

Note that for a given  $(r, c)$

the following code will not be executed more than once :

```
memo[r][c] = V[r][c] + min(findMinPath(V, r + 1, c), findMinPath(V, r, c + 1));
```

Once  $memo[r][c]$  is set, the functions will return at

```
if (memo[r][c] != -1) return memo[r][c];
```

So, every function ends up calling other functions at most 1 time.

In other words, every function ends up executing atmost  $O(1)$  times (Note that you can shift the part about checking for  $memo[r][c] \neq -1$  at the callsite ).

$O(R * C)$  possible number of combinations are possible for  $(r, c)$

Hence, the time complexity of the function :  $O(R * C)$