

## Finding a route between two points

There is an input file provided which contains information about connections and cost between different cities. Connections are described by (DISTANCE;COST) in such a way:

	A	B	C	D
A	(0;0)	(10;20)	(20;15)	(0;0)
B	(10;20)	(0;0)	(30;20)	(0;0)
C	(20;15)	(30;20)	(0;0)	(40;10)
D	(0;0)	(0;0)	(40;10)	(0;0)

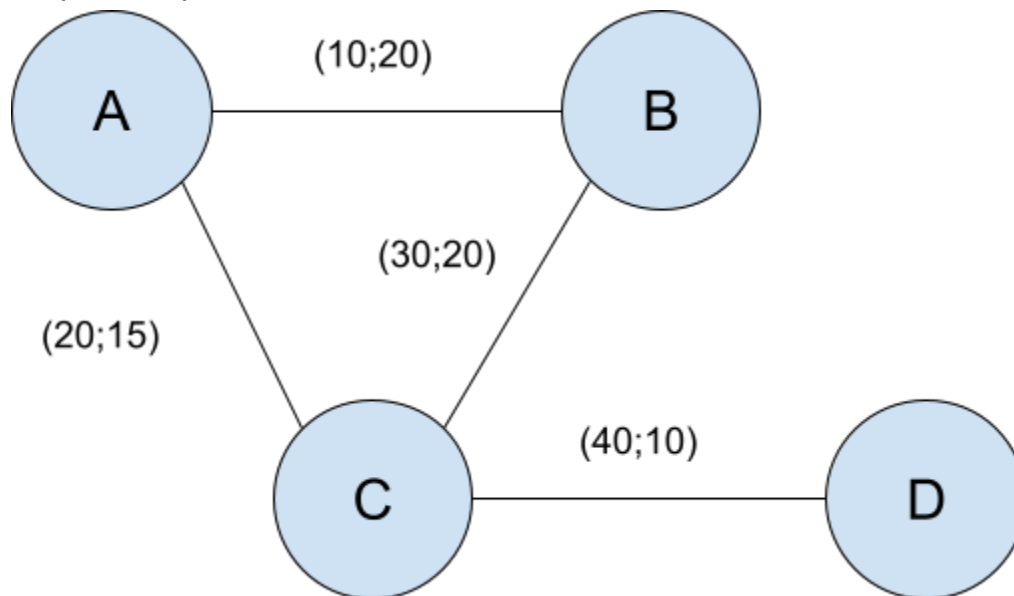
Distance between A and B is 10 and cost 20.

Distance between A and C is 20 and cost 15.

Distance between B and C is 30 and cost 20.

Distance between C and D is 40 and cost 10.

Graphical representation of connections:



All connections are bidirectional, which means it is possible to travel in both directions between two points. Travel cost between two points is calculated as multiplication between DISTANCE and COST between those points.

### TASK:

Write a program that:

- Reads input data from the provided file
- Takes as input two points
- Finds shortest path between those two points
- Finds cheapest path between two points, cheapest path is path with the smallest cost of travel, cost of travel between two points =  $\text{DISTANCE} \times \text{COST}$
- Prints out shortest and cheapest paths and their distance and travel cost
- If there are more than one shortest or cheapest path print out all of them

### EXTRA TASK:

- Do the same task but find a path when 3 points are used as input- start, finish and travel point. Path will look like this- start -> travel point -> finish.

### INFO:

- Check Dijkstras's algorithm if necessary
- Comment your code
- Use good coding guidelines