

-ENVIRONMENT UPDATES-

```
x-g ∈ ([0, 19])  
  if new else  
    ({ x-g })  
y-g ∈ ([0, 19])  
  if new else  
    ({ y-g })  
x-d ∈ ({ max(0, (x-d - 1)) })  
  if (act = 'W') else  
    ({ min(19, (x-d + 1)) })  
  if (act = 'E') else  
    ({ x-d })  
y-d ∈ ({ max(0, (y-d - 1)) })  
  if (act = 'S') else  
    ({ min(19, (y-d + 1)) })  
  if (act = 'N') else  
    ({ y-d })
```

-VARIABLE INFO-

```
act - VAR - { 'W', 'E', 'N', 'S' }  
new - VAR - BOOLEAN  
x-d - VAR - [0, 19]  
y-d - VAR - [0, 19]  
x-g - VAR - [0, 19]  
y-g - VAR - [0, 19]
```

-INITIAL VALUES-

```
act ∈ { 'W' }  
new ∈ { ⊥ }  
x-d ∈ { 0 }  
y-d ∈ { 0 }  
x-g ∈ { x-d }  
y-g ∈ { y-d }
```

