

Knapsack Algorithm Assignment

Design and write an algorithm in Python for solving the Knapsack Problem. Develop your algorithm within the provided Python program by doing the following:

- Retrieve the assignment materials from Github repository:
 - KnapsackDev.py
 - knapsack.sql (MySQL dump file)
 - Github URL: <https://github.com/jrb28/BUAD5042Knapsack>
- Implement your algorithm in the Python program named KnapsackDev.py in the function named load_knapsack()
 - Be sure to change the MySQL connection parameters at the top of KnapsackDev.py as is appropriate for your MySQL instance in order to connect to the database
- Use KnapsackDev.py to test your algorithm for the problems in the accompanying MySQL database.
 - The database is called knapsack and there is a link to download a dump file of the database on the Github site mentioned above.
- Once you have completed developing your algorithm, then cut and paste the load_knapsack() function and save it in a file entitled knapsack.py
- Submit your assignment by placing the file knapsack.py in the folder in the location below. Replace [username] with your username.
 - \\jonesfiles.campus.wm.edu\acstore-classes\BUAD5042\student\[username]
- Details on the load_knapsack() function
 - Input arguments:
 - items: a dictionary where
 - the key is the item id value (integer)
 - the value is a 2-tuple where the 0th element is the volume of the item and the 1st element is the value of the item
 - example: {0: (1,2), 1: (2,5)...}
 - the code in knapsack.py already extracts this information providing you revise the MySQL connection properties appropriately.
 - knapsack_cap: This value represents the volume capacity of the knapsack. Its value is already set in the knapsack.py program. You need not make any changes in this regard.
 - Output parameters: your function must output two values, in this order:
 - Name or username (string)
 - A list that includes the item numbers (i.e., the keys from the dictionary) representing the items to be included in the knapsack.