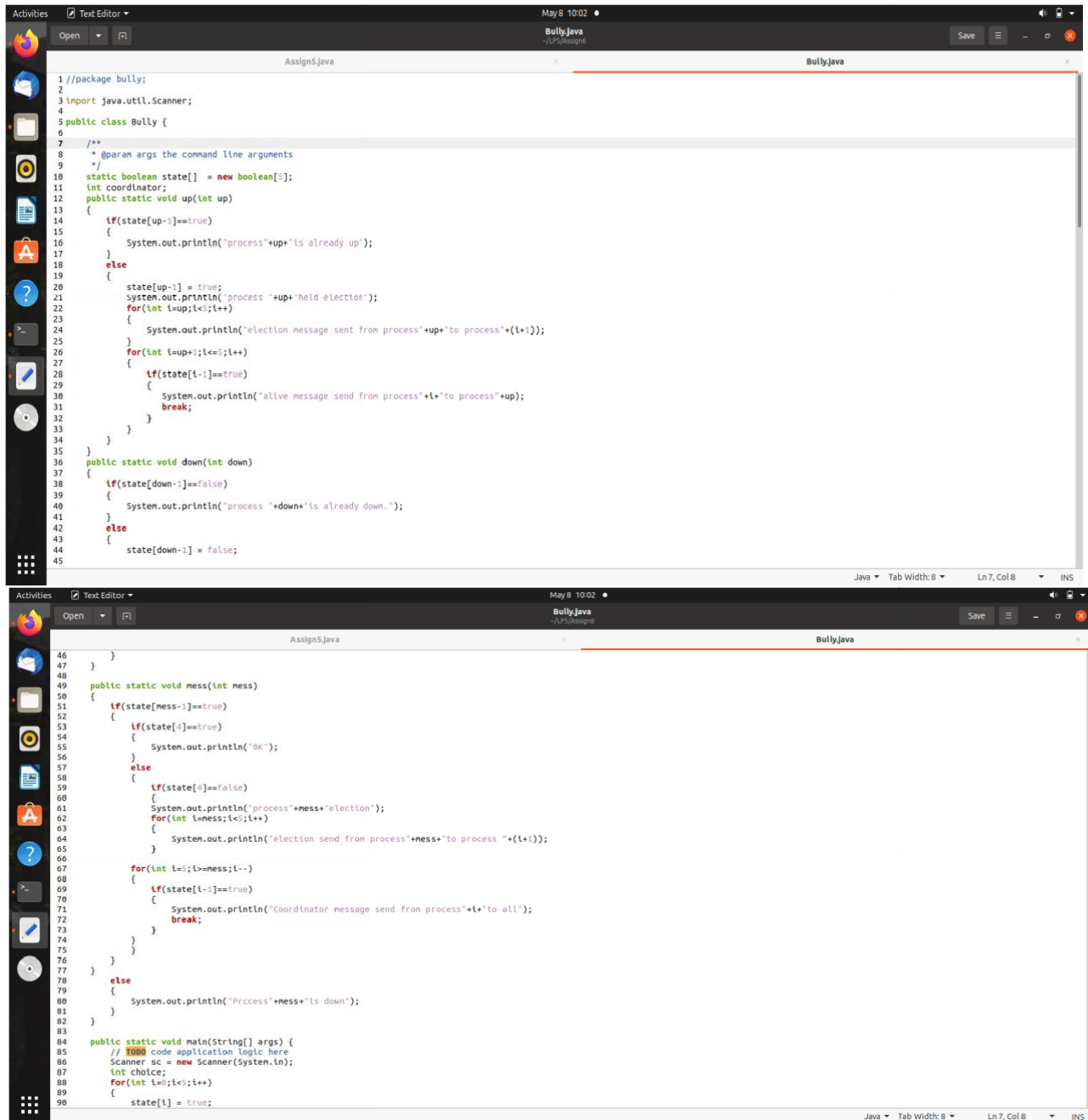


## CODE IMPLEMENTATION :



```
1 //package bully;
2
3 import java.util.Scanner;
4
5 public class Bully {
6
7     /**
8      * @param args the command line arguments
9      */
10    static boolean state[] = new boolean[5];
11    int coordinator;
12    public static void up(int up)
13    {
14        if(state[up-1]==true)
15        {
16            System.out.println("process "+up+" is already up");
17        }
18        else
19        {
20            state[up-1] = true;
21            System.out.println("process "+up+" held election");
22            for(int l=up; l<=5; l++)
23            {
24                System.out.println("election message sent from process "+up+" to process "+(l+1));
25            }
26            for(int l=up+1; l<=5; l++)
27            {
28                if(state[l-1]==true)
29                {
30                    System.out.println("alive message send from process "+l+" to process "+up);
31                    break;
32                }
33            }
34        }
35    }
36    public static void down(int down)
37    {
38        if(state[down-1]==false)
39        {
40            System.out.println("process "+down+" is already down.");
41        }
42        else
43        {
44            state[down-1] = false;
45        }
46    }
47
48    public static void mess(int mess)
49    {
50        if(state[mess-1]==true)
51        {
52            if(state[4]==true)
53            {
54                System.out.println("BK");
55            }
56        }
57        else
58        {
59            if(state[4]==false)
60            {
61                System.out.println("process "+mess+" election");
62                for(int l=mess; l<=5; l++)
63                {
64                    System.out.println("election send from process "+mess+" to process "+(l+1));
65                }
66                for(int l=5; l>=mess; l--)
67                {
68                    if(state[l-1]==true)
69                    {
70                        System.out.println("Coordinator message send from process "+l+" to all");
71                        break;
72                    }
73                }
74            }
75        }
76    }
77    }
78    else
79    {
80        System.out.println("Process "+mess+" is down");
81    }
82    }
83
84    public static void main(String[] args) {
85        // TODO code application logic here
86        Scanner sc = new Scanner(System.in);
87        int choice;
88        for(int l=1; l<=5; l++)
89        {
90            state[l] = true;
91        }
92    }
93 }
```



```
Activities Text Editor May 8 10:03
Open Ring.java Save
Assign5.java Bully.java Ring.java

50
51
52 int init;
53 int ch;
54 int temp1;
