

Project 2 Description

Task: Recall the KNAPSACK problem where the goal was to choose a set of items which maximized the total value of the items while keeping the total weight of the items less than the given limit. You are to program the dynamic programming algorithm shown in class for this problem. The input will be given in a file called `ksinstance.txt`. The first line will be one integer representing the weight limit and each subsequent line will be two integers separated by whitespace representing one item (the first integer is the value and the second is the weight).

Reminders: In class we discussed the problem, showed the natural greedy algorithms failed, and outlined a dynamic programming solution. This is what you are expected to code. This is a senior level class and while the project is not difficult. You are expected to submit reasonable code (appropriate structure, sufficient commenting, proper variable naming, etc).

Submission: Turn your program in on moodle no later than midnight the day of the final.

Sample Interaction:

```
Project 2: Solving Knapsack using Dynamic Programming
```

```
Reading ksinstance.txt
```

```
The best set of items is:
```

```
1, 5, 6, 9, 11
```

```
It has a total value 32 and total weight 21.
```