**Assignment No: 4**
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**Roll No.:** COBA103 **Subject:** DAA

**INPUT:**

```
def knapsack(values,weights,capacity):
    dp = [[0 for i in range(capacity+1)] for j in range(len(values)+1)]

    for item in range(1,len(values) + 1):
        for weight in range(1,capacity + 1):
            if weights[item - 1] <= weight:
                dp[item][weight] = max(dp[item-1][weight-weights[item-1]]+values[item-1],dp[item-
1][weight])
            else:
                dp[item][weight] = dp[item-1][weight]
    return dp[-1][-1]


while True:
    print("Press Ctrl+C to terminate...")
    n = int(input('Enter number of items: '))
    values = [int(i) for i in input("Enter values of items:").split(" ")]
    weights = [int(i) for i in input("Enter weights of items:").split(" ")]
    capacity = int(input("Enter maximum weight: "))
    maximum_value = knapsack(values,weights,capacity)
    print('The maximum value of items that can be carried:', maximum_value)
```

**OUTPUT:**

**Enter number of items: 4**

**Enter values of items: 12 45 60 13**

**Enter weights of items: 5 3 2 10**

**Enter maximum weight: 22**

**The maximum value of items that can be carried: 130**