

Interface Graph<V,E>		Method Summary
void	<u>add</u> (<u>V</u> label)	Add a vertex to the graph
void	<u>addEdge</u> (<u>V</u> vtx1, <u>V</u> vtx2, <u>E</u> label)	Add an edge between two vertices within the graph.
void	<u>clear</u> ()	Remove all vertices (and thus, edges) of the graph.
boolean	<u>contains</u> (<u>V</u> label)	Test for vertex membership.
boolean	<u>containsEdge</u> (<u>V</u> vLabel1, <u>V</u> vLabel2)	Test for edge membership.
int	<u>degree</u> (<u>V</u> label)	Determine out degree of vertex.
int	<u>edgeCount</u> ()	Determine the number of edges in graph.
java.util.Iterator< <u>Edge</u> < <u>V</u> , <u>E</u> >>	<u>edges</u> ()	Construct an iterator over all edges.
<u>V</u>	<u>get</u> (<u>V</u> label)	Get reference to actual label of vertex.
<u>Edge</u> < <u>V</u> , <u>E</u> >	<u>getEdge</u> (<u>V</u> label1, <u>V</u> label2)	Get reference to actual edge.
boolean	<u>isDirected</u> ()	Determine if graph is directed.
boolean	<u>isEmpty</u> ()	Determine if graph is empty.
boolean	<u>isVisited</u> (<u>V</u> label)	Return visited flag of vertex.
boolean	<u>isVisitedEdge</u> (<u>Edge</u> < <u>V</u> , <u>E</u> > e)	Return visited flag of edge.
java.util.Iterator< <u>V</u> >	<u>iterator</u> ()	Construct vertex iterator.

java.util.Iterator< <u>V</u> >	<u>neighbors</u> (<u>V</u> label) Construct an adjacent vertex iterator.
<u>V</u>	<u>remove</u> (<u>V</u> label) Remove a vertex from the graph.
<u>E</u>	<u>removeEdge</u> (<u>V</u> vLabel1, <u>V</u> vLabel2) Remove possible edge between vertices labeled vLabel1 and vLabel2.
void	<u>reset</u> () Clear visited flags of edges and vertices.
int	<u>size</u> () Determine number of vertices within graph.
boolean	<u>visit</u> (<u>V</u> label) Test and set visited flag of vertex
boolean	<u>visitEdge</u> (Edge< <u>V</u> , <u>E</u> > e) Test and set visited flag of edge.

```

Edge(V vtx1, V vtx2, E label, boolean directed)
V here()
V there()
E label()
void setLabel(E label)
boolean visit()/isVisited()
boolean isDirected()

```

```

GraphMatrixVertex(V label, int index)
V label()
boolean visit()
boolean isVisited()
void reset()
int index()

```