CSE 222 Final Examination

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a) I will gonna represent edges like

=> HashSet<Edge> l = new HashSet<>();

[((s1,d1)), ((s2,d2)), ((s1,d3)), ((d1,s1)) -----]

source, destination as integers

```
class Edge {
    int source;
    int destination;
    !
    int hashCode() {
    ! return (source , destination)'
    !       ? -1 * source * destination
    !       : source * destination
    }
```

b)

```
pulic MyGraph implements Graph{

    HashSet<Edge> g;
    int numV;
    boolean isDirected = false;
    MyGraph (int numV) {
        this.numV = numV;
        g = new HashSet<> (numV);
    }
    MyGraph(int numV, boolean isD) {
        this.numV = numV;
        g = new HashSet<>(numV);
        isDirected = isD;
    }
```

```
@Override
public boolean put(Edge e) {
        g.add(e); // if already in the graph nothing will be change

        if (!isDirected) {
            g.add(new Edge(e.getDest(), e.getSrc()));
        return true;
}

static class EIter <Edge> implements Iterator<Edge> {

        Iterator<Edge> iter;
        int source;

        EIter (int source){
            this.source = source;
            iter = g.iterator()
        }

        E next() {
            Edge e = null;
            do{
                e= iter.next();
            }while(!e.getDest().equals(source) && iter.hasNext());

            return e;
        }

        boolean hasNext() {
            return iter.hasNext();
        }
}

Iterator<Edge> edgeIterator(int source) {
    return new EIter(source);
}
```