**Code**

def fractional\_knapsack(items, capacity):

items.sort(key=lambda x: x[1] / x[0], reverse=True)

total\_value = 0

knapsack = []

for weight, value in items:

if weight <= capacity:

knapsack.append((weight, value))

capacity -= weight

total\_value += value

else:

fraction = capacity / weight

knapsack.append((capacity, value \* fraction))

total\_value += value \* fraction

break

return knapsack, total\_value

def main():

num\_items = int(input("Enter the number of items: "))

items = []

for i in range(num\_items):

name = input(f"Enter the name of item {i + 1}: ")

weight = float(input(f"Enter the weight of item {i + 1}: "))

value = float(input(f"Enter the value of item {i + 1}: "))

items.append((weight, value))

capacity = float(input("Enter the knapsack's capacity: "))

result, total\_value = fractional\_knapsack(items, capacity)

print("\nSelected items in the knapsack:")

for weight, value in result:

print(f"Item with weight {weight} and value {value}")

print("Total value in the knapsack:", total\_value)

if \_name\_ == "\_\_main\_\_":

main()

**Output**

Enter the number of items: 5

Enter the name of item 1: I1

Enter the weight of item 1: 5

Enter the value of item 1: 30

Enter the name of item 2: I2

Enter the weight of item 2: 10

Enter the value of item 2: 20

Enter the name of item 3: I3

Enter the weight of item 3: 20

Enter the value of item 3: 100

Enter the name of item 4: I4

Enter the weight of item 4: 30

Enter the value of item 4: 90

Enter the name of item 5: I5

Enter the weight of item 5: 40

Enter the value of item 5: 160

Enter the knapsack's capacity: 60

Selected items in the knapsack:

Item with weight 5.0 and value 30.0

Item with weight 20.0 and value 100.0

Item with weight 35.0 and value 140.0

Total value in the knapsack: 270.0