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In [14]:

```
!pip install clipspy
from clips import Environment, Symbol

environment = Environment()
```

```
Requirement already satisfied: clipspy in c:\users\narcisa\anaconda3\lib\s
ite-packages (0.3.3)
Requirement already satisfied: cffi>=1.0.0 in c:\users\narcisa\anaconda3\l
ib\site-packages (from clipspy) (1.14.0)
Requirement already satisfied: pycparser in c:\users\narcisa\anaconda3\lib
\site-packages (from cffi>=1.0.0->clipspy) (2.19)
```

In [15]:

```
environment.load('animales.clp')
```

In [16]:

```
environment.reset()
environment.run()
```

Out[16]:

```
10
```

In [17]:

```
for rule in environment.rules():
    print(rule)
```

```
(defrule MAIN::mamifero-1
   (tiene-pelos)
   =>
   (assert (es-mamifero)))

(defrule MAIN::mamifero-2
   (da-leche)
   =>
   (assert (es-mamifero)))

(defrule MAIN::ungulado-1
   (es-mamifero)
   (tiene-pezunias)
   =>
   (assert (es-ungulado)))

(defrule MAIN::ungulado-2
   (es-mamifero)
   (rumia)
   =>
   (assert (es-ungulado)))

(defrule MAIN::invertebrado-1
   (no-tiene-huesos)
   =>
   (assert (es-invertebrado)))

(defrule MAIN::invertebrado-2
   (tiene-caparazon)
   =>
   (assert (es-invertebrado)))

(defrule MAIN::artropodo-1
   (es-invertebrado)
   (tiene-patas)
   =>
   (assert (es-artropodo)))

(defrule MAIN::artropodo-2
   (es-invertebrado)
   (nacen-huevos)
   =>
   (assert (es-artropodo)))

(defrule MAIN::aracnidos-1
   (es-artropodo)
   (cuatro-pares-patas)
   =>
   (assert (es-aracnido)))

(defrule MAIN::aracnidos-2
   (es-artropodo)
   (no-tiene-antenas)
   =>
   (assert (es-aracnido)))

(defrule MAIN::insectos-1
   (es-artropodo)
   (tiene-tres-pares-patas)
   =>
   (assert (es-insecto)))
```

```
(defrule MAIN::insectos-2
   (es-artropodo)
   (tiene-antenas)
   =>
   (assert (es-insecto)))

(defrule MAIN::avez-1
   (tiene-plumas)
   =>
   (assert (es-ave)))

(defrule MAIN::avez-2
   (pone-huevos)
   =>
   (assert (es-ave)))

(defrule MAIN::gallinaceas-1
   (es-ave)
   (tiene-pico-corto)
   =>
   (assert (es-gallinacea)))

(defrule MAIN::gallinaceas-2
   (es-ave)
   (tiene-alas-cortas)
   =>
   (assert (es-gallinacea)))

(defrule MAIN::anceriformes-1
   (es-ave)
   (tiene-pico-aplanado)
   =>
   (assert (es-anceriforme)))

(defrule MAIN::anceriformes-2
   (es-ave)
   (tiene-patas-palmeadas)
   =>
   (assert (es-anceriforme)))

(defrule MAIN::corredoras-1
   (es-ave)
   (no-vuelan)
   =>
   (assert (es-corredoras)))

(defrule MAIN::pato
   (es-anceriforme)
   (cuello-corto)
   =>
   (assert (es-pato)))

(defrule MAIN::ganzo
   (es-anceriforme)
   (cuello-largo)
   =>
   (assert (es-ganzo)))

(defrule MAIN::gallina
   (es-gallinacea)
```

```
   (es-domestica)
   =>
   (assert (es-gallina)))

(defrule MAIN::codorniz
   (es-gallinacea)
   (tiene-alas-puntiagudas)
   =>
   (assert (es-codorniz)))

(defrule MAIN::jirafa
   (es-ungulado)
   (tiene-cuello-largo)
   =>
   (assert (es-jirafa)))

(defrule MAIN::cebra
   (es-ungulado)
   (tiene-rayas)
   =>
   (assert (es-cebra)))

(defrule MAIN::abeja
   (es-insecto)
   (tiene-miel)
   =>
   (assert (es-abeja)))

(defrule MAIN::mariposa
   (es-insecto)
   (no-pica)
   =>
   (assert (es-mariposa)))

(defrule MAIN::arana
   (es-aracnido)
   (tiene-patas)
   =>
   (assert (es-arana)))

(defrule MAIN::escorpion
   (es-aracnido)
   (tiene-pinzas)
   =>
   (assert (es-escorpion)))
```

In [18]:

```
for fact in environment.facts():
    print(fact)
```

```
(initial-fact)
(tiene-pelos)
(tiene-pezunias)
(tiene-cuello-largo)
(no-tiene-huesos)
(nacen-huevos)
(cuatro-pares-patas)
(tiene-patas)
(tiene-tres-pares-patas)
(no-pica)
f-10    (es-invertebrado)
f-11    (es-artropodo)
f-12    (es-aracnido)
f-13    (es-arana)
f-14    (es-insecto)
f-15    (es-mariposa)
f-16    (es-mamifero)
f-17    (es-ungulado)
f-18    (es-jirafa)
```

In [ ]:

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In [ ]:

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