

Graphs



In Java



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By the end of this video you will be able to...

- Write classes in Java to implement Graphs

Graphs

Label by integers



Basic objects : **vertices, nodes**

Relationships between them : edges, arcs, links

V

E

```
public abstract class Graph {
```

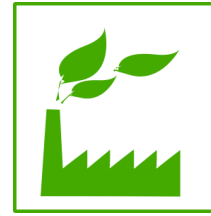
```
    private int numVertices;  
    private int numEdges;
```

```
    public Graph() {  
        numVertices = 0;  
        numEdges = 0;  
    }
```

```
    public int getNumVertices() {  
        return numVertices;  
    }
```

```
    public int getNumEdges() {  
        return numEdges;  
    }
```

```
    ...
```



```
public abstract class Graph {  
    ...  
    public void addVertex( ) {  
        implementAddVertex();  
        numVertices ++;  
    }  
  
    public abstract void implementAddVertex();  
  
    // similar for adding edges  
  
    public abstract List<Integer> getNeighbors(int v);  
  
}
```

Next step

- Define subclasses of Graph in which make design decisions about the implementation.