

**Service:** Entity **include** Mob  
**Observers:** Hp: [Entity]  $\rightarrow$  int  
**Constructors:** init: Environment  $\times$  int  $\times$  int  $\times$  Dir  $\times$  int  $\rightarrow$  [Entity]  
**pre** init(E,x,y,D,h) **requires** h > 0  
**Operators:** step: [Entity]  $\rightarrow$  [Entity]  
**Observations:**  
[init]: Hp(init(E,x,y,D,h)) = h  
[attack]: Face(E) = N **and** Environment::CellContent(Envi(E),Col(E),Row(E)-1)  $\neq$  No  
**implies** HP(Attack(Environment::CellContent(Envi(E),Col(E),Row(E)-1))) =  
HP(Environment::CellContent(Envi(E),Col(E),Row(E)-1)) - 1  
  
Face(E) = S **and** Environment::CellContent(Envi(E),Col(E),Row(E)+1)  $\neq$  No  
**implies** HP(Environment::CellContent(Envi(E),Col(E),Row(E)+1)) =  
HP(Environment::CellContent(Envi(E),Col(E),Row(E)+1))@pre - 1  
  
Face(E) = E **and** Environment::CellContent(Envi(E),Col(E)+1,Row(E))  $\neq$  No  
**implies** HP(Environment::CellContent(Envi(E),Col(E)+1,Row(E))) =  
HP(Environment::CellContent(Envi(E),Col(E)+1,Row(E)))@pre - 1  
  
Face(E) = W **and** Environment::CellContent(Envi(E),Col(E)-1,Row(E))  $\neq$  No  
**implies** HP(Environment::CellContent(Envi(E),Col(E)-1,Row(E))) =  
HP(Environment::CellContent(Envi(E),Col(E)-1,Row(E)))@pre - 1