

Assignment No.5

Problem Statement:

Implement token ring based mutual exclusion algorithm.

Code:

```
import java.io.*;
import java.util.*;

class tokenring {

    public static void main(String args[]) throws Throwable {
        Scanner scan = new Scanner(System.in);
        System.out.println("Enter the num of nodes:");
        int n = scan.nextInt();
        int m = n - 1;
        // Decides the number of nodes forming the ring
        int token = 0;
        int ch = 0, flag = 0;
        for (int i = 0; i < n; i++) {
            System.out.print(" " + i);
        }
        System.out.println(" " + 0);
        do{
            System.out.println("Enter sender:");
            int s = scan.nextInt();
            System.out.println("Enter receiver:");
            int r = scan.nextInt();
            System.out.println("Enter Data:");
            int a;
            a = scan.nextInt();
            System.out.print("Token passing:");
            for (int i = token, j = token; (i % n) != s; i++, j = (j + 1) % n) {
                System.out.print(" " + j + "->");
            }
            System.out.println(" " + s);
            System.out.println("Sender " + s + " sending data: " + a);
            for (int i = s + 1; i != r; i = (i + 1) % n) {
                System.out.println("data " + a + " forwarded by " + i);
            }
            System.out.println("Receiver " + r + " received data: " + a + "\n");
            token = s;
            do{
                try {
                    if( flag == 1)
                        System.out.print("Invalid Input!!...");
                    System.out.print("Do you want to send again?? enter 1 for Yes and
0 for No : ");
                    ch = scan.nextInt();
                    if( ch != 1 && ch != 0 )
                        flag = 1;
                    else
                        flag = 0;
                } catch (InputMismatchException e){
```

```

        System.out.println("Invalid Input");
    }
    }while( ch != 1 && ch != 0 );
}while( ch == 1 );
}
}

```

OUTPUT:

```

student@ioe-it-lab-2-128: ~/Desktop/19_Hetavi Dave
student@ioe-it-lab-2-128:~/Desktop/19_Hetavi Dave$ javac tokenring.java
student@ioe-it-lab-2-128:~/Desktop/19_Hetavi Dave$ java tokenring
Enter the num of nodes:
6
0 1 2 3 4 5 0
Enter sender:
2
Enter receiver:
5
Enter Data:
589
Token passing: 0-> 1-> 2
Sender 2 sending data: 589
data 589 forwarded by 3
data 589 forwarded by 4
Receiver 5 received data: 589
Do you want to send again?? enter 1 for Yes and 0 for No : 0
student@ioe-it-lab-2-128:~/Desktop/19_Hetavi Dave$

```