# CSE 242 – Algorithm Lab
## Lab 5 | Tasks | Topic: Greedy Algorithms

**1.** You are given **n** activities with their start and finish times. Your program should output the maximum number of activities that can be performed by a single person, assuming that a person can only work on a single activity at a time.

**Input:** start[] = {1, 3, 0, 5, 8, 5}, finish[] = {2, 4, 6, 7, 9, 9};
**Output:** 4
Explanation: Activity 1, 2, 4 and 5 were selected as they do not overlap.

**2.** Given the weights and profits of **N** items, in the form of **{profit, weight}** put these items in a knapsack of capacity **W** to get the maximum total profit in the knapsack. In **Fractional Knapsack**, we can break items for maximizing the total value of the knapsack.

**Input:** arr[] = {{60, 10}, {100, 20}, {120, 30}}, W = 50
**Output:** 240
**Explanation:** By taking items of weight 10 and 20 kg and 2/3 fraction of 30 kg.
Hence total price will be 60+100+(2/3)(120) = 240

**3.** Use the same greedy approach in the previous problem but this time the knapsack is not fractional meaning we cannot break the items.

**Input:** arr[] = {{60, 10}, {100, 20}, {120, 30}}, W = 50
**Output:** 160
**Explanation:** By taking items of weight 10 and 20 kg as the other item cannot be broken down.

Hence total price will be $60+100 = 160$