AHMED L SAEED

CIS 3501 002

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PROGRAM 04 – SECURITY BREACH

**Time – Space Analysis**

|  |  |  |
| --- | --- | --- |
| Function | Time Analysis | Space Analysis |
| Heist | O(n) | O(n2) |
| void getRC | O(1) | O(1) |
| void initialize | O(1) | O(n) |
| void set\_floor | O(n) | O(1) |
| void scope\_floor | O(n2) | O(n2) |
| bool camera\_check | O(1) | O(1) |
| void move\_camera | O(n2) | O(1) |
| void start\_heist | O(1) | O(1) |
| void remove\_crates | O(n2) | O(n2) |
| void print | O(1) | O(1) |
| int main | O(n2) | O(n2) |

**Test Plan**

|  |  |  |  |
| --- | --- | --- | --- |
| Reason for Test | Actual Input Data | Expected Output | Actual Output |
| Test for even minimum matrix | 2 2  10 10  10 10 | 18 | 18 |
| Test a 5x5 matrix with the same elements every other row/col | 5 5  10 20 30 40 50  50 40 30 20 10  10 20 30 40 50  50 40 30 20 10  10 20 30 40 50 | 422 | 422 |
| Return 0 for a one level matrix | 1 10 1 2 3 4 5 6 7 8 9 10 | 0 | 0 |
| Spread even down the middle | 5 3 100 99 98 99 100 100 99 98 99 100 100 99 98 99 100 | 979 | 979 |
| Pyramid shaped stacks | 6 6 0 0 0 0 0 0 0 3 3 3 3 0 0 3 6 6 3 0 0 3 6 6 3 0 0 3 3 3 3 0 0 0 0 0 0 0 | 30 | 30 |