

# NetLogo

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# ¿Qué es?

- ⦿ Entorno programable de modelado (basado en agentes), para simular fenómenos naturales y sociales.
- ⦿ Creado en 1999 por Uri Wilensky
- ⦿ Lenguaje LOGO (basado en LISP)

# ¿Qué ofrece?

- Cientos o miles de agentes que operan de manera independiente, entre sí o con el entorno
- Explorar la relación entre el comportamiento a bajo nivel de los individuos y los patrones macroscópicos que surgen a partir de la interacción de muchos individuos entre sí
- Editar simulaciones explorando su comportamiento bajo una serie de condiciones
- Incluye galería de modelos

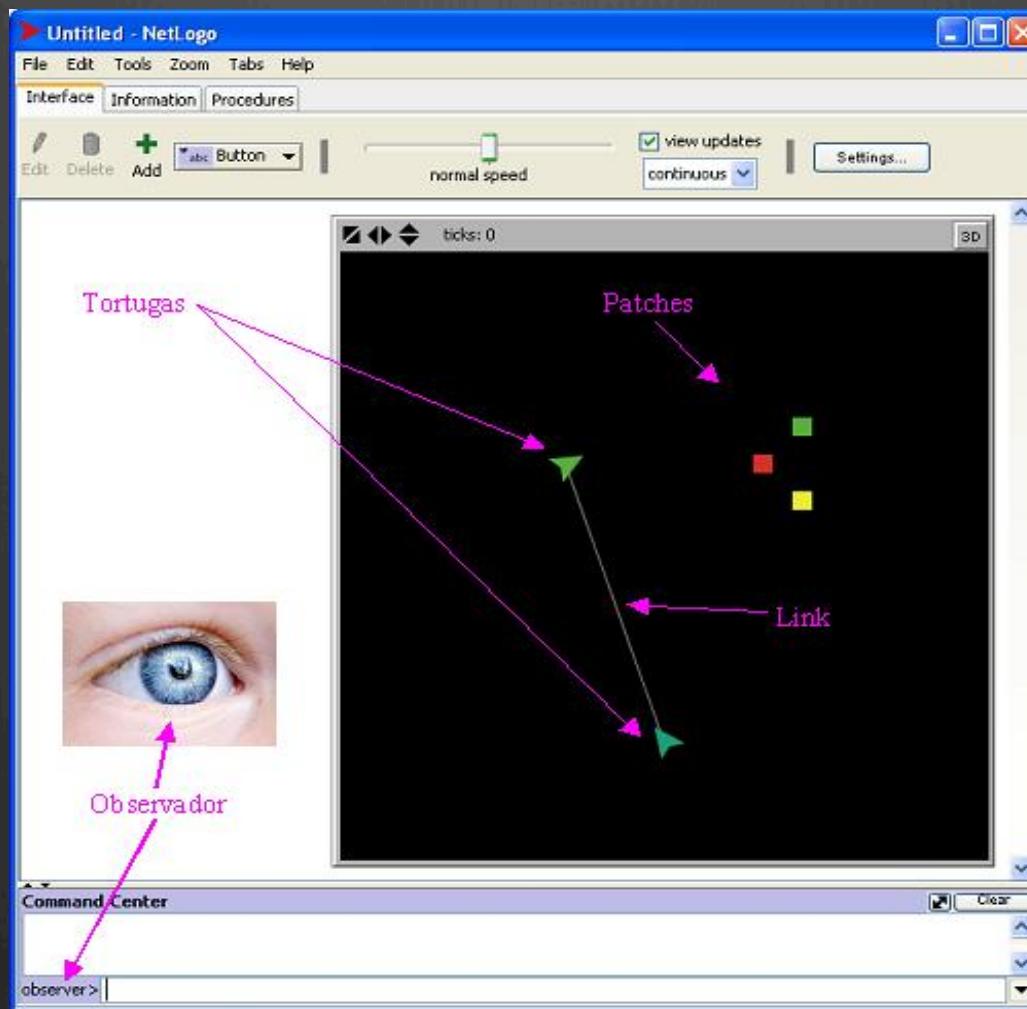
# Instalación

- Gratis :<https://ccl.northwestern.edu/netlogo/5.1.0/>
- Sistema Multiplataforma (Windows, Mac OSX, Linux)
- Instalación (Mac OSX) : Sencilla, montar un volumen.

