

Source Code :

```
def solve_knapsack():
    n = int(input("Enter the number of items: "))
    val = []
    wt = []

    for i in range(n):
        val.append(int(input(f"Enter the value of item {i + 1}: ")))
        wt.append(int(input(f"Enter the weight of item {i + 1}: ")))

    W = int(input("Enter the maximum weight capacity of the knapsack: "))

    dp = []
    for i in range(n + 1):
        row = []
        for j in range(W + 1):
            row.append(0)
        dp.append(row)

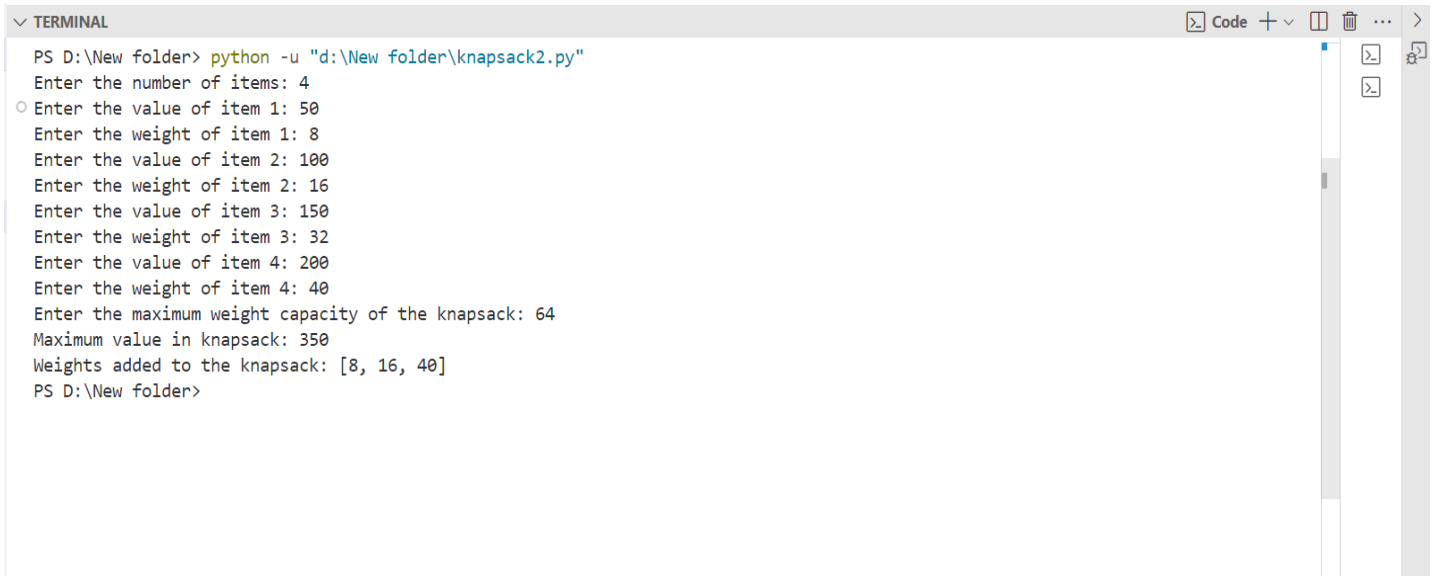
    for i in range(1, n + 1):
        for w in range(1, W + 1):
            if wt[i - 1] <= w:
                dp[i][w] = max(val[i - 1] + dp[i - 1][w - wt[i - 1]], dp[i - 1][w])
            else:
                dp[i][w] = dp[i - 1][w]

    max_value = dp[n][W]
    selected_weights = []
    w = W
    for i in range(n, 0, -1):
        if dp[i][w] != dp[i - 1][w]:
            selected_weights.append(wt[i - 1])
            w -= wt[i - 1]

    print("Maximum value in knapsack:", max_value)
    print("Weights added to the knapsack:", selected_weights[::-1])
```

```
if __name__ == "__main__":  
    solve_knapsack()
```

Output :



The screenshot shows a terminal window titled 'TERMINAL' with a toolbar containing icons for 'Code', a plus sign, a list, a trash, and a right arrow. The terminal output is as follows:

```
PS D:\New folder> python -u "d:\New folder\knapsack2.py"  
Enter the number of items: 4  
Enter the value of item 1: 50  
Enter the weight of item 1: 8  
Enter the value of item 2: 100  
Enter the weight of item 2: 16  
Enter the value of item 3: 150  
Enter the weight of item 3: 32  
Enter the value of item 4: 200  
Enter the weight of item 4: 40  
Enter the maximum weight capacity of the knapsack: 64  
Maximum value in knapsack: 350  
Weights added to the knapsack: [8, 16, 40]  
PS D:\New folder>
```