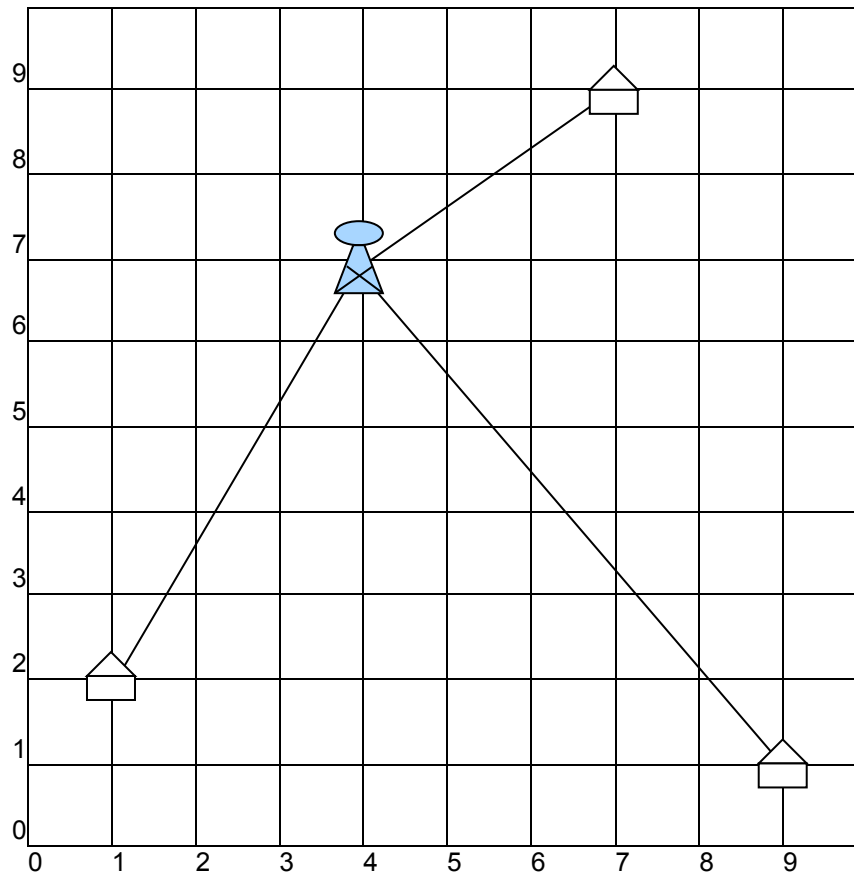


CS225 - Water Tower Project

Create application "Water Tower Project"

- a) There are three houses in a rural neighborhood that want to have a water tower to supply their water needs. You (the neighborhood programmer) have been asked determine the best placement of the water tower so that the cost is minimized. The way the cost is minimized is by placing the tower in the position so that the total distance from each of the three houses to the water tower is minimized therefore reducing the amount of pipe length needed to connect each house to the water tower.



- b) The formula you will use to determine the distance from a given house to the tower will be the distance formula.
- i) $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
- c) You cannot use arrays or any type of formula to determine the best location of the water tower. You MUST use a nested looping structure to investigate every x and y axis coordinate to determine if it yields that minimum total length of pipe to the three houses.
- d) Where is the best water tower INTEGER location to minimize the total cost of pipe? In other words, your answer must be a whole number x and y axis location.