SCS 2201 – Data Structures and Algorithms III
Group Assignment – Group 17

Question 01

1. Identify the problem statement in the greedy approach.

Maximize the value of goods that can be fit inside a 30 kg amount.

2. Explain why you choose the specific problem statement

This problem is a fractional maximization (optimization) problem which can be solved with the greedy approach. This scenario is closely similar with the fractional knapsack problem. Maximizing the value of all products under 30 kg.

3. Give the constraints according to your problem statement

Ramani can only buy upto 30 kg.
Ramani doesn't have to buy the whole amount of the items, she can buy fractions

4. For your problem statement, write the algorithm in the greedy approach

```
begin
      sort inventory from highest price per kg to lowest

      for loop from first item to last item
            if cart has more space than the item amount
                  buy all of the item
            else
                  buy kgs from item until cart is full

      print cart items
      print value
end
```

5. Write the program to print the maximum price by considering the above information.

`Question01.py` is included.