Various Test Cases and Outputs

CASE 1 - Pig escapes from the bird

```
Displaying the 1d grid
0-unoccupied
1-Pig
2-stone
[1, 2, 1, 0, 2, 1, 1, 0, 1, 2, 2, 1]
 Pig network set up, All pigs listening
Bird landing position :2
Time taken by the bird :4
Hop count for the system :6
Bird Approaching packets are being sent ...
All pigs have received the bird approaching packet
Status packets are being sent ...
Result from pig at position 5 WAS HIT ? :False
Result from pig at position 3 WAS HIT ? :False
Result from pig at position 0 WAS HIT ? :False
Result from pig at position 8 WAS HIT ? :False
Result from pig at position 11 WAS HIT ? :False
Result from pig at position 6 WAS HIT ? :False
All pigs have received the Status packet
Score based on the number of pigs killed
SCORE : 0
A visualization representing the result
Displaying the 1d grid
'0'-unoccupied
'1'-Pig
'2'-stone
'D'-Deadpig
'11'- Two pigs
['1', '2', '0', '1', '2', '1', '1', '0', '1', '2', '2', '1']
```

Explanation

Since the bird time is 4,the bird approaching packet is received by the pig before the bird reaches the pig position the pig moves to the next position and hence is safe .

CASE 2 - Bird kills the pig

```
Displaying the 1d grid
0-unoccupied
1-Pig
2-stone
[1, 2, 1, 0, 2, 1, 1, 0, 1, 2, 2, 1]
 Pig network set up, All pigs listening
Bird landing position :2
Time taken by the bird :2
Hop count for the system :6
Bird Approaching packets are being sent ...
All pigs have received the bird approaching packet
Status packets are being sent ...
Result from pig at position 5 WAS HIT ? :False
Result from pig at position 2 WAS HIT ? :True
```

```
Result from pig at position 0 WAS HIT ? :False
Result from pig at position 8 WAS HIT ? :False
Result from pig at position 11 WAS HIT ? :False
Result from pig at position 6 WAS HIT ? :False
All pigs have received the Status packet
Score based on the number of pigs killed
SCORE : 1
A visualization representing the result
Displaying the 1d grid
'0'-unoccupied
'1'-Pig
'2'-stone
'D'-Deadpig
'11'- Two pigs
['1', '2', 'D', '0', '2', '1', '1', '0', '1', '2', '2', '1']
```

Explanation

   Here the bird time is 2 seconds and thus it hits the pig at position 2 and the pig is dead . Since the bird approaching packet wouldn't have reached the pig before the bird time , the pig dies.

CASE 3 - bird falls on the pig , pig falls on its neighbor both die .

```
Displaying the 1d grid
0-unoccupied
1-Pig
2-stone
[1, 2, 1, 0, 2, 1, 1, 0, 1, 2, 2, 1]
 Pig network set up, All pigs listening
Bird landing position :5
Time taken by the bird :2
Hop count for the system :6
Bird Approaching packets are being sent ...
All pigs have received the bird approaching packet
Status packets are being sent ...
Result from pig at position 0 WAS HIT ? :False
Result from pig at position 6 WAS HIT ? :True
Result from pig at position 5 WAS HIT ? :True
Result from pig at position 8 WAS HIT ? :False
Result from pig at position 11 WAS HIT ? :False
Result from pig at position 2 WAS HIT ? :False
All pigs have received the Status packet
Score based on the number of pigs killed
SCORE : 2
A visualization representing the result
Displaying the 1d grid
'0'-unoccupied
'1'-Pig
'2'-stone
'D'-Deadpig
'11'- Two pigs
['1', '2', '1', '0', '2', 'D', 'D', '0', '1', '2', '2', '1']
```

Explanation

 Here the bird falls on pig at position 5, that in turn falls on pig 6 killing both the pigs .

CASE4 - bird hits hitting pig , pig hits stone column , stone column hits pig

```
Displaying the 1d grid
0-unoccupied
1-Pig
2-stone
[1, 2, 1, 0, 2, 1, 1, 0, 1, 2, 2, 1]
 Pig network set up, All pigs listening
Bird landing position :0
Time taken by the bird :2
Hop count for the system :6
Bird Approaching packets are being sent ...
All pigs have received the bird approaching packet
Status packets are being sent ...
Result from pig at position 5 WAS HIT ? :False
Result from pig at position 0 WAS HIT ? :True
Result from pig at position 2 WAS HIT ? :True
Result from pig at position 8 WAS HIT ? :False
Result from pig at position 11 WAS HIT ? :False
Result from pig at position 6 WAS HIT ? :False
All pigs have received the Status packet
Score based on the number of pigs killed
SCORE : 2
A visualization representing the result
Displaying the 1d grid
'0'-unoccupied
'1'-Pig
'2'-stone
'D'-Deadpig
'11'- Two pigs
['D', '0', 'D', '0', '2', '1', '1', '0', '1', '2', '2', '1']
```

Explanation

 Here , the bird falls on the pig at position 0 , that falls on the stone column breaks the stone column , that in turn falls on the next pig and it dies as well .