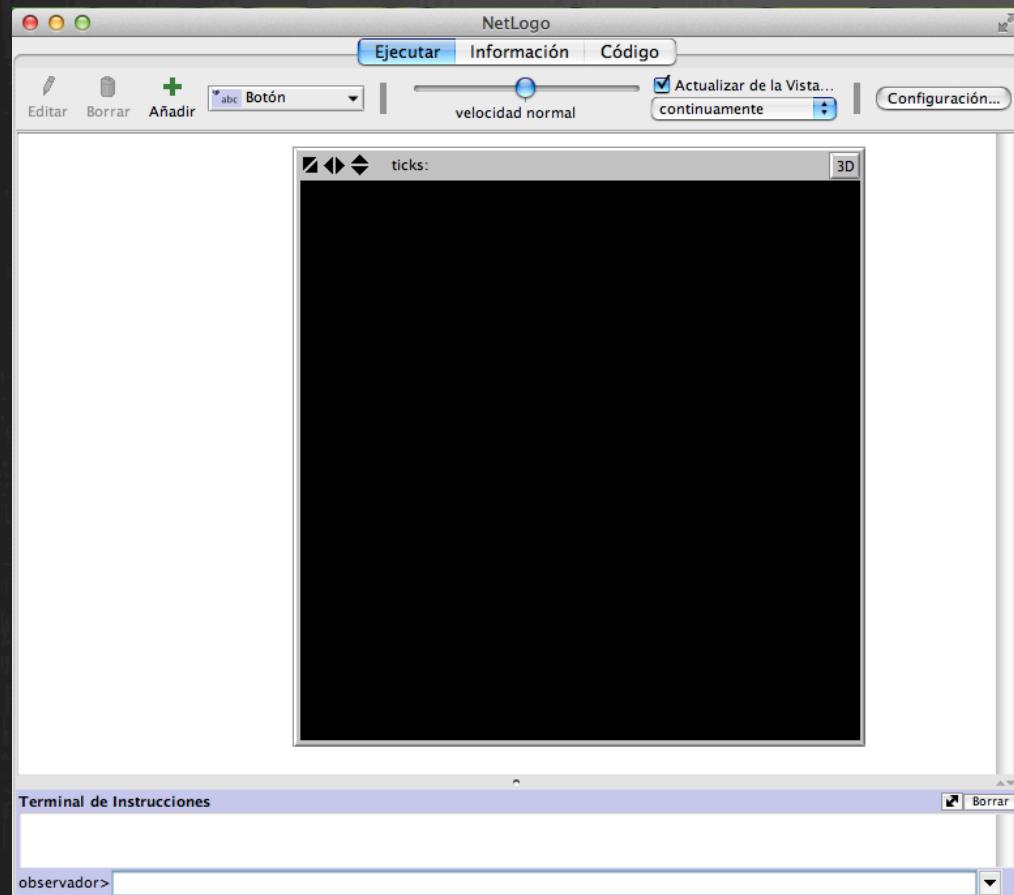
# Tipos de agentes

- **Tortugas (turtles)** : Se mueven por el mundo, interaccionan entre sí y con el mundo. Identificador único
- **Celdas (patches)** : Cada porción cuadrada del mundo identificado por coordenadas
- **Links** : Relaciones entre tortugas. Se representan con un par (tortuga1,tortuga2)
- **Observador** : No representado pero interactúa (crea y destruye agentes, asigna propiedades,etc )

