

Vertex-Edge Graphs

VOCABULARY

Vertex-edge graph *a collection of points and line segments connecting a subset of points*

Edge of a vertex-edge graph *a line segment connecting the vertices of a graph*

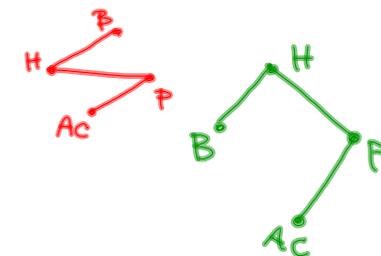
Vertex of a vertex-edge graph *a point that is the endpoint of an edge or not part of an edge*

Example 1:

A railway serves four cities: Harrisburg, Baltimore, Philadelphia, and Atlantic City. Trains travel between Harrisburg and Baltimore, Harrisburg and Philadelphia, and Philadelphia and Atlantic City. Draw a vertex-edge graph to represent this situation.

Step 1:

Represent the cities using points.

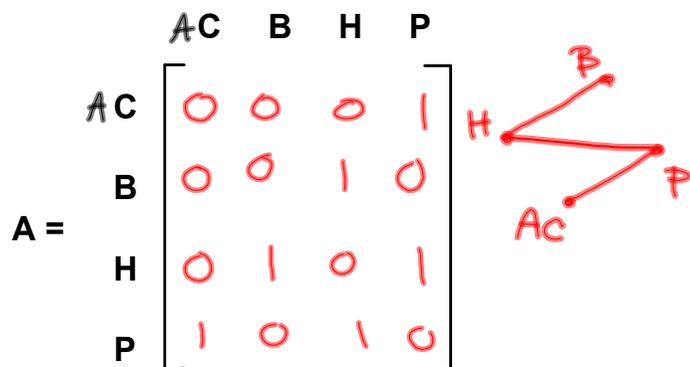


Step 2:

Draw the edges connecting cities with a direct route.

Example 2:

Represent the vertex-edge graph from Example 1 as matrix A.



Example 3:

Use the matrix you found in Example 2 to calculate A^2 . What does A^2 represent?

