**CS 202, Fall 2018**

**Homework #4 – Hash Tables, Graphs**

**Ouestion1:**

**A- LINEAR**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Slots | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| Content | 15 | 30 | 11 | 16 | 18 |  | 23 |

**B- QUADRATIC**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Slots | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| Content | 15 | 30 | 11 | 16 | 18 |  | 23 |

**C- DOUBLE**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Slots | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| Content | 15 | 16 | 11 | 30 | 18 |  | 23 |

**Question2:**

**A- topSort1**(in theGraph:Graph, out aList:List) {

// Arranges the vertices in graph theGraph into a

// toplogical order and places them in list aList

n = number of vertices in theGraph;

**for** (step=1 through n) {

select a vertex v that has no predecessors;

**aList.insert**(1,v);

Delete from theGraph vertex v and its edges;

}

}

**B-**

A-C-D-F-E-B-G

A-C-E-D-F-G-B