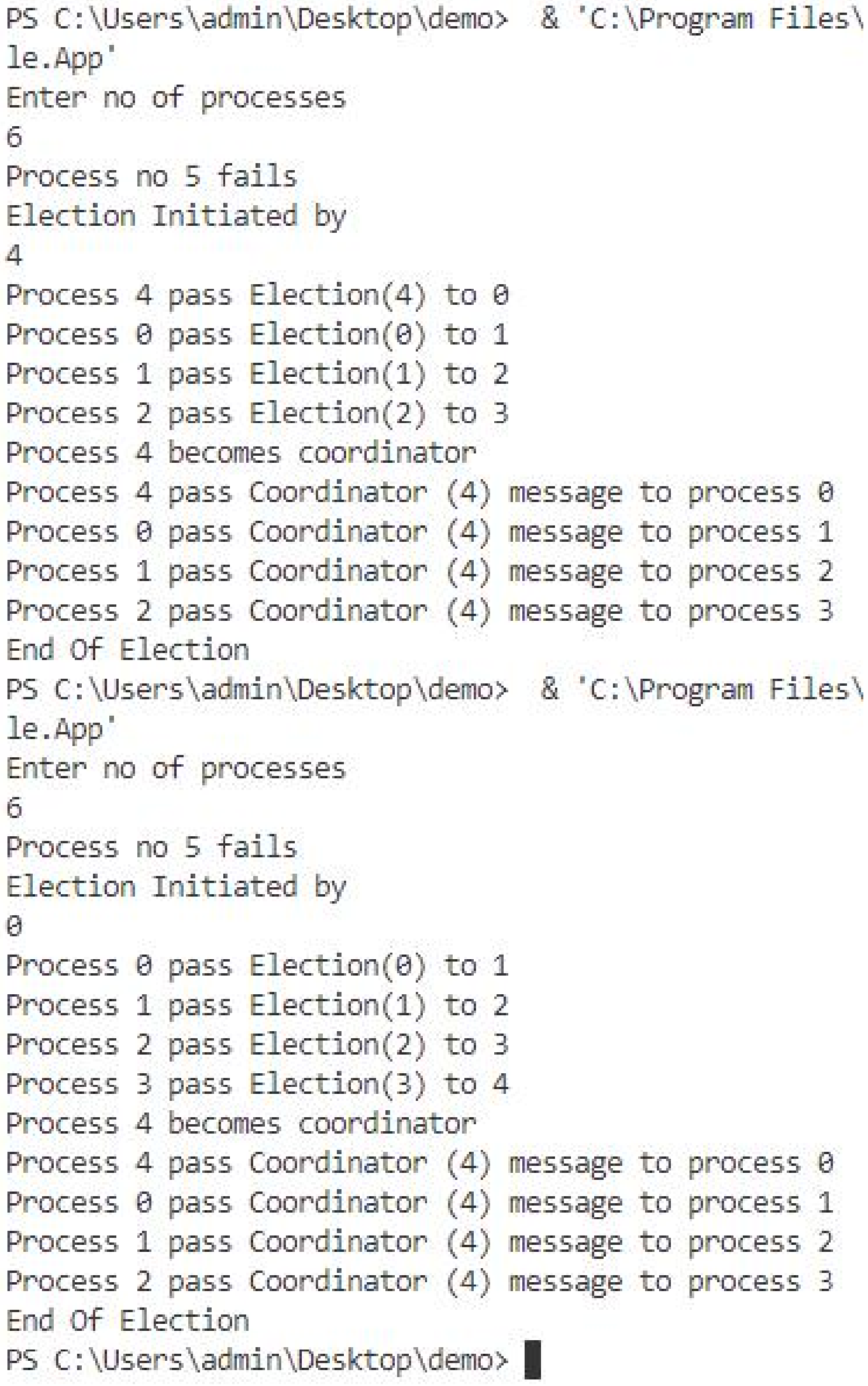
Experiment #5

```
package com.example;
import java.util.Scanner;
class Process {
  public int id;
  public boolean active;
  public Process(int id) {
    this.id = id;
    active = true;
  }
}
public class App {
  int noOfProcesses;
  Process[] processes;
  Scanner sc;
  public App() {
    sc = new Scanner(System.in);
  }
  public void initialiseApp() {
    System.out.println("Enter no of processes");
    noOfProcesses = sc.nextInt();
    processes = new Process[noOfProcesses];
    for (int i = 0; i < processes.length; i++) {
      processes[i] = new Process(i);
    }
  }
  public int getMax() {
    int maxId = -99;
    int maxIdIndex = 0;
    for (int i = 0; i < processes.length; i++) {
      if (processes[i].active && processes[i].id >
maxId) {
        maxId = processes[i].id;
        maxIdIndex = i;
      }
    }
    return maxIdIndex;
  }
  public void performElection() {
    System.out.println("Process no " +
processes[getMax()].id + " fails");
    processes[getMax()].active = false;
    System.out.println("Election Initiated by");
    int initiatorProcesss = sc.nextInt();
    int prev = initiatorProcesss;
    int next = prev + 1;
    while (true) {
      if (processes[next].active) {
        System.out.println("Process " +
processes[prev].id + " pass Election(" +
processes[prev].id + ") to " + processes[next].id);
        prev = next;
      }
      next = (next + 1) % noOfProcesses;
      if (next == initiatorProcesss) {
        break;
      }
    }
    System.out.println("Process " +
processes[getMax()].id + " becomes
coordinator");
    int coordinator = processes[getMax()].id;
    prev = coordinator;
    next = (prev + 1) % noOfProcesses;
    while (true) {
      if (processes[next].active) {
        System.out.println("Process " +
processes[prev].id + " pass Coordinator (" +
coordinator
            + ") message to process " +
processes[next].id);
        prev = next;
      }
      next = (next + 1) % noOfProcesses;
      if (next == coordinator) {
        System.out.println("End Of Election ");
        break;
      }
    }
  }
  public static void main(String arg[]) {
    App r = new App();
    r.initialiseApp();
    r.performElection();
  }
}
```

Output



```
PS C:\Users\admin\Desktop\demo>  & 'C:\Program Files\
le.App'
Enter no of processes
6
Process no 5 fails
Election Initiated by
4
Process 4 pass Election(4) to 0
Process 0 pass Election(0) to 1
Process 1 pass Election(1) to 2
Process 2 pass Election(2) to 3
Process 4 becomes coordinator
Process 4 pass Coordinator (4) message to process 0
Process 0 pass Coordinator (4) message to process 1
Process 1 pass Coordinator (4) message to process 2
Process 2 pass Coordinator (4) message to process 3
End Of Election
PS C:\Users\admin\Desktop\demo>  & 'C:\Program Files\
le.App'
Enter no of processes
6
Process no 5 fails
Election Initiated by
0
Process 0 pass Election(0) to 1
Process 1 pass Election(1) to 2
Process 2 pass Election(2) to 3
Process 3 pass Election(3) to 4
Process 4 becomes coordinator
Process 4 pass Coordinator (4) message to process 0
Process 0 pass Coordinator (4) message to process 1
Process 1 pass Coordinator (4) message to process 2
Process 2 pass Coordinator (4) message to process 3
End Of Election
PS C:\Users\admin\Desktop\demo> 
```