

# CAR[G]<sup>+</sup>

**feature** -- queries

model: G

year: INTEGER

odometer: INTEGER

**feature** -- { **NONE** }

make (a\_model: G; a\_year: INTEGER; a\_miles: **like** odometer)

-- Initialize a new car with `a\_model`, `a\_year`, and an odometer read `a\_miles`.

**require**

*consistent\_year*: a\_year  $\geq$  1900

*positive\_miles*: a\_miles  $\geq$  0

**ensure**

*proper\_initialization*:

model  $\sim$  a\_model  $\wedge$  year = a\_year  $\wedge$  odometer = a\_miles

**feature** -- commands

update\_odometer (a\_mileage: INTEGER)

-- Increase the odometer read by `a\_mileage`.

**require**

*positive\_increase*: a\_mileage  $>$  0

**ensure**

*correct\_update*: odometer = **old** odometer + a\_mileage

**invariant**

*valid\_car\_year*: year  $\geq$  1900

*valid\_mileage*: odometer  $\geq$  0