

Practical No 3

Name : Vaishnavi Rajendra kapare

Roll No : 4161

Subject : DAA

Code :

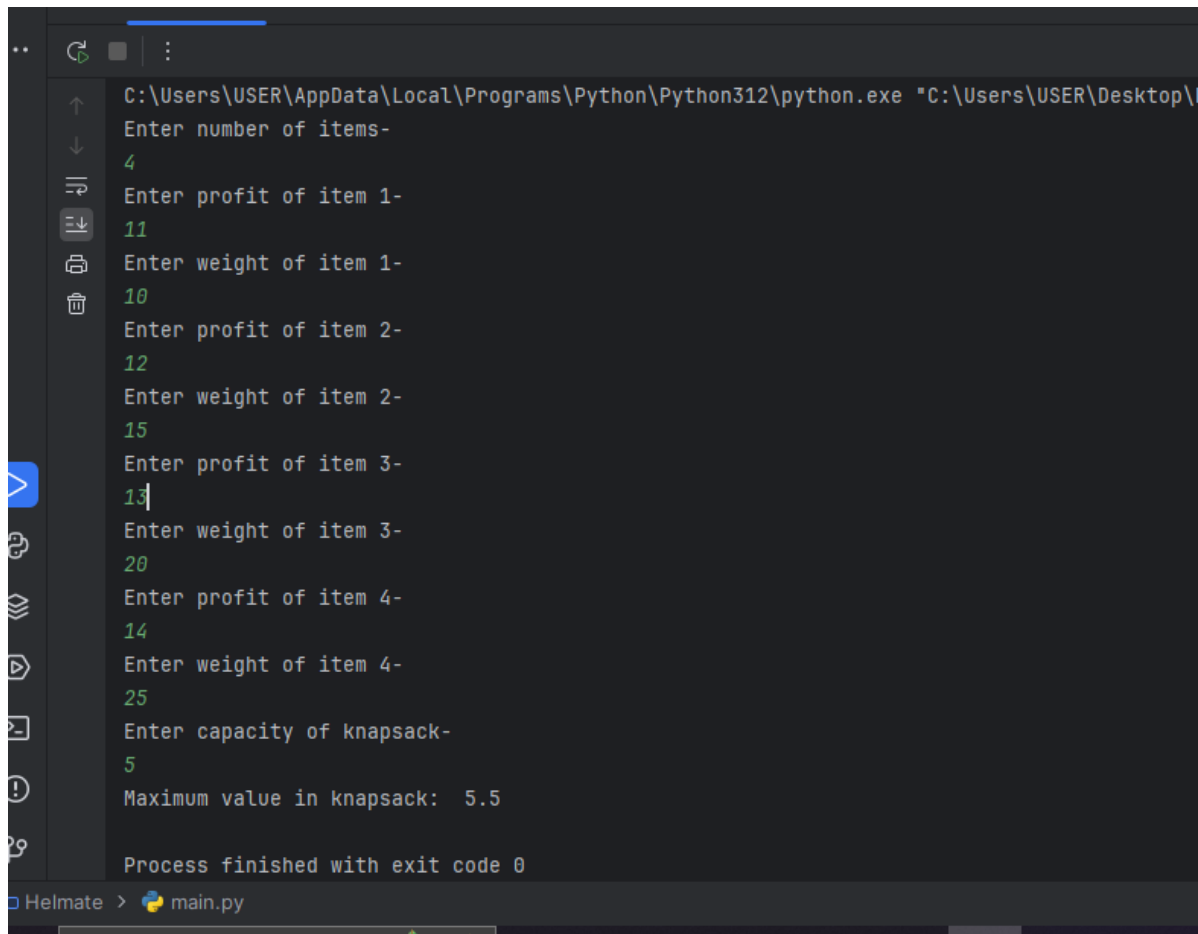
```
class Item:
    def __init__(self, profit, weight):
        self.profit = profit
        self.weight = weight

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))
```

Output :-



The screenshot shows a Python IDE window with a dark theme. The command prompt at the top displays the path to the Python executable: `C:\Users\USER\AppData\Local\Programs\Python\Python312\python.exe "C:\Users\USER\Desktop\`. The main area shows the program's execution with the following input and output:

```
Enter number of items-
4
Enter profit of item 1-
11
Enter weight of item 1-
10
Enter profit of item 2-
12
Enter weight of item 2-
15
Enter profit of item 3-
13
Enter weight of item 3-
20
Enter profit of item 4-
14
Enter weight of item 4-
25
Enter capacity of knapsack-
5
Maximum value in knapsack: 5.5
Process finished with exit code 0
```

The IDE interface includes a left sidebar with icons for file explorer, search, and other tools. The bottom status bar shows the file name `main.py` and the editor's language mode set to `Python`.