

```

1  import java.util.Arrays;
2
3  class Item {
4      int weight, profit;
5      double ratio;
6
7      Item(int weight, int profit) {
8          this.weight = weight;
9          this.profit = profit;
10         this.ratio = (double) profit / weight;
11     }
12 }
13
14 public class GreedyFractionalKnapsack {
15     public static double getMaxprofit(Item[] items, int m) {
16         Arrays.sort(items, (a, b) -> Double.compare(b.ratio, a.ratio));
17         double maxprofit = 0.0;
18         System.out.println("Items placed in the bag:");
19
20         for (Item item : items) {
21             if (item.weight <= m) {
22                 maxprofit += item.profit;
23                 System.out.println("Item: (Weight: " + item.weight + ", profit: " + item
24                     .profit + ") - Taken Fully");
25                 m -= item.weight;
26             } else {
27                 // Take fractional part
28                 double fraction = (double) m / item.weight;
29                 maxprofit += item.profit * fraction;
30                 System.out.println("Item: (Weight: " + item.weight*fraction + ",
31                     profit: " + item.profit*fraction + ") - Taken " + fraction * 100 + "%");
32                 break;
33             }
34         }
35
36         return maxprofit;
37     }
38
39     public static void main(String[] args) {
40         Item[] items = { new Item(10, 60), new Item(20, 100), new Item(30, 120) };
41         int m = 50;
42
43         double maxprofit = getMaxprofit(items, m);
44         System.out.println("Maximum profit in Knapsack: " + maxprofit);
45     }
46 }

```