Experiment No.:-3

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

Source Code:-

In [1]:

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

def fractionalKnapsack(w, arr):
    arr.sort(key=lambda x: x.profit/x.weight, reverse=True)
finalValue = 0.0     for item in arr:         if w >=
item.weight:             finalValue += item.profit
w -= item.weight         else:
            finalValue += item.profit * (w/item.weight)
break     return finalValue

if __name__ == "__main__":
    n = int(input("Enter number of items-\n"))
arr = []     for i in range(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("Enter capacity of knapsack-\n"))
    print("Maximum value in knapsack: ", 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
Maximum value in knapsack:  230.0
```

In [ ]: