**Prelab-Week-6**

**Prelab Questions:**

1. What is Knapsack problem? Find the time complexity of Knapsack problem using greedy method.
2. Find the solution for Knapsack problem instance given below

|  |  |  |
| --- | --- | --- |
| **Item** | **Weight** | **Value** |
| 1 | 5 | 30 |
| 2 | 10 | 40 |
| 3 | 15 | 45 |
| 4 | 22 | 77 |
| 5 | 25 | 90 |

1. What is the procedure to calculate total number of record movements in optimal file merge patterns?
2. How to calculate compression ratio and entropy in lossless compression algorithm.
3. Find the optimal storage of the programs given below

13 programs on 3 tapes T0, T1 & T2 where the program are of lengths 12, 5, 8, 32, 7, 5, 18, 26, 4, 3, 11, 10 and 6.

**Pre-lab programs:**

1. Implement Knapsack problem using Greedy method
2. Implement Optimal merge patterns using Huffman encoding algorithm
3. Implement Optimal storage on tapes by using greedy method