


```

        System.out.println("Invalid process number.");
    }
    break;

case 2: // Recover a process
    System.out.print("Enter the process number to recover: ");
    c = sc.nextInt();
    if (c <= n && c > 0) {
        sta[c - 1] = 1; // Mark process as active
        System.out.println("Process " + c + " has recovered.");
        cl = 1;
    } else {
        System.out.println("Invalid process number.");
    }
    break;

case 3: // Exit the program
    choice = false;
    cl = 0;
    break;

default:
    System.out.println("Invalid choice. Please try again.");
}

// If a process crashed or recovered, initiate election
if (cl == 1) {
    System.out.print("Which process will initiate election? ");
    int ele = sc.nextInt();
    if (ele <= n && ele > 0 && sta[ele - 1] == 1) {
        elect(ele);
        System.out.println("Final coordinator is Process " + co);
    } else {
        System.out.println("Invalid or inactive process cannot initiate an election.");
    }
}
} while (choice);

sc.close();
}

// Election method based on Bully Algorithm
static void elect(int ele) {
    ele = ele - 1; // Adjust for zero-based indexing
    co = ele + 1; // Assume initiator as coordinator

    // Send election messages to higher-numbered processes
    for (int i = 0; i < n; i++) {
        if (pro[ele] < pro[i]) {
            System.out.println("Election message is sent from Process " + (ele + 1) + " to Process " + (i +
1));

```

OUTPUT:

```

PROBLEMS 10 OUTPUT TERMINAL DEBUG CONSOLE PORTS
C:\Users\savla\Documents\SEM 7 PRACS\DC> cd "c:\Users\savla\Documents\SEM 7 PRACS\DC\" ; if ($?) { javac Bully.java } ; if ($?) { java Bully }
Enter the number of process:
5
Enter Your Choice
1. Crash Process
2. Recover Process
3. Exit
> 1
Enter the process number: 1
Which process will initiate election? = 2
Election message is sent from 2 to 3
Ok message is sent from 3 to 2
Election message is sent from 3 to 4
Ok message is sent from 4 to 3
Election message is sent from 4 to 5
Ok message is sent from 5 to 4
Election message is sent from 3 to 5
Ok message is sent from 5 to 3
Election message is sent from 2 to 4
Ok message is sent from 4 to 2
Election message is sent from 4 to 5
Ok message is sent from 5 to 4
Election message is sent from 2 to 5
Ok message is sent from 5 to 2
Final coordinator is 5
Enter Your Choice
1. Crash Process
2. Recover Process
3. Exit
> 1
Enter the process number: 5
Which process will initiate election? = 3
Election message is sent from 3 to 4
Ok message is sent from 4 to 3
Election message is sent from 4 to 5
Election message is sent from 3 to 5
Final coordinator is 4
Enter Your Choice
1. Crash Process
2. Recover Process
3. Exit
> 2
> 2
Enter the process number: 1
Which process will initiate election? = 3
Election message is sent from 3 to 4
Ok message is sent from 4 to 3
Election message is sent from 4 to 5
Election message is sent from 3 to 5
Final coordinator is 4
Enter Your Choice
1. Crash Process
2. Recover Process
3. Exit
> 1

```