

Worksheet 40 - Group 1

Worksheet Group 1 Members

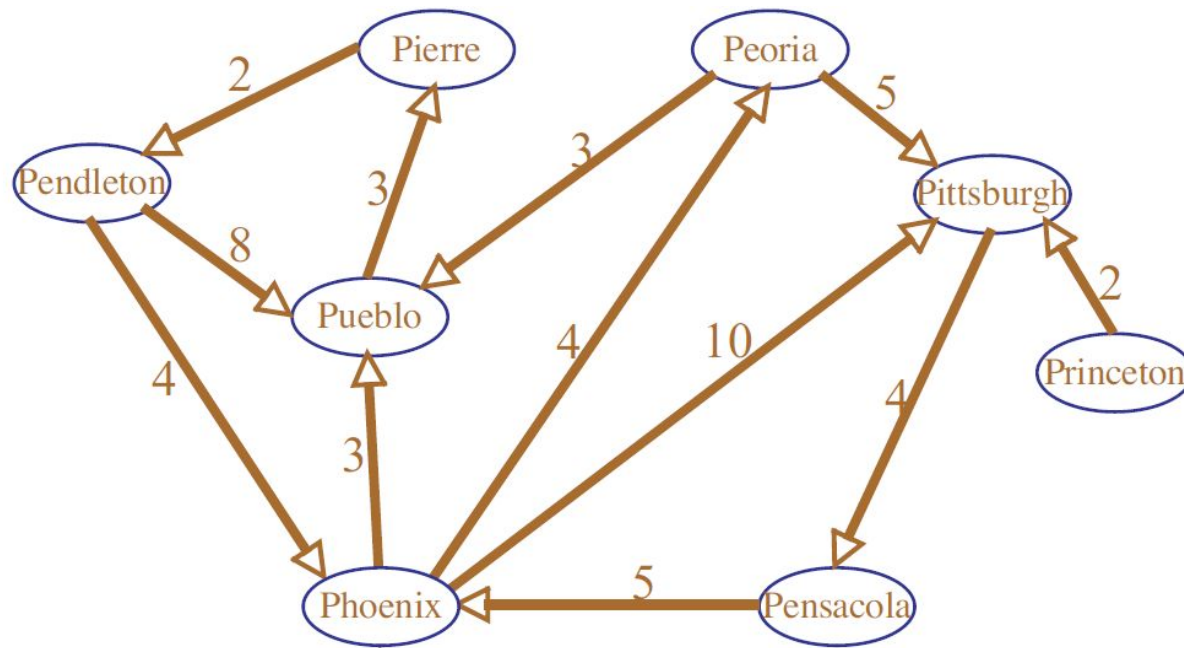
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Collaborators

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Worksheet 40: Graph Representations

In this worksheet, we aim to represent a graph data structure in two different ways. Specifically, we aim to represent a graph as an adjacency matrix and as an edge list. For this worksheet, we will be using the following directed, weighted graph:



We will begin with representing the graph above as an adjacency matrix. An adjacency matrix is represented with a two-dimensional array. The adjacency matrix for the graph above appears on the next page.

	Pendleton	Pensacola	Peoria	Phoenix	Pierre	Pittsburgh	Princeton	Pueblo
Pendleton	1	0	0	4	0	0	0	8
Pensacola	0	1	0	5	0	0	0	0
Peoria	0	0	1	0	0	5	0	3
Phoenix	0	0	4	1	0	10	0	3
Pierre	2	0	0	0	1	0	0	0
Pittsburgh	0	4	0	0	0	1	0	0
Princeton	0	0	0	0	0	2	1	0
Pueblo	0	0	0	0	3	0	0	1

In addition to the adjacency matrix above, we can also represent a graph as an edge list. This appears below for the same graph in the image on the first page.

Pendleton: {Phoenix: 4, Pueblo: 8}

Pensacola: {Phoenix: 5}

Peoria: {Pittsburg: 5, Pueblo: 3}

Phoenix: {Peoria: 4, Pittsburgh: 10, Pueblo: 3}

Pierre: {Pendleton: 2}

Pittsburgh: {Pensacola: 4}

Princeton: {Pittsburgh: 2}

Pueblo: {Pierre: 3}

Piazza Discussion

<https://piazza.com/class/ib2kus4hsie528?cid=317>