# Tipos de agentes

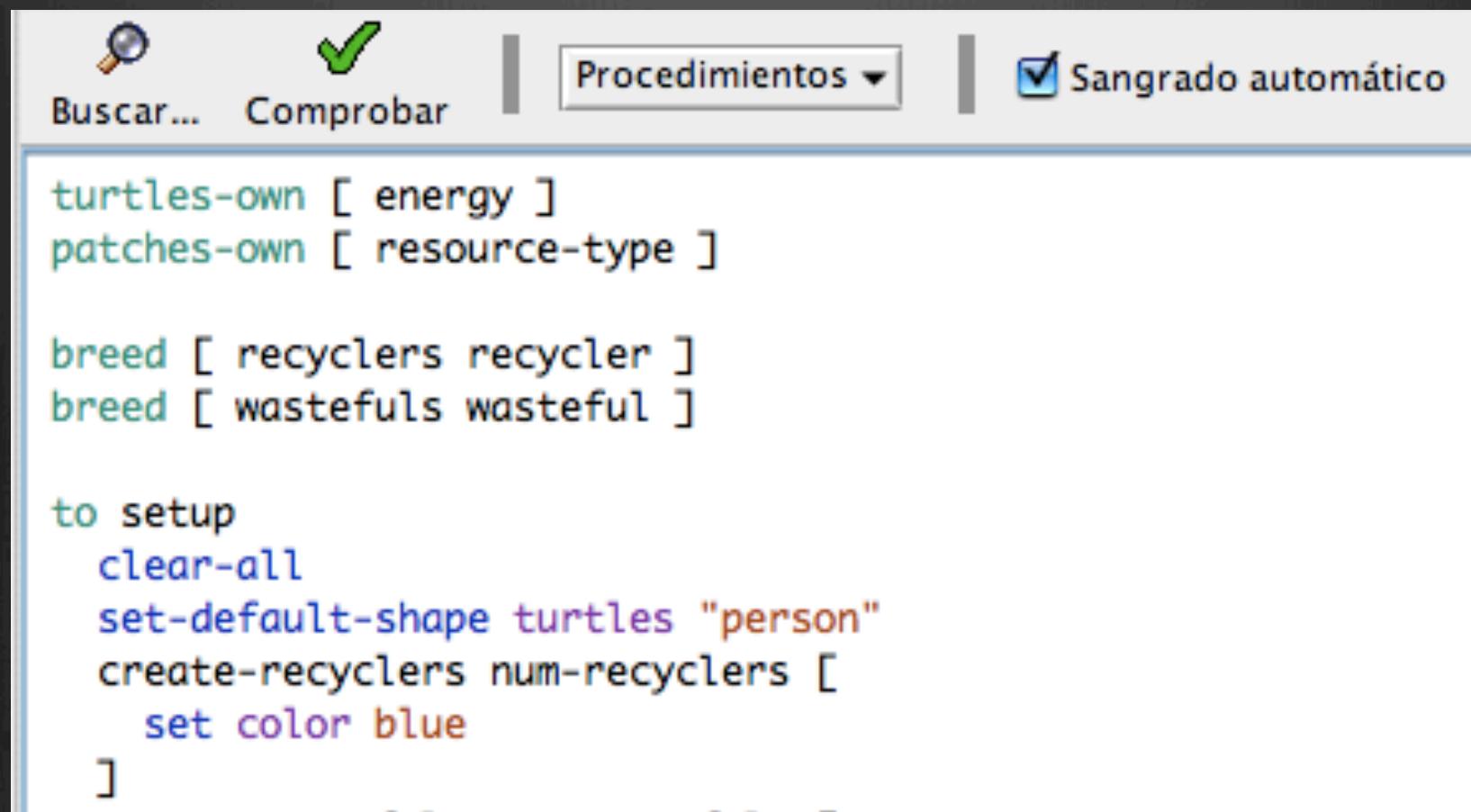


# Entorno gráfico



- Fácil manejo
- Interfaz intuitiva
- Personalizable

# Entorno gráfico



The screenshot shows the NetLogo interface with the following elements:

- Toolbar:** Includes icons for magnifying glass (Buscar...), green checkmark (Comprobar), a dropdown menu labeled "Procedimientos", and a checked checkbox labeled "Sangrado automático".
- Script Editor:** Displays the following NetLogo code:

```
turtles-own [ energy ]
patches-own [ resource-type ]

breed [ recyclers recycler ]
breed [ wastefuls wasteful ]

to setup
  clear-all
  set-default-shape turtles "person"
  create-recyclers num-recyclers [
    set color blue
  ]
```

