AHMED L SAEED

CIS 3501 002

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PROGRAM 03 – THREES COMPANY

**Time Space Analysis**

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| --- | --- | --- |
| Function | Time Analysis | Space Analysis |
| Cave\_Layout ( vector<vector<int>> graph, int n) | O(n) | O(n2) |
| void trigger\_movement() | O(n) | O(1) |
| void moveJacob(int i) | O(n) | O(1) |
| void moveEdward(int i) | O(n) | O(1) |
| main() | O(n2) | O(n2) |

**Test Plan**

|  |  |  |  |
| --- | --- | --- | --- |
| Reason for Test | Actual Input Data | Expected Output | Actual Output |
| Connect cave 1 to cave 3 for Jacob’s direct access to Bella within 1 turn | 4 1 3 2  0 1 2 3  0 2 1 4  0 2 1 4  0 2 2 3 | Bella marries Jacob in 1 moves | Bella marries Jacob in 1 moves |
| No caves will guide Jacob and Edward to Bella. | 4 1 3 2  0 0  0 2 3 4  0 2 2 4  0 2 2 3 | Everyone dies in 101 moves | Everyone dies in 101 moves |
| Check to see if an 8 level graph works correctly | 8 8 5 1 0 3 6 2 5 0 3 1 7 3 0 3 2 6 4 0 2 5 3 0 3 4 1 7 0 2 3 1 0 3 2 5 8 0 1 7 | Bella marries Jacob in 7 moves | Bella marries Jacob in 7 moves |
| Only connect cave 1 and cave 2 | 4 1 3 2 0 1 2 0 1 1 0 1 4 0 1 3 | Bella marries Edward in 1 moves | Bella marries Edward in 1 moves |