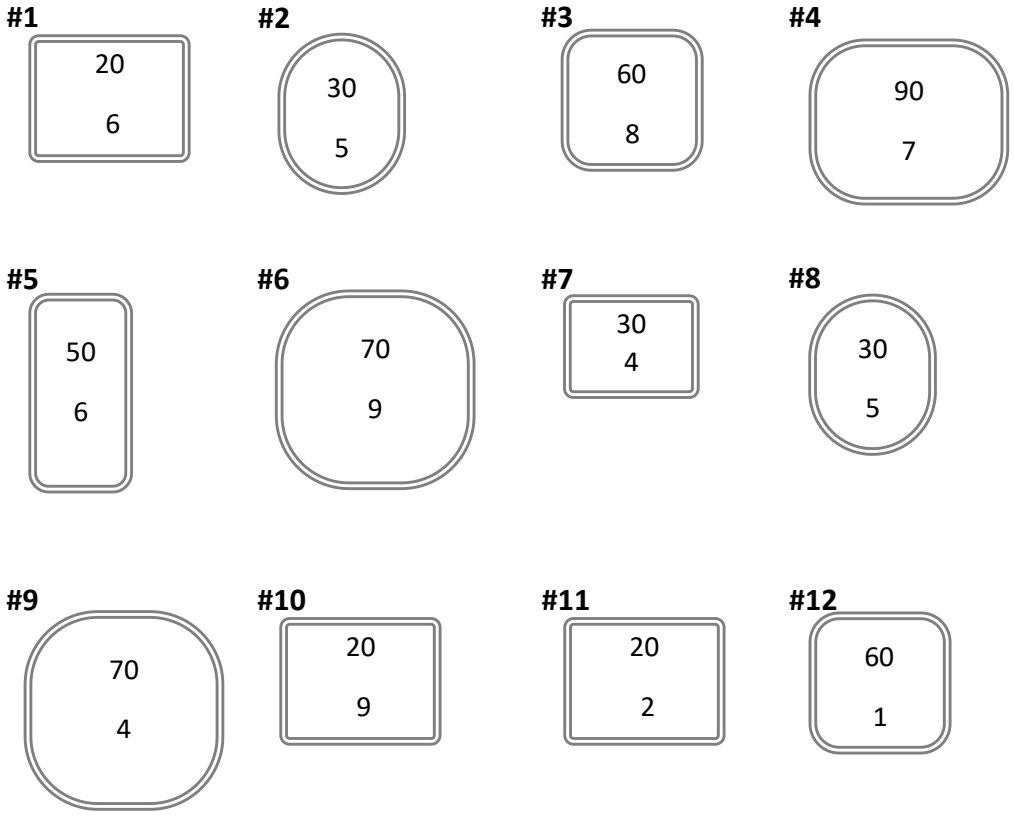
Genetic Algorithms

THE KNAPSACK PROBLEM (100 Points)

You are going on a hiking trip, and there is a limit to the things you can bring. You have two things: a backpack with a size (the weight it can hold that is) and a set of boxes with different weights and different importance values.

The goal is to fill the backpack to make it as valuable as possible without exceeding the maximum weight (250).

1. Define the problem as a genetic algorithm
2. Provide the genome for the problem
3. Define all the fringe operations
4. Cull your population by 50% at every generation



The complete set of boxes at your disposal: the top value is the weight (higher means heavier); the bottom value is the importance (higher means more important).

SUBMISSION

Submit your solutions via Canvas.