CASE5 - bird hits stone column , stone column hits pig

```
Displaying the 1d grid
0-unoccupied
1-Pig
2-stone
[1, 2, 1, 0, 2, 1, 1, 0, 1, 2, 2, 1]
 Pig network set up, All pigs listening
Bird landing position :1
Time taken by the bird :2
Hop count for the system :6
Bird Approaching packets are being sent ...
All pigs have received the bird approaching packet
Status packets are being sent ...
Result from pig at position 5 WAS HIT ? :False
Result from pig at position 0 WAS HIT ? :False
Result from pig at position 2 WAS HIT ? :True
Result from pig at position 8 WAS HIT ? :False
Result from pig at position 11 WAS HIT ? :False
Result from pig at position 6 WAS HIT ? :False
All pigs have received the Status packet
Score based on the number of pigs killed
SCORE : 1
A visualization representing the result
Displaying the 1d grid
```

```
'0'-unoccupied
'1'-Pig
'2'-stone
'D'-Deadpig
'11'- Two pigs
['1', '0', 'D', '0', '2', '1', '1', '0', '1', '2', '2', '1']
```

Explanation

  The bird falls on the stone column and the stone column falls on pig at position 2 and kills it . Hence position 1 no longer has a stone column and the pig at position 2 is dead

CASE6 - Bird falls on no man's land

```
Displaying the 1d grid
0-unoccupied
1-Pig
2-stone
[1, 2, 1, 0, 2, 1, 1, 0, 1, 2, 2, 1]
 Pig network set up, All pigs listening
Bird landing position :7
Time taken by the bird :2
Hop count for the system :6
Bird Approaching packets are being sent ...
All pigs have received the bird approaching packet
Status packets are being sent ...
Result from pig at position 5 WAS HIT ? :False
Result from pig at position 0 WAS HIT ? :False
Result from pig at position 2 WAS HIT ? :False
Result from pig at position 8 WAS HIT ? :False
Result from pig at position 11 WAS HIT ? :False
Result from pig at position 6 WAS HIT ? :False
All pigs have received the Status packet
Score based on the number of pigs killed
SCORE : 0
A visualization representing the result
Displaying the 1d grid
'0'-unoccupied
'1'-Pig
'2'-stone
'D'-Deadpig
'11'- Two pigs
['1', '2', '1', '0', '2', '1', '1', '0', '1', '2', '2', '1']
```

CASE7 - Stone column at the last position

```
Displaying the 1d grid
0-unoccupied
1-Pig
2-stone
[1, 2, 1, 0, 2, 1, 1, 0, 1, 2, 1, 2]
 Pig network set up, All pigs listening
Bird landing position :11
Time taken by the bird :2
Hop count for the system :6
Bird Approaching packets are being sent ...
All pigs have received the bird approaching packet
Status packets are being sent ...
Result from pig at position 5 WAS HIT ? :False
Result from pig at position 0 WAS HIT ? :False
Result from pig at position 2 WAS HIT ? :False
Result from pig at position 8 WAS HIT ? :False
```

```
Result from pig at position 10 WAS HIT ? :False
Result from pig at position 6 WAS HIT ? :False
All pigs have received the Status packet
Score based on the number of pigs killed
SCORE : 0
A visualization representing the result
Displaying the 1d grid
'0'-unoccupied
'1'-Pig
'2'-stone
'D'-Deadpig
'11'- Two pigs
['1', '2', '1', '0', '2', '1', '1', '0', '1', '2', '2', '0']
```

CASE8 - Pig at the last position

```
Displaying the 1d grid
0-unoccupied
1-Pig
2-stone
[1, 2, 1, 0, 2, 1, 1, 0, 1, 2, 2, 1]
 Pig network set up, All pigs listening
Bird landing position :11
Time taken by the bird :2
Hop count for the system :6
Bird Approaching packets are being sent ...
All pigs have received the bird approaching packet
Status packets are being sent ...
Result from pig at position 5 WAS HIT ? :False
Result from pig at position 0 WAS HIT ? :False
Result from pig at position 2 WAS HIT ? :False
Result from pig at position 8 WAS HIT ? :False
Result from pig at position 11 WAS HIT ? :True
Result from pig at position 6 WAS HIT ? :False
All pigs have received the Status packet
Score based on the number of pigs killed
SCORE : 1
A visualization representing the result
Displaying the 1d grid
'0'-unoccupied
'1'-Pig
'2'-stone
'D'-Deadpig
'11'- Two pigs
['1', '2', '1', '0', '2', '1', '1', '0', '1', '2', '2', 'D']
```

CASE9 - Pig caught between a two walls / a wall and a stone column

```
Displaying the 1d grid
0-unoccupied
1-Pig
2-stone
[1, 2, 1, 0, 2, 1, 1, 0, 1, 2, 2, 1]
 Pig network set up, All pigs listening
Bird landing position :11
Time taken by the bird :11
Hop count for the system :6
Bird Approaching packets are being sent ...
All pigs have received the bird approaching packet
Status packets are being sent ...
Result from pig at position 5 WAS HIT ? :False
```

```
Result from pig at position 0 WAS HIT ? :False
Result from pig at position 2 WAS HIT ? :False
Result from pig at position 8 WAS HIT ? :False
Result from pig at position 11 WAS HIT ? :True
Result from pig at position 6 WAS HIT ? :False
All pigs have received the Status packet
Score based on the number of pigs killed
SCORE : 1
A visualization representing the result
Displaying the 1d grid
'0'-unoccupied
'1'-Pig
'2'-stone
'D'-Deadpig
'11'- Two pigs
['1', '2', '1', '0', '2', '1', '1', '0', '1', '2', '2', 'D']
```

Explanation

In spite of the bird taking a lot of time , the pig at position 11 cannot escape since it has the wall on one side and a stone column on the other . Thus it is trapped and it dies .

Note:

Cases(4,5) can also be done with a high bird time , thus letting the pigs escape if it is possible