55 int temp2;
56 int chi;
57 int arr[] = new int[10];
58
59 proc[num - 1].state = "inactive";
60
61 System.out.println("\n process " + proc[num - 1].id + "select as co-ordinator");
62
63 while (true) {
64     System.out.println("\n 1.election 2.quit ");
65     ch = tn.nextInt();
66     for (i = 0; i < num; i++) {
67         proc[i].f = 0;
68     }
69     switch (ch) {
70     case 1:
71         System.out.println("\n Enter the Process number who initialised election : ");
72         init = tn.nextInt();
73         temp2 = init;
74         temp1 = init + 1;
75         i = 0;
76         while (temp2 != temp1) {
77             if ("active".equals(proc[temp1].state) && proc[temp1].f == 0) {
78                 System.out.println("\nProcess " + proc[init].id + " send message to " + proc[temp1].id);
79                 proc[temp1].f = 1;
80                 init = temp1;
81                 arr[i] = proc[temp1].id;
82                 i++;
83             }
84             if (temp1 == num) {
85                 temp1 = 0;
86             } else {
87                 temp1++;
88             }
89         }
90     }
91 }
92
93
94
95
```

```
Activities Text Editor May 8 10:03
Open Ring.java Save
Assign5.java Bully.java Ring.java

94
95
96     System.out.println("\nProcess " + proc[init].id + " send message to " + proc[temp1].id);
97     arr[i] = proc[temp1].id;
98     i++;
99     int max = -1;
100
101 // finding maxnum for co-ordinator selection
102 for (j = 0; j < i; j++) {
103     if (max < arr[j]) {
104         max = arr[j];
105     }
106 }
107
108 // co-ordinator is found then printing on console
109 System.out.println("\n process " + max + "select as co-ordinator");
110
111 for (i = 0; i < num; i++) {
112     if (proc[i].id == max) {
113         proc[i].state = "inactive";
114     }
115     break;
116 }
117
118 case 2:
119     System.out.println("Program terminated ...");
120     return ;
121     default:
122         System.out.println("\n Invalid response \n");
123         break;
124 }
125
126 }
127
128 }
129
130 }
131 }
132 }
133
134 class Br {
135     public int index; // to store the index of process
136     public int id; // to store id/name of process
137     public int f;
138     String state; // indicates whether active or inactive state of node
139 }
```

```
Activities Text Editor May 8 10:03
Open Ring.java Save
Assign.java Bully.java Ring.java

96 System.out.println("\nProcess " + proc[init].id + " send message to " + proc[tempi].id);
97 arr[l] = proc[tempi].id;
98 l++;
99 int max = -1;
100
101 // finding maximum for co-ordinator selection
102 for (j = 0; j < l; j++) {
103     if (max < arr[j]) {
104         max = arr[j];
105     }
106 }
107
108 // co-ordinator is found then printing on console
