

Install and Configure wxWidgets on MacOS X and Ubuntu

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Introduction

wxWidgets is a C++ library that allows you to develop and deploy interactive GUI-based applications (<https://www.wxwidgets.org/> on different platforms – Windows, Mac, and Linux – and therefore you can also build your applications with little or no code change on those platforms.

In this tutorial, you will download, configure, build, and install wxWidgets on either MacOS X or Ubuntu, a distribution of the Linux operation system.

If you are on Windows 10, you should install Ubuntu. Read the tutorials “Install Ubuntu on Windows 10 and VirtualBox” (<http://www.cs.sjsu.edu/~mak/tutorials/InstallUbuntu.pdf>) and “Configure Ubuntu for Software Development” (<http://www.cs.sjsu.edu/~mak/tutorials/ConfigureUbuntu.pdf>).

Using wxWidgets, you can develop C++ desktop applications that display windows and interactive controls such as buttons, menus, text boxes, etc. (Figure 1).