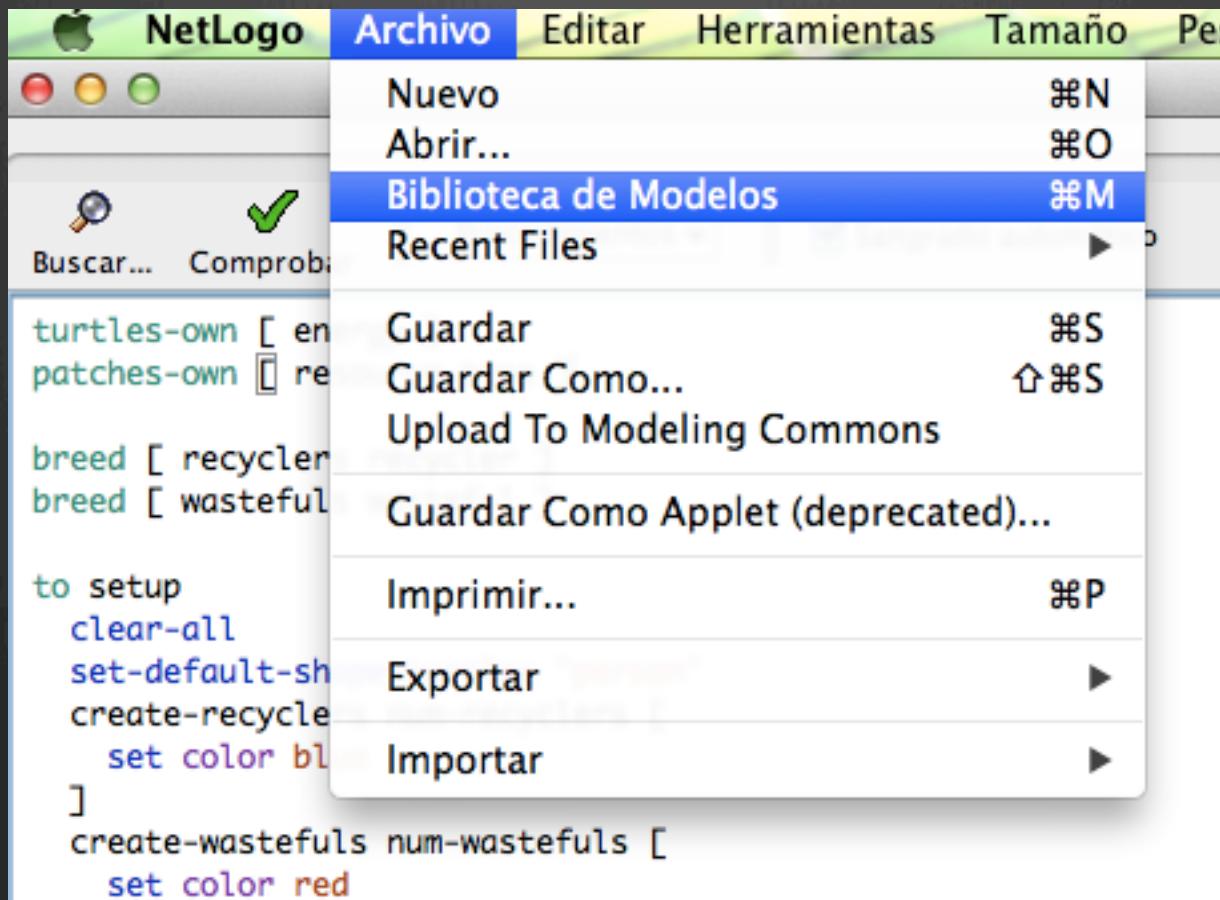
# Entorno gráfico

The screenshot shows the NetLogo interface with the "Información" tab selected. The window title is "NetLogo". The menu bar includes "NetLogo", "Ejecutar", "Información" (which is highlighted in blue), and "Código". Below the menu is a toolbar with icons for "Buscar..." and "Editar". The main area contains six sections with blue headers:

- WHAT IS IT?**  
(a general understanding of what the model is trying to show or explain)
- HOW IT WORKS**  
(what rules the agents use to create the overall behavior of the model)
- HOW TO USE IT**  
(how to use the model, including a description of each of the items in the Interface tab)
- THINGS TO NOTICE**  
(suggested things for the user to notice while running the model)
- THINGS TO TRY**  
(suggested things for the user to try to do (move sliders, switches, etc.) with the model)
- EXTENDING THE MODEL**  
(suggested things to add or change in the Code tab to make the model more complicated, detailed, accurate, etc.)

A vertical scroll bar is visible on the right side of the main content area.

# Biblioteca de modelos



# Biblioteca de modelos

**Biblioteca de Modelos**

The screenshot shows a Mac OS X-style window titled "Biblioteca de Modelos". On the left is a sidebar with a tree view of model categories. The "Sample Models" category is expanded, showing sub-categories: Art, Biology, Chemistry & Physics, Computer Science, Earth Science, Games, Mathematics, Networks, Social Science, System Dynamics, Curricular Models, Code Examples, and HubNet Activities. The "Networks" item is selected and highlighted with a blue border. The main content area on the right is titled "About the Models Library". It contains five sections with descriptions: "Sample Models", "Unverified models", "Code Examples", "Curricular Models", "HubNet Activities", and "User Community Models".

**About the Models Library**

*Sample Models* are the most carefully checked models we have. They are examples of good coding and documentation practice.

*Unverified models* are also complete and functional, but are still in the process of being reviewed for content, accuracy, and quality of code.

