

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

```
class BiconnectedComponents {  
    private int V, time;  
    private List<Integer>[] adj;
```

```
  
    public BiconnectedComponents(int v) {  
        V = v;  
        adj = new ArrayList[V];  
        for (int i = 0; i < V; i++) adj[i] = new ArrayList<>();  
    }
```

```
  
    public void addEdge(int u, int v) {  
        adj[u].add(v);  
        adj[v].add(u);  
    }
```

```
  
    private void BCCUtil(int u, int[] disc, int[] low, Stack<Edge> stack, int parent) {  
        disc[u] = low[u] = ++time;  
        int children = 0;
```

```
  
        for (int v : adj[u]) {  
            if (disc[v] == -1) {  
                children++;  
                stack.push(new Edge(u, v));  
                BCCUtil(v, disc, low, stack, u);  
                low[u] = Math.min(low[u], low[v]);
```

```

        if ((parent == -1 && children > 1) || (parent != -1 && low[v] >= disc[u])) {
            System.out.print("Biconnected Component: ");
            while (true) {
                Edge e = stack.pop();
                System.out.print("(" + e.u + ", " + e.v + ") ");
                if (e.u == u && e.v == v) break;
            }
            System.out.println();
        }
    } else if (v != parent && disc[v] < disc[u]) {
        low[u] = Math.min(low[u], disc[v]);
        stack.push(new Edge(u, v));
    }
}
}
}

```

```

public void findBCCs() {
    int[] disc = new int[V], low = new int[V];
    Arrays.fill(disc, -1);
    Stack<Edge> stack = new Stack<>();
    time = 0;

```

```

    for (int i = 0; i < V; i++) {
        if (disc[i] == -1) {
            BCCUtil(i, disc, low, stack, -1);
            if (!stack.isEmpty()) {
                System.out.print("Biconnected Component: ");
                while (!stack.isEmpty()) {
                    Edge e = stack.pop();
                    System.out.print("(" + e.u + ", " + e.v + ") ");
                }
            }

```

```

    }
    System.out.println();
  }
}
}
}

```

```

private static class Edge {
    int u, v;
    Edge(int u, int v) { this.u = u; this.v = v; }
}

```

```

public static void main(String[] args) {
    BiconnectedComponents g = new BiconnectedComponents(7);
    g.addEdge(0, 1); g.addEdge(1, 2); g.addEdge(2, 0);
    g.addEdge(1, 3); g.addEdge(3, 4); g.addEdge(4, 5);
    g.addEdge(5, 3); g.addEdge(5, 6);
    System.out.println("Biconnected Components in the graph:");
    g.findBCCs();
}
}

```