

Assignment 4

```
# of 0-1 Knapsack Problem
# Returns the maximum value that
# can be put in a knapsack of
# capacity W
```

```
def knapSack(W, wt, val, n):

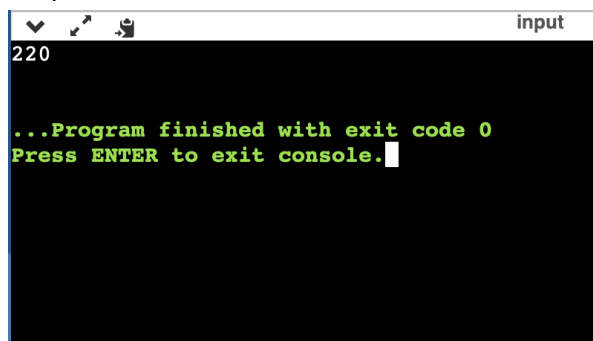
    # Base Case
    if n == 0 or W == 0:
        return 0

    # If weight of the nth item is
    # more than Knapsack of capacity W,
    # then this item cannot be included
    # in the optimal solution
    if (wt[n-1] > W):
        return knapSack(W, wt, val, n-1)

    # return the maximum of two cases:
    # (1) nth item included
    # (2) not included
    else:
        return max(
            val[n-1] + knapSack(
                W-wt[n-1], wt, val, n-1),
            knapSack(W, wt, val, n-1))
# end of function knapSack

#Driver Code
val = [60, 100, 120]
wt = [10, 20, 30]
```

Output:

A screenshot of a terminal window with a black background and green text. The window title is "input". The first line of output is "220". The second line is "...Program finished with exit code 0". The third line is "Press ENTER to exit console." followed by a white cursor block.

```
input
220

...Program finished with exit code 0
Press ENTER to exit console.
```

