Practical – 3

```
class Solution:
  def solve(self, weights, values, capacity):
    res = 0
    for pair in sorted(zip(weights, values), key=lambda x: - x[1]/x[0]):
      if not bool(capacity):
        break
      if pair[0] > capacity:
        res += int(pair[1] / (pair[0] / capacity))
        capacity = 0
      elif pair[0] <= capacity:
        res += pair[1]
        capacity -= pair[0]
    return int(res)

ob = Solution()
weights = [1,3,5,4,1,3,2]
values = [5,10,15,7,8,9,4]
capacity = 15
print("The max profit is: ")
print(ob.solve(weights, values, capacity))
```

Output

```
Olmation.
>>>
= RESTART: C:/Users/Harshal Gunjal/AppData/Local/Programs/Pytho
n/Python310/knapsack.py
The max profit is:
51
>>>
```