A company is planning on installing a series of unstaffed mini-markets in a rural area. This way, citizens that live far from conventional stores may buy their groceries without needing the car. Specifically, the company wants to serve a set of n houses whose coordinates in kilometers are described by parameters Cx and Cy. Some, but not all of the houses, gave permission to the company to build a mini-marked on their property in exchange for a small compensation. Whether or not it is possible to build a mini-market at house i is described by parameter usable[i]. All considered, the cost of building a mini-market at house i is Dc[i]. The company wants to plan the construction of mini-markets so that each house is at most range kilometers away (euclidean distance) from a mini-market and, the total construction cost is minimized.

Formulate the problem through a MILP formulation and implement it in the AMPL modeling language. Upload the produced model on Webeep.

The file uploaded MUST BE NAMED "000.mod" where 000 is your person code.

The objective function of the model MUST BE NAMED "obj".

Failure to respect these instructions will result in zero points.