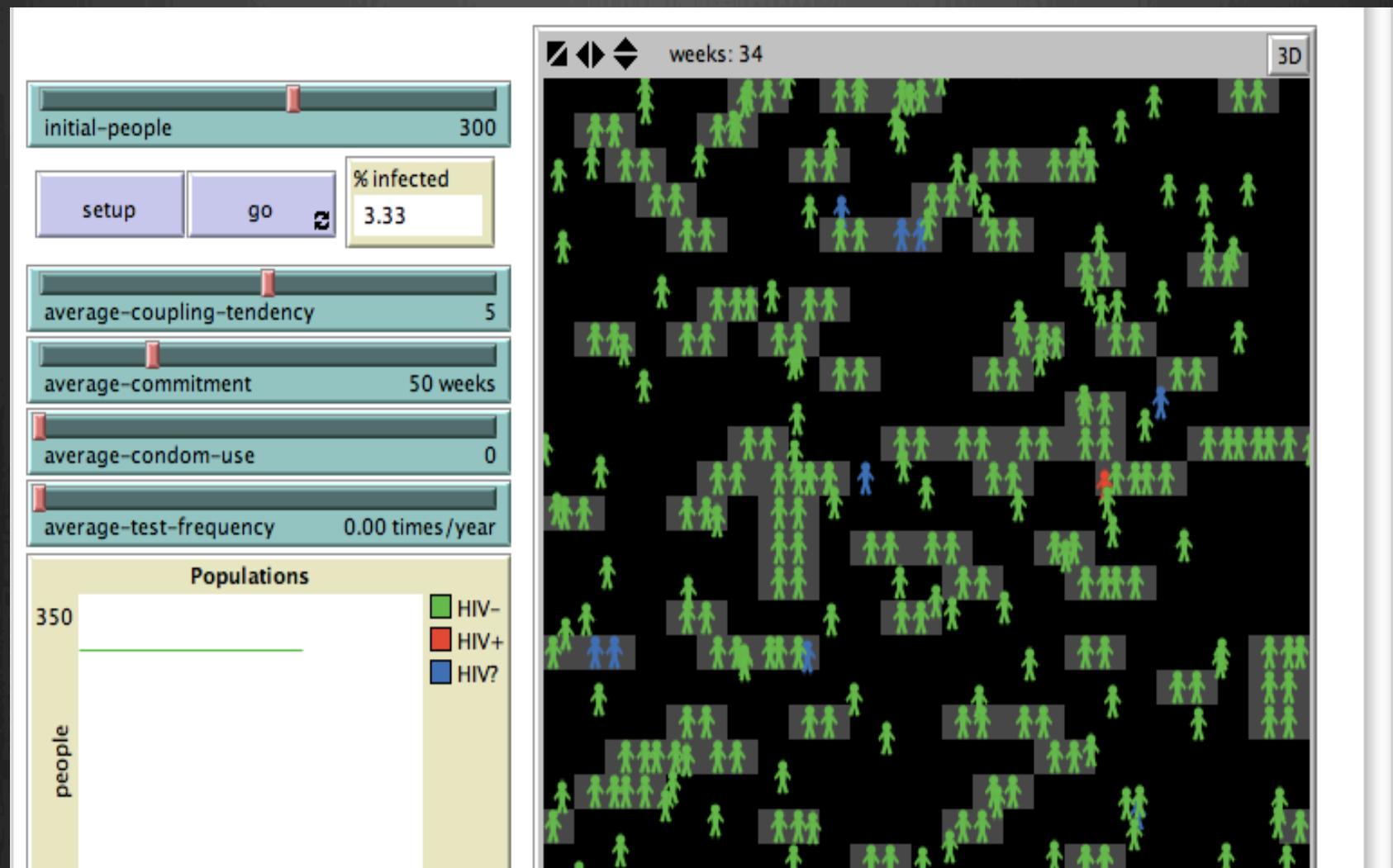
*Code Examples* are not complete models, but short illustrations of particular features and coding techniques. They are a supplement to the NetLogo User Manual.

*Curricular Models* are associated with curricula developed at the CCL. The models also appear, sometimes in different form, in Sample Models. For information on the curricula, see the CCL home page at <http://ccl.northwestern.edu>.

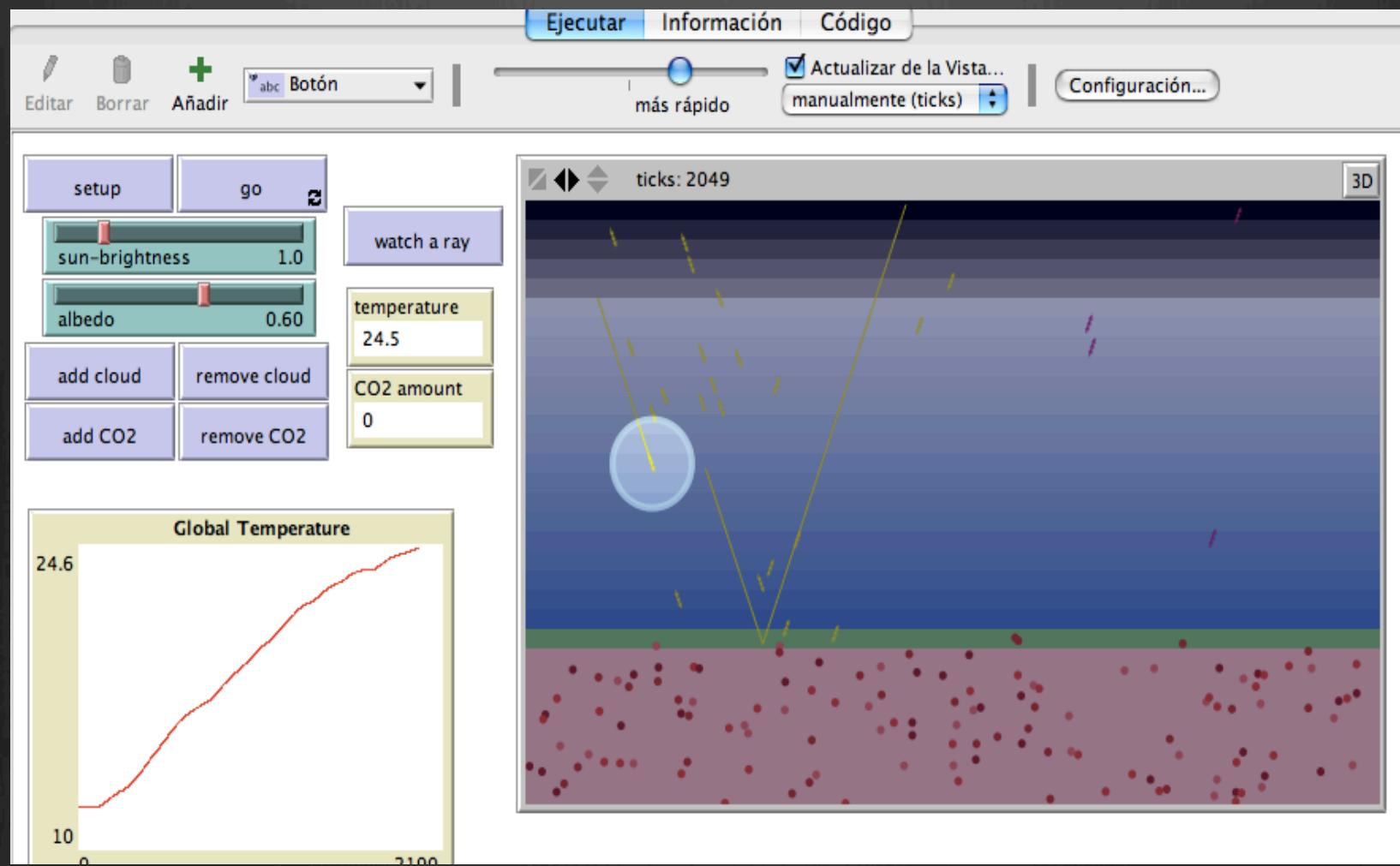
*HubNet Activities* are for use with our HubNet participatory simulation architecture.

