

# Revisión do SW por defecto

## Obxectivos

- Practicar no uso da Raspberry Pi sen necesidade de periféricos
- Revisar as posibilidades de Raspbian na instalación por defecto
- Suxerir algunhas novas aplicacións para desenvolvemento
- Valorizar Scratch como ferramenta de iniciación á programación 'para todas as idades'
- Revalidar o cinto branco-amarelo do NINJA do terminal

# Revisión do SW por defecto

## Contidos

- O entorno gráfico
- Aplicacións de desenvolvemento para Scratch e Python
- Algúns exemplos de proxectos SW con Scratch
- Instalación dun xestor de paquetes

# Revisión do SW por defecto

The screenshot displays a Raspberry Pi desktop environment accessed via TightVNC. The desktop features a blue background with a landscape image. A terminal window is open, showing the following network configuration commands and their outputs:

```
ifconfig
eth0: flags=4163<UP,BROADCAST,MULTICAST> mtu 1500
    inet 192.168.1.53 netmask 255.255.255.0 broadcast 192.168.1.255
    ether b8:27:eb:f8:ac:a6 txqueuelen 1000 (Ethernet)
    RX packets 116420 bytes 6595305 (6.2 MiB)
    RX errors 0 dropped 57 overruns 0 frame 0
    TX packets 446783 bytes 218795113 (208.6 MiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<LOOPBACK,UP,LOWER_UP> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    ether ::: txqueuelen 1000 (Local Loopback)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

wlan0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.1.53 netmask 255.255.255.0 broadcast 192.168.1.255
    inet6 fe80::d210:7537:f04a:1cc3 prefixlen 64 scopeid 0x20<link>
    ether b8:27:eb:f8:ac:a6 txqueuelen 1000 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

pi@raspberrypi:~$
```

A menu overlay is visible on the left side of the terminal window, listing various applications and utilities:

- Programación
  - Geany
  - Python 3 (IDLE)
  - Scratch
  - Scratch 2
  - Sense HAT Emulator
- Oficina
  - Sonic Pi
- Internet
- Xogos
- Accesorios
- Help
- Preferencias
- Run...
- Shutdown...

# Revisión do SW por defecto

- Raspbian é un SO completo, baseado en Debian.
- Dende o punto de vista da administración do sistema e do desenvolvemento de SW é idéntico a Ubuntu, Linux Mint, Triskel, etc.
- Ven preinstalado co SW necesario para empezar a usar inmediatamente:
  - Ofimáticas: Suite LibreOffice
  - Programación: Scratch, IDLE Python, etc
  - Internet: Navegador Chromium
  - Xogos Python e Minecraft
  - Accesorios do sistema

# Revisión do SW por defecto

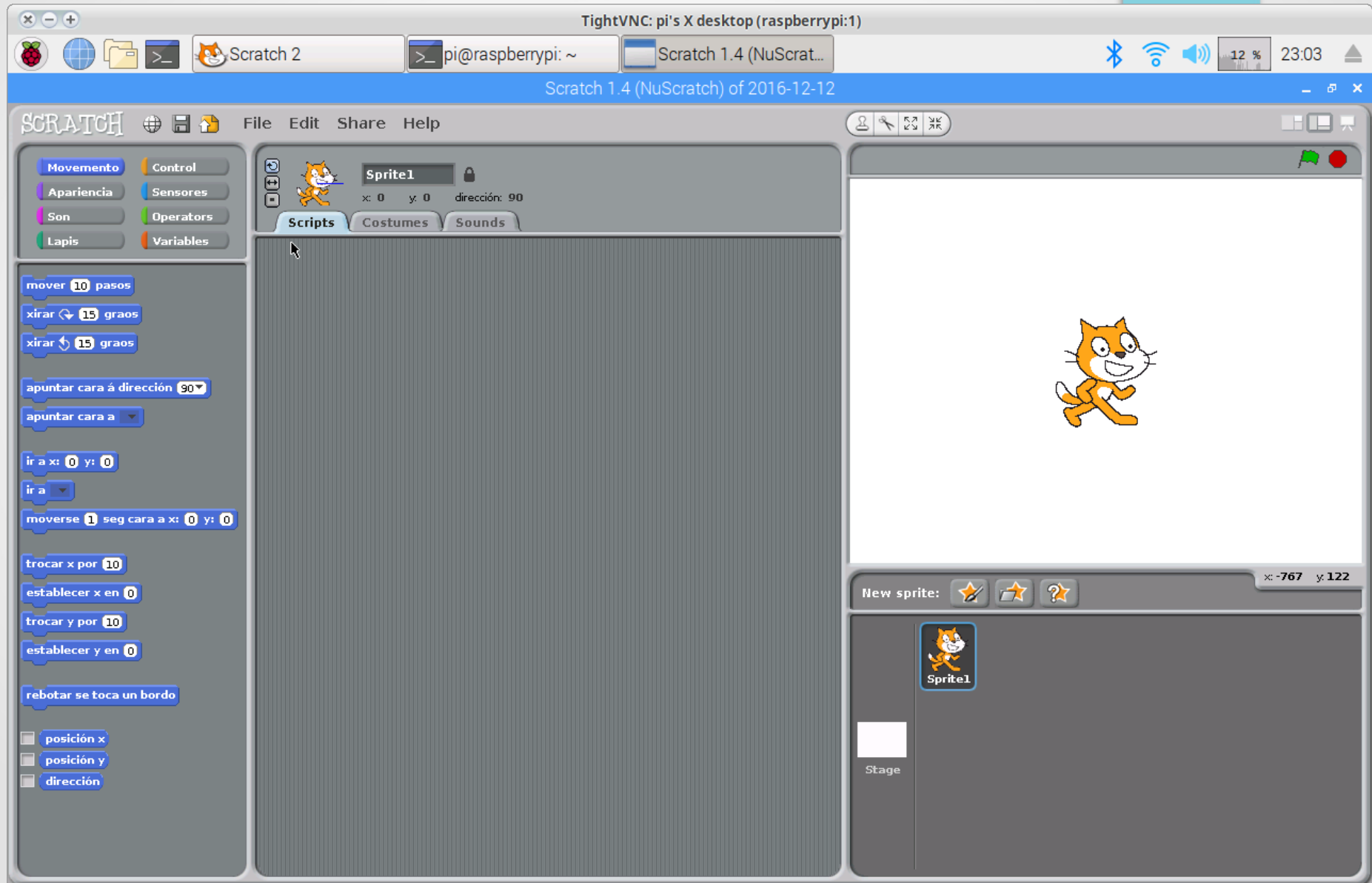
The image displays a Linux desktop environment with the application menu open. The menu is organized into several categories, each with a sub-menu:

- Programación** (Programming): Geany, Python 3 (IDLE), Scratch, Scratch 2, Sense HAT Emulator, Sonic Pi, Thonny Python IDE, Thonny (Simple Mode).
- Oficina** (Office): LibreOffice Base, LibreOffice Calc, LibreOffice Draw, LibreOffice Impress, LibreOffice Math.
- Internet** (Internet): (No specific applications listed in the sub-menu).
- Xogos** (Games): (No specific applications listed in the sub-menu).
- Accesorios** (Accessories): Calculator, Editor de texto, LXTerminal, PDF Viewer, SD Card Copier, Text Editor, Visor de imaxes, Xarchiver, Xestor de ficheiros, Xestor de tarefas.
- Help** (Help): (No specific applications listed in the sub-menu).
- Preferencias** (Preferences): (No specific applications listed in the sub-menu).
- Run...** (Run...): (No specific applications listed in the sub-menu).
- Shutdown...** (Shutdown...): (No specific applications listed in the sub-menu).

The background shows a terminal window with the following output:

```
wlan0: flags=4163<UP
```

# Revisión de SW por defecto - Scratch



# Revisión do SW por defecto - Scratch

The image shows a screenshot of the Scratch 2.0 web application running on a Raspberry Pi desktop environment. The desktop is titled "TightVNC: pi's X desktop (raspberrypi:1)". The Scratch interface includes a top menu bar with "Ficheiro" and "Editar", a toolbar with various icons, and a main workspace. The workspace contains a single sprite named "Cat1" (Scratch Cat) with a bounding box of x: 240, y: 120. The right sidebar shows the "Programas" (Scripts) category selected, with a script starting with "preguntar 'What's your name?' e aguarde a resposta" (ask for name and wait for response). The bottom left sidebar shows the "Figurass" (Sprites) area with "Cat1" selected. The bottom right corner of the Scratch interface has a search icon and a zoom icon.

# Revisión do SW por defecto - Scratch

The screenshot displays the Scratch 2.0 editor interface. The main stage shows a blue oval track with two cars, 'coche' and 'coche2', positioned at different points. A 'Tiempo' (Time) variable is set to 0. The 'Scripts' tab is active, showing the following code blocks:

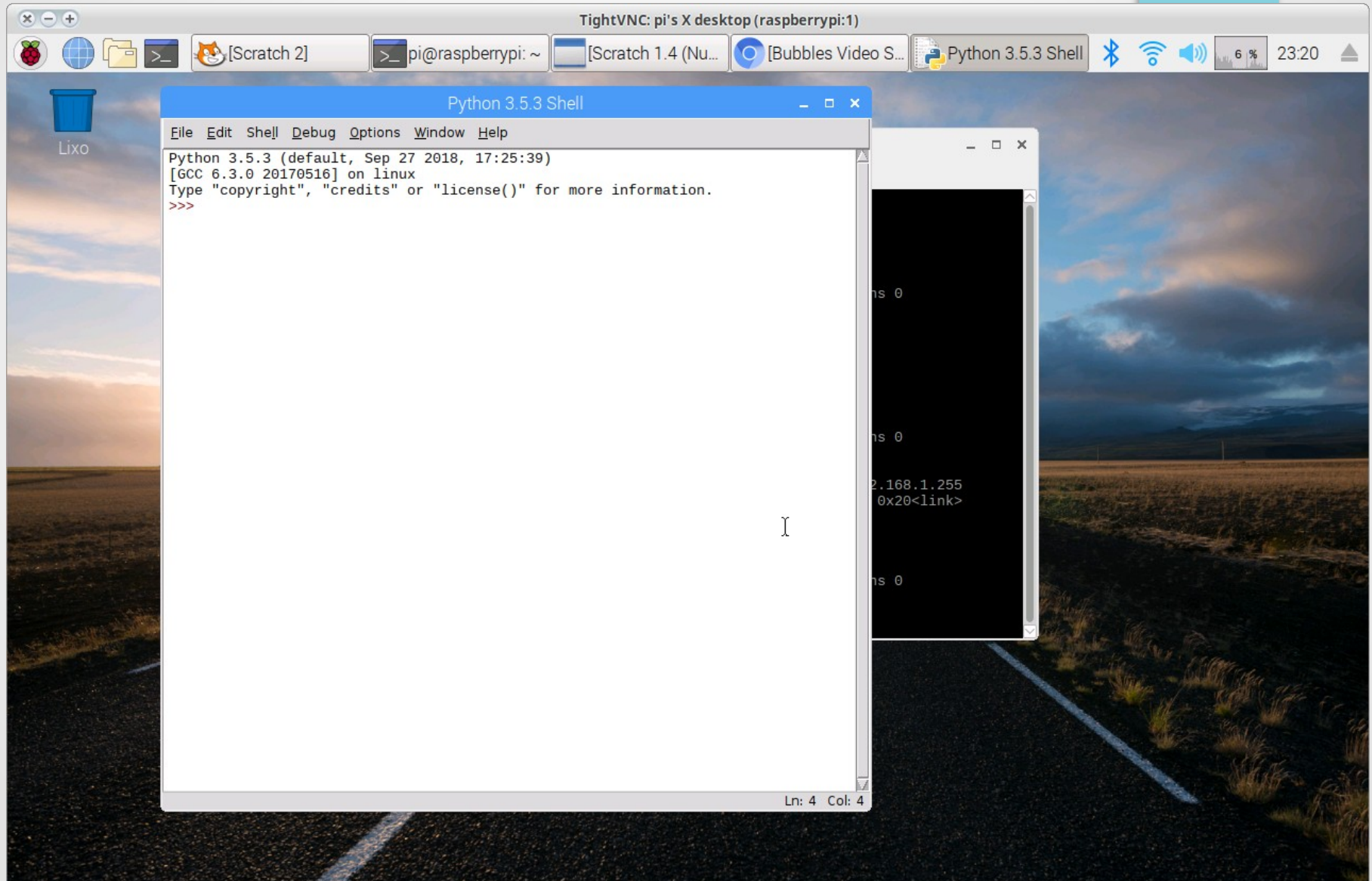
- when green flag clicked**:
  - set v to 4
  - set vuelta to 0
  - point in direction 180
  - go to x: 206 y: 37
- when space key pressed** (labeled 'Corpo principal. Encárgase de...'):
  - forever loop:
    - Mover (defined block)
    - Xirar dereita
    - Xirar esquerda
    - Acelerar
    - Reducir
    - Deter
- when space key pressed** (labeled 'Conta voltas, compr...'):
  - forever loop:
    - Comproba voltas

Additional code blocks visible in the background include:

- define Mover**:
  - if not color is touching ? then:
    - move v steps
- define Xirar dereita**:
  - if color is touching ? then:
    - turn 10 degrees
- define Acelerar**:
  - if color is touching ? then:
    - set v to 12

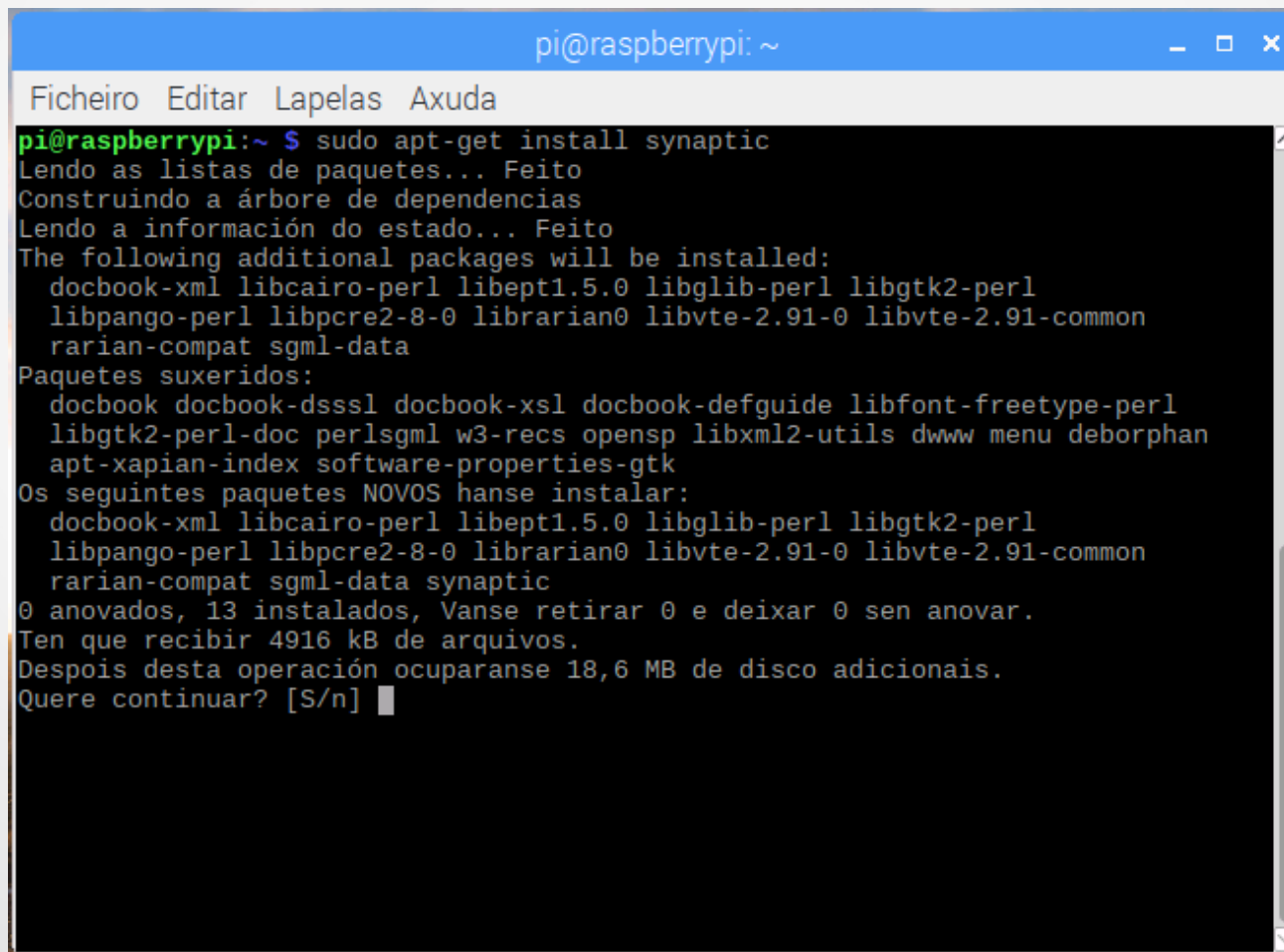
The 'Motion' block palette is visible on the left, showing options like 'move 10 steps', 'turn 15 degrees', 'point in direction 90', 'point towards mouse-pointer', 'go to x: -175 y: -124', 'glide 1 secs to x: -175 y: -124', 'change x by 10', 'set x to 0', 'change y by 10', 'set y to 0', and 'if on edge, bounce'.

# Revisión do SW por defecto - Python



# Podemos instalar máis SW?

- Xa temos instalado algúns programas con apt-get
- Tamén podemos instalar un entorno gráfico para xestionar os paquetes



```
pi@raspberrypi: ~  
Ficheiro Editar Lapelas Axuda  
pi@raspberrypi:~ $ sudo apt-get install synaptic  
Lendo as listas de paquetes... Feito  
Construíndo a árbore de dependencias  
Lendo a información do estado... Feito  
The following additional packages will be installed:  
  docbook-xml libcairo-perl libept1.5.0 libglib-perl libgtk2-perl  
  libpango-perl libpcre2-8-0 librarian0 libvte-2.91-0 libvte-2.91-common  
  rarian-compat sgml-data  
Paquetes suxeridos:  
  docbook docbook-dsssl docbook-xsl docbook-defguide libfont-freetype-perl  
  libgtk2-perl-doc perlsgml w3-recs opensp libxml2-utils dwww menu deborphan  
  apt-xapian-index software-properties-gtk  
Os seguintes paquetes NOVOS hanse instalar:  
  docbook-xml libcairo-perl libept1.5.0 libglib-perl libgtk2-perl  
  libpango-perl libpcre2-8-0 librarian0 libvte-2.91-0 libvte-2.91-common  
  rarian-compat sgml-data synaptic  
0 anovados, 13 instalados, Vanse retirar 0 e deixar 0 sen anovar.  
Ten que recibir 4916 kB de arquivos.  
Despois desta operación ocuparanse 18,6 MB de disco adicionais.  
Quere continuar? [S/n]
```

# Podemos instalar máis SW?

The image shows a Raspberry Pi desktop environment accessed via TightVNC. The desktop background is a landscape with a road. A terminal window is open, displaying the output of a package installation process:

```
pi@raspberrypi: ~  
Ficheiro  Editar  Lapelas  Axuda  
Unpacking librarian0 (0.8.1-6) ...  
Selecting previously unselected package rarian-compat.  
Preparing to unpack ../12-rarian-compat_0.8.1-6_armhf.deb ...  
Unpacking rarian-compat (0.8.1-6) ...  
A configurar libglib-perl (3:1.324-1) ...  
A configurar libcairo-perl (1.106-1+b2) ...  
Processing triggers for mime-support (3.60) ...  
Processing triggers for desktop-file-utils (0.23-1) ...  
A configurar librarian0 (0.8.1-6) ...  
sgml-base (1.29) ...  
:armhf (1.1+nmu3+b1) ...  
-common (0.46.1-1) ...  
libc-bin (2.24-11+deb9u3) ...  
2.0.10) ...  
man-db (2.7.6.1-2) ...  
gnome-menus (3.13.3-9) ...  
0:armhf (10.22-3) ...  
rl (1.227-1+b1) ...  
hicolor-icon-theme (0.15-1) ...  
l (2:1.2499-1) ...  
-0:armhf (0.46.1-1) ...  
.84.2+rpil) ...  
sgml-base (1.29) ...  
(4.5-8) ...  
sgml-base (1.29) ...  
at (0.8.1-6) ...  
libc-bin (2.24-11+deb9u3) ...
```