109 System.out.println("\n process " + max + "select as co-ordinator");
110
111 for (i = 0; i < num; i++) {
112     if (proc[i].id == max) {
113         proc[i].state = "inactive";
114     }
115     break;
116 }
117
118 case 2:
119     System.out.println("Program terminated ...");
120     return;
121 default:
122     System.out.println("\n invalid response \n");
123     break;
124 }
125 }
126 }
127 }
128 }
129 }
130 }
131 }
132 }
133 }
134 class Rr {
135     public int index; // to store the index of process
136     public int id; // to store id/name of process
137     public int i;
138     String state; // indicates whether active or inactive state of node
139 }
140 }
141 }
```

```
Activities Terminal May 8 10:13
vaibhav@vaibhav-VirtualBox: ~/LP5/Assign6
vaibhav@vaibhav-VirtualBox:~/LP5/Assign6$ java R
Ring Rr
vaibhav@vaibhav-VirtualBox:~/LP5/Assign6$ javac Ring.java
vaibhav@vaibhav-VirtualBox:~/LP5/Assign6$ java R
Ring Rr
vaibhav@vaibhav-VirtualBox:~/LP5/Assign6$ java Ring
Enter the number of process :
5
Enter the id of process :
1 2 3 4 5
Enter the id of process :
Enter the id of process :
Enter the id of process :
Enter the id of process :
[0] 1 [1] 2 [2] 3 [3] 4 [4] 5
process 5select as co-ordinator
1.election 2.quit
1
Enter the Process number who initialised election :
3
Process 4 send message to 1
Process 1 send message to 2
Process 2 send message to 3
Process 3 send message to 4
process 4select as co-ordinator
1.election 2.quit
2
Program terminated ...
vaibhav@vaibhav-VirtualBox:~/LP5/Assign6$
```

```
Activities Terminal May 8 10:12 valbhav@valbhav-VirtualBox: ~/LP5/Assign6

valbhav@valbhav-VirtualBox:~/LP5/Assign6$ cd ../Assign6/
valbhav@valbhav-VirtualBox:~/LP5/Assign6$ javac *.java
valbhav@valbhav-VirtualBox:~/LP5/Assign6$ ls
Assign6.pdf Bully.class Bully.java Ring.class Ring.java Rr.class
valbhav@valbhav-VirtualBox:~/LP5/Assign6$ java Bully
5 active process are:
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
2
bring down any process.
3
.....
1 up a process.
2 down a process
3 send a message
4.Exit
1
bring proces up
2
process2 is already up
.....
1 up a process.
2 down a process
3 send a message
4.Exit
1
bring proces up
3
process 3 held election
election message sent from process3 to process4
election message sent from process3 to process5
alive message sent from process4 to process3
.....
1 up a process.
2 down a process
3 send a message
4.Exit
3
which process will send message
vvalbhav
Exception in thread "main" java.util.InputMismatchException
    at java.base/java.util.Scanner.throwFor(Scanner.java:939)
    at java.base/java.util.Scanner.next(Scanner.java:1694)
    at java.base/java.util.Scanner.nextInt(Scanner.java:2339)
```