ExperimentNo.:-3

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

Source Code:-

In[1]:

```
classItem:
    def init(self, profit, weight): self.profit
        = profit
        self.weight=weight

deffractionalKnapsack(w,arr):
    arr.sort(key=lambda x: x.profit/x.weight, reverse=True)
    finalValue = 0.0
    foriteminarr:
        ifw>=item.weight:
            finalValue += item.profit
            w -= item.weight
        else:
            finalValue+=item.profit*(w/item.weight)
            break
    returnfinalValue

ifname=="main":
    n = int(input("Enter number of items-\n"))
    arr = []
    foriinrange(n):
        profit = int(input("Enter profit of item " + str(i + 1) + "-\n"))
        weight = int(input("Enter weight of item " + str(i + 1) + "-\n"))
        arr.append(Item(profit, weight))
    w=int(input("Entercapacityofknapsack-\n"))
    print("Maximumvalueinknapsack:",fractionalKnapsack(w,arr))
```

```
Enter number of items-
5
Enter profit of item 1-
30
Enter weight of item 1-
5
Enter profit of item 2-
40
Enter weight of item 2-
10
Enter profit of item 3-
45
Enter weight of item 3-
15
Enter profit of item 4-
77
Enter weight of item 4-
22
Enter profit of item 5-
90
Enter weight of item 5-
25
Enter capacity of knapsack-
60
Maximumvalueinknapsack:230.0
```

In[]: