

ASSIGNMENT NO-5

```
import java.util.*;

public class TokenRing {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print("Enter the number of Nodes: ");
        int n = sc.nextInt();

        // Printing the ring structure
        for (int i = 0; i < n; i++) {
            System.out.print(i + " ");
        }
        System.out.println("0"); // Completing the ring

        int ch = 0; // Choice for repeating transmission

        do {
            System.out.print("Enter Sender: ");
            int sender = sc.nextInt();

            System.out.print("Enter Receiver: ");
            int receiver = sc.nextInt();

            System.out.print("Enter Data to send: ");
            int data = sc.nextInt();

            System.out.print("Token Passing: ");
            int token = 0;
```

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        for (int i = token; i < sender; i++) {
            System.out.print(i + " => ");
        }
        System.out.println(sender);
        System.out.println("Sender " + sender + " Sending Data: " + data);

        // Forwarding data through nodes
        for (int i = sender; i != receiver; i = (i + 1) % n) {
            System.out.println("Data " + data + " Forwarded by " + i);
        }
        System.out.println("Receiver " + receiver + " Received the Data: " + data + "\n");

        // Update token position
        token = sender;

        System.out.print("Do you want to send data again? Enter 1 for Yes and 0 for No: ");
        ch = sc.nextInt();
    } while (ch == 1);
    sc.close(); // Closing the Scanner to prevent resource leaks
}
}

```

Output

```

PS C:\Users\admin\Desktop\Engineering Things!\DS Assignments\45026_LA-5> java TokenRing.java
Enter the number of Nodes: 10
0 1 2 3 4 5 6 7 8 9
Enter Sender: 4
Enter Receiver: 9
Enter Data to send: 45
Token Passing: 0 => 1 => 2 => 3 => 4
Sender 4 Sending Data: 45
Data 45 Forwarded by 4
Data 45 Forwarded by 5
Data 45 Forwarded by 6
Data 45 Forwarded by 7
Data 45 Forwarded by 8
Receiver 9 Received the Data: 45

Do you want to send data again? Enter 1 for Yes and 0 for No: 0
PS C:\Users\admin\Desktop\Engineering Things!\DS Assignments\45026_LA-5> |

```