*User Community Models* are models contributed from the user community to be shared with other NetLogo users. They are not included with NetLogo, but are available on the web by pressing the button below.

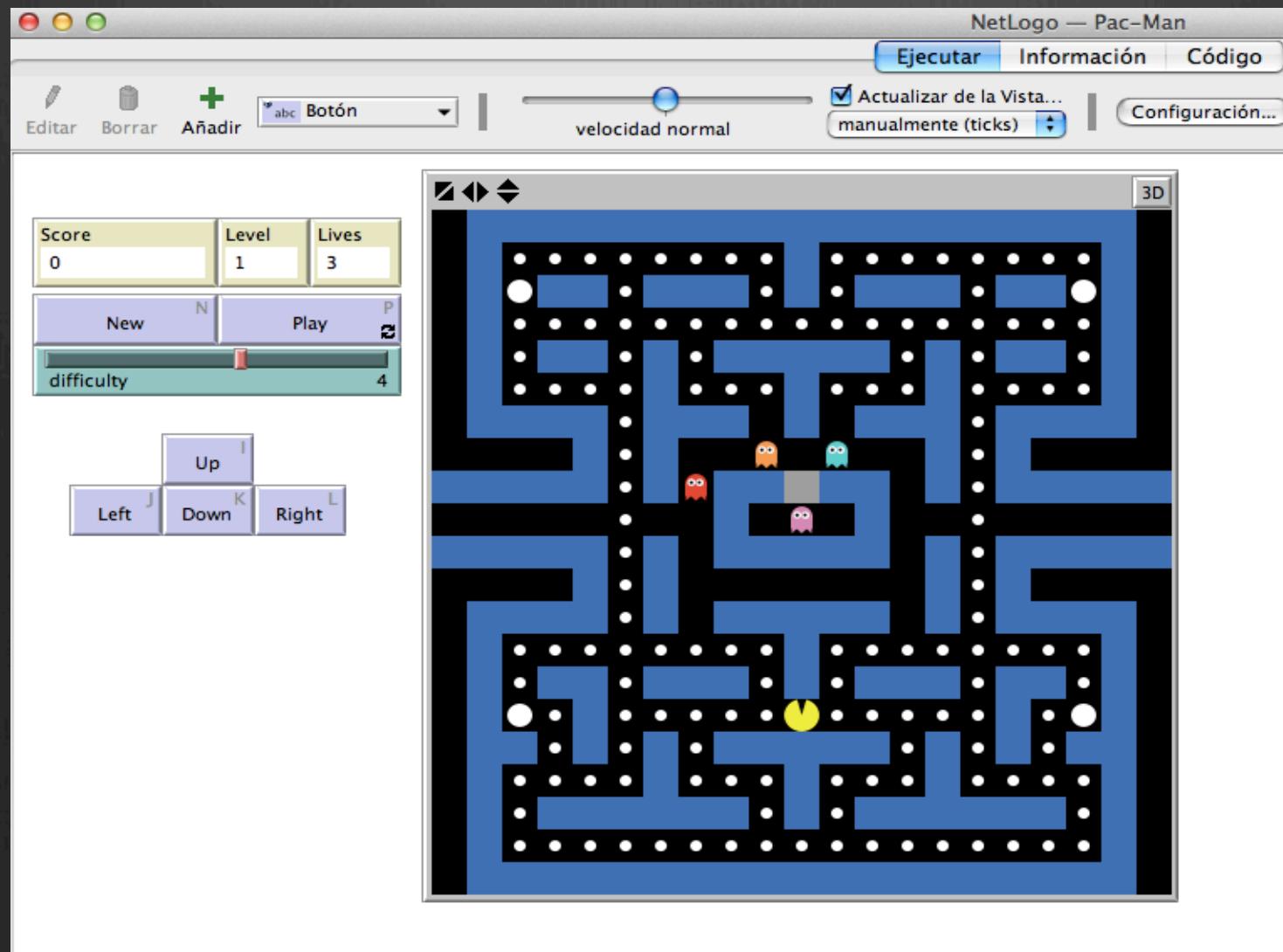
# Biblioteca de modelos



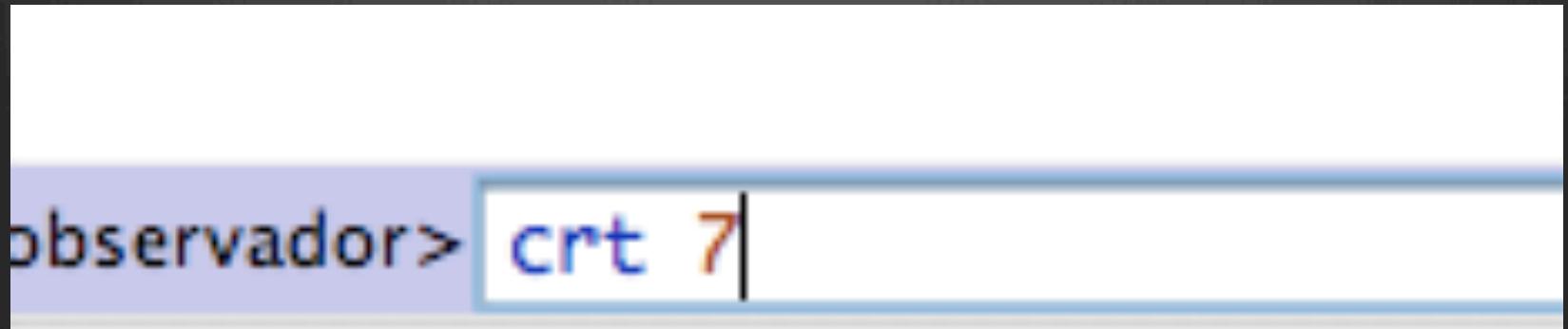
# Biblioteca de modelos



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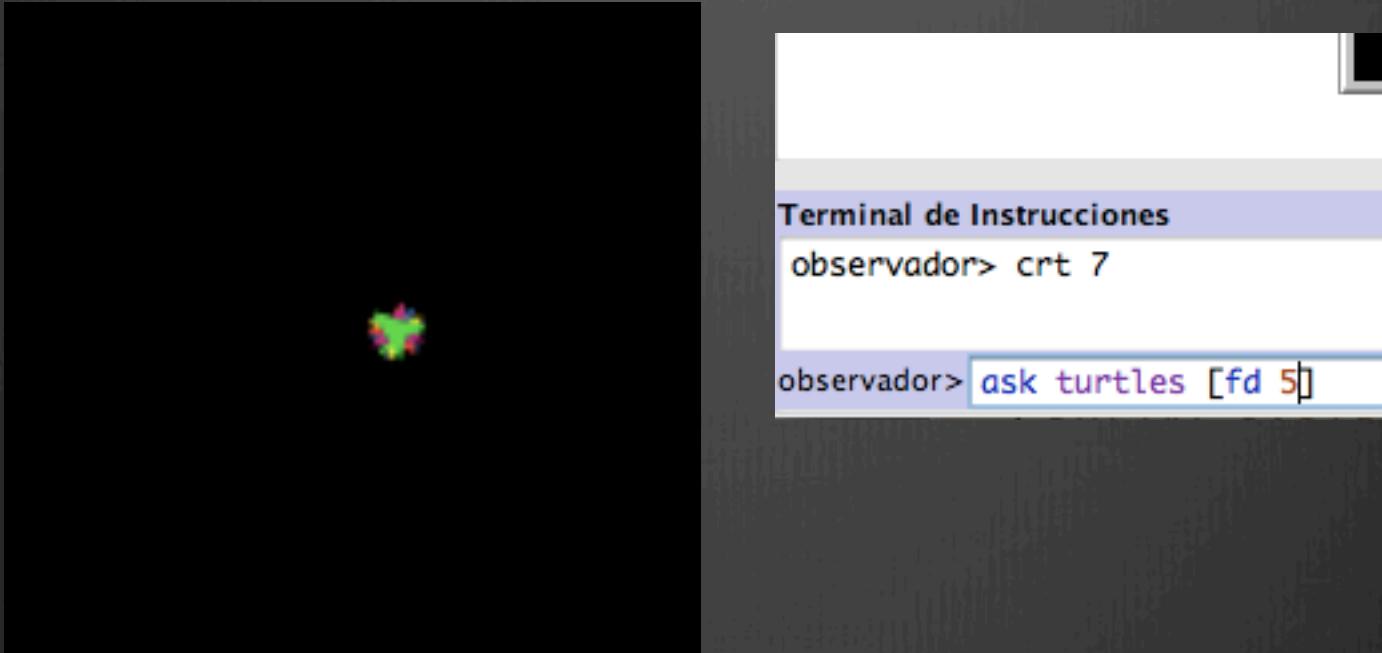


