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Assignment No: 3

Problem Statement: Write a program to solve a fractional Knapsack problem using a greedy method.

Code:

```
class Item:
    def __init__(self, value, weight):
        self.value = value
        self.weight = weight

def fractionalKnapsack(W, arr):
    arr.sort(key=lambda x: (x.value/x.weight), reverse=True)
    finalvalue = 0.0
    for item in arr:
        if item.weight <= W:
            W -= item.weight
            finalvalue += item.value
        else:
            finalvalue += item.value * W / item.weight
            break
    return finalvalue

if __name__ == "__main__":
    W = 50
    arr = [Item(60, 10), Item(100, 20), Item(120, 30)]
    max_val = fractionalKnapsack(W, arr)
    print ('Maximum value we can obtain = {}'.format(max_val))
```

Input:

Weight = 50

Items = Item(60, 10), Item(100, 20), Item(120, 30)]

Output:

```
Maximum value we can obtain = 240.0  
  
...Program finished with exit code 0  
Press ENTER to exit console.
```