import java.io.\*;

public class BullyAlgo

{

int cood,ch,crash;

int prc[];

public void election(int n) throws IOException

{

BufferedReader br=new BufferedReader(new InputStreamReader(System.in));

System.out.println("\n The COrdinator Has Crashed");

int flag=1;

while (flag==1)

{

crash=0;

for(int i1=0;i1<n;i1++)

if(prc[i1]==0)

crash++;

if(crash==n)

{

System.out.println("\n\*\*\*All processes are crashed \*\*");

break;

}

else

{

System.out.println("\nEnter the Intiator");

int init=Integer.parseInt(br.readLine());

if((init<1)||(init>n)||(prc[init-1]==0))

{

System.out.println("\nInvalid Intiator");

continue;

}

for(int i1=init-1;i1<n;i1++)

System.out.println("Process"+(i1+1)+" called for election");

System.out.println("");

for(int i1=init-1;i1<n;i1++)

{

if(prc[i1]==0)

System.out.println("Process"+(i1+1)+"Is Dead");

else

System.out.println("Process"+(i1+1)+"Is in");

}

for(int i1=n-1;i1>=0;i1--)

if(prc[i1]==1)

{

cood=(i1+1);

System.out.println("\n\*\*\* New Coordintaors Is "+(cood)+"\*\*\*\*");

flag=0;

break;

}

}

}

}

public void Bully( ) throws IOException

{

BufferedReader br= new BufferedReader(new InputStreamReader(System.in));

System.out.println("Enter the number of prcoess:");

int n=Integer.parseInt(br.readLine());

prc=new int[n];

crash=0;

for(int i=0;i<n;i++)

prc[i]=1;

cood=n;

do

{

System.out.println("\n\t 1.Crash a process");

System.out.println("\n\t 2.Recover a process");

System.out.println("\n\t 3.Display New Coordintor");

System.out.println("\n\t 4.Exit");

ch=Integer.parseInt(br.readLine());

switch(ch)

{

case 1:System.out.println("Enter a process to crash ");

int cp=Integer.parseInt(br.readLine());

if((cp>n)||(cp<1))

{

System.out.println("Invalid Process!Enter a valid process");

}

else if((prc[cp-1]==1)&&(cood!=cp))

{

prc[cp-1]=0;

System.out.println("\nProcess"+cp+"Has been Crashed");

}

else if((prc[cp-1]==1)&&(cood==cp))

{

prc[cp-1]=0;

election(n);

}

else

System.out.println("\nProcess"+cp+"Is already Crashed");

break;

case 2: System.out.println("\n Crashed Processes Are: \n");

for(int i=0;i<n;i++)

{

if(prc[i]==0)

System.out.println(i+1);

crash++;

}

System.out.println("Enter The Process You Want To Recover");

int rp=Integer.parseInt(br.readLine());

if((rp<1)||(rp>n))

System.out.println("\n Invalid Process. Enter A Valid ID");

else if((prc[rp-1]==0)&&(rp>cood))

{

prc[rp-1]=1;

System.out.println("\n Process "+rp+" Has Recovered");

cood=rp;

System.out.println("\n Process "+rp+" Is The New Coordinator ");

}

else if(crash==n)

{

prc[rp-1]=1;

cood=rp;

System.out.println("\n Process "+rp+" Is The New Coordinator ");

crash--;

}

else if((prc[rp-1]==0)&&(rp<cood))

{

prc[rp-1]=1;

System.out.println("\n Process "+rp+" Has Recovered");

}

else

System.out.println("\n Process "+rp+" Is Not A Crashed Process");

break;

case 3:System.out.println("\nCurrent Coordinator Is "+cood);

break;

case 4:System.exit(0);

break;

default:System.out.println("\n Invalid Entry!");

break;

}

}

while(ch!=4);

}

public static void main(String args[]) throws IOException

{

BullyAlgo ob=new BullyAlgo();

ob.Bully();

}

}