# Ventana de comandos



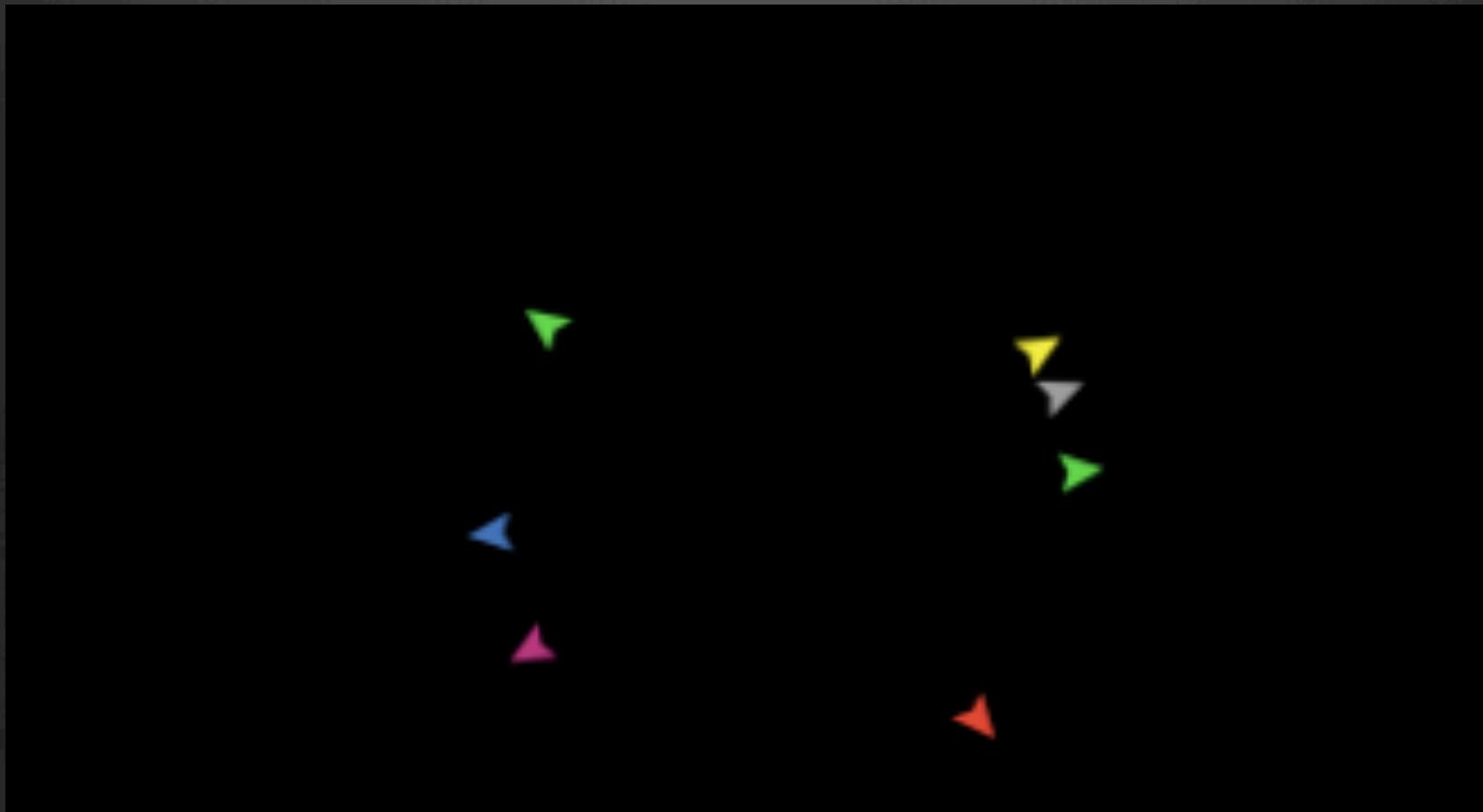
El comando “crt 7” crea 7 tortugas (create 7), en el centro de coordenadas

# Ventana de comandos



- “fd” corresponde a forward y el 5 indica el número de patches
- “ask turtles” engloba a todas las tortugas

# Ventana de comandos



# Bibliografía

- Manual NetLogo :
  - <https://sites.google.com/site/manualnetlogo/>
- Sitio Web:
  - <https://ccl.northwestern.edu/netlogo/>
- Wikipedia :
  - <http://en.wikipedia.org/wiki/NetLogo>