On the left, the application menu is open, showing categories like 'Programación', 'Oficina', 'Internet', 'Xogos', 'Accesorios', 'Help', 'Preferencias', 'Run...', and 'Shutdown...'. The 'Preferencias' menu is expanded, showing options such as 'Add / Remove Software', 'Appearance Settings', 'Audio Device Settings', 'Main Menu Editor', 'Raspberry Pi Configuration', 'Recommended Software', 'Teclado e rato', and 'Xestor de paquetes Synaptic'. A tooltip for 'Xestor de paquetes Synaptic' is visible, stating: 'Instalar, retirar e anovar os paquetes de software'.

# Podemos instalar máis SW?

pi's X desktop (raspberrypi:1) (1) - Remote Viewer

File View Send key Help

pi@raspberrypi: ~ Xestor de paquetes S...

Xestor de paquetes Synaptic

Ficheiro Editar Paquete Configuración Axuda

Recargar Marcar todas as anovacións Aplicar Propiedades Buscar

Nome	Estado	Nome	Versión	Descrición
Administración do sistema	<input type="checkbox"/>	3depict	0.0.19-1	visualisation and analysis for single valued point data
Administración do sistema	<input type="checkbox"/>	abacas	1.3.1-3	Algorithm Based Automatic Contiguation of Assembled Sequences
Administración do sistema	<input type="checkbox"/>	abinit	8.0.8-1	package for electronic structure calculations
Bases de datos	<input type="checkbox"/>	abyss	2.0.2-2	de novo, parallel, sequence assembler for short reads
Bibliotecas	<input type="checkbox"/>	acedb-other	4.9.39+dfsg.02-1	retrieval of DNA or protein sequences
Bibliotecas (contribucións)	<input type="checkbox"/>	acedb-other-belvu	4.9.39+dfsg.02-1	multiple sequence alignment editor
Bibliotecas (non libres)	<input type="checkbox"/>	acedb-other-dotter	4.9.39+dfsg.02-1	visualisation of sequence similarity
Bibliotecas - Antigas	<input type="checkbox"/>	aces3	3.0.8-5.1+rpi1	Advanced Concepts in Electronic Structure III
Bibliotecas - Antigas (non li)	<input type="checkbox"/>	aces3-data	3.0.8-5.1+rpi1	Advanced Concepts in Electronic Structure III
Bibliotecas - Desenvolvemento	<input type="checkbox"/>	achilles	2-8.2	An artificial life and evolution simulator
Bibliotecas - Desenvolvemento	<input type="checkbox"/>	adapterremoval	2.2.0-1	rapid adapter trimming, identification, and read merging of gene sequences
Ciencia	<input type="checkbox"/>	adapterremoval-examples	2.2.0-1	rapid adapter trimming, identification, and read merging (example data)
Ciencia (contribucións)	<input type="checkbox"/>	adun-core	0.81-9+b1	Molecular Simulator
Seccións	<input type="checkbox"/>	adun.app	0.81-9+b1	Molecular Simulator for GNUstep (GUI)
Estado	<input type="checkbox"/>	aegean	0.15.2+dfsg-1	integrated genome analysis toolkit
Orixe	<input type="checkbox"/>	aeskulap	0.2.2b1+git20161	medical image viewer and DICOM network client
Filtros personalizados	<input type="checkbox"/>	aevol	4.4-1	digital genetics model to run Evolution Experiments in silico
Resultados da busca	<input type="checkbox"/>	agbermann	1.1.2-1	Sleep-research experiment manager
Arquitectura	Non hai ningún paquete seleccionado.			

1211 paquetes listados, 1347 instalados, 0 estragados. 0 para instalar/anovar, 0 para retirar