CITS3001 Algorithms, Agents and Artificial Intelligence

Labsheet 2: Optimisation Algorithms

This lab is worth 3% of your final mark.
It should be submitted through cssubmit, by 5pm, Friday August 23

1. Download the `Knapsack.java` interface from
   http://teaching.csse.uwa.edu.au/units/CITS3001/lectures/labsheets/Knapsack.java
   Implement the fractionalKnapsack and discreteKnapsack algorithm, in a public class `KnapsackImp`. When you submit via cssubmit, your code will be compiled and compared to a model answer over randomly generated data. You will see the results of this comparison and an estimate of your mark. However, it will not be formally marked until after the deadline. You cannot include print statements or system calls in your code. Your code will only be given a limited amount of time , so you should aim to provide efficient implementations. Note, for the integrity of the marking program, your code should implment only the interface and contain no print statements, or system calls.

2. Design one or more greedy heuristics for deciding the order of packing the items for your 0-1 knapsack algorithm, and try them out. Be imaginative, you never know what works!