Hisham Hussein
Time and space analysis
CIS 350

Time and space analysis:

Time and space analysis

Function Name	Time analysis O()	Space analysis O()
int main(){ }	$O(n^6)$	$O(n^6)$
void creatingCave(){}	$O(n^2)$	$O(n^2)$
void actorsLocation(int b,int j, int e, int caveCases){}	$O(1)$	$O(1)$
void actor_edward(){}	$O(n)$	$O(n)$
void Actor_jacob(){}	$O(n)$	$O(n)$
oid theStage(){}	$O(n^2)$	$O(n^2)$

Test plan:

Reason for the test,	Actual input data	expected output data,	actual output.
What will happen if we just allergen with non allergen	4 1 3 2 0 1 2 0 3 1 3 4 0 2 2 4 0 2 2 3 4 1 3 2 -1 1 2 0 3 1 3 4 0 2 2 4 1 2 2 3 4 1 3 2 -1 1 2 1 3 1 3 4 0 2 2 4 0 2 2 3 0 0 0 0	Bella marries Edward in 4 moves Bella marries Jacob in 3 moves Everyone dies in 101 moves	Bella marries Edward in 4 moves Bella marries Jacob in 3 moves Everyone dies in 101 moves
What will happen if we but 1 between the 0 0 0 0 to 0 1 0 0 will the program stops or continue	4 1 3 2 0 1 2 0 3 1 3 4 0 2 2 4 0 2 2 3 4 1 3 2 -1 1 2 0 3 1 3 4 0 2 2 4 1 2 2 3 4 1 3 2 -1 1 2 1 3 1 3 4 0 2 2 4 0 2 2 3 <mark>0 1 0 0</mark>	Program should exits	Program ended with exit code: 0
what will happen if I put Jacob and Edward in the same cave together at once	<mark>4 1 3 3</mark> 0 1 2 0 3 1 3 4 0 2 2 4 0 2 2 3 4 1 3 2 -1 1 2 0 3 1 3 4 0 2 2 4 1 2 2 3 4 1 3 2 -1 1 2	It should skip the fist case and go to the next test case Bella marries Jacob in 3 moves Everyone dies in 101 moves	Bella marries Jacob in 3 moves Everyone dies in 101 moves

	1 3 1 3 4 0 2 2 4 0 2 2 3 0 0 0 0		
Trying to test if Edward will meet Bella first if I only but one cave between them and 2 cave between Bella and Jacob	4 3 1 4 0 1 2 0 3 1 3 4 0 2 2 4 0 2 2 3 4 1 3 2 -1 1 2 0 3 1 3 4 0 2 2 4 1 2 2 3 4 1 3 2 -1 1 2 1 3 1 3 4 0 2 2 4 0 2 2 3	Bella marries Edward in 1 moves Bella marries Jacob in 3 moves Everyone dies in 101 moves	Bella marries Edward in 1 moves Bella marries Jacob in 3 moves Everyone dies in 101 moves
What will happen if Edward and Jacob meet together in cave then Bella Cave	4 1 3 2 -1 2 2 4 0 3 1 3 4 0 2 2 4 0 3 1 2 3	The program should skip and go to the next test case	The program reset and goes to the next test cave

Output:

```
4 1 3 2
0 1 2
0 3 1 3 4
0 2 2 4
0 2 2 3
4 1 3 2
-1 1 2
0 3 1 3 4
0 2 2 4
1 2 2 3
4 1 3 2
-1 1 2
1 3 1 3 4
0 2 2 4
0 2 2 3
0 0 0 0
Bella marries Edward in 4 moves
Bella marries Jacob in 3 moves
Everyone dies in 101 moves
Program ended with exit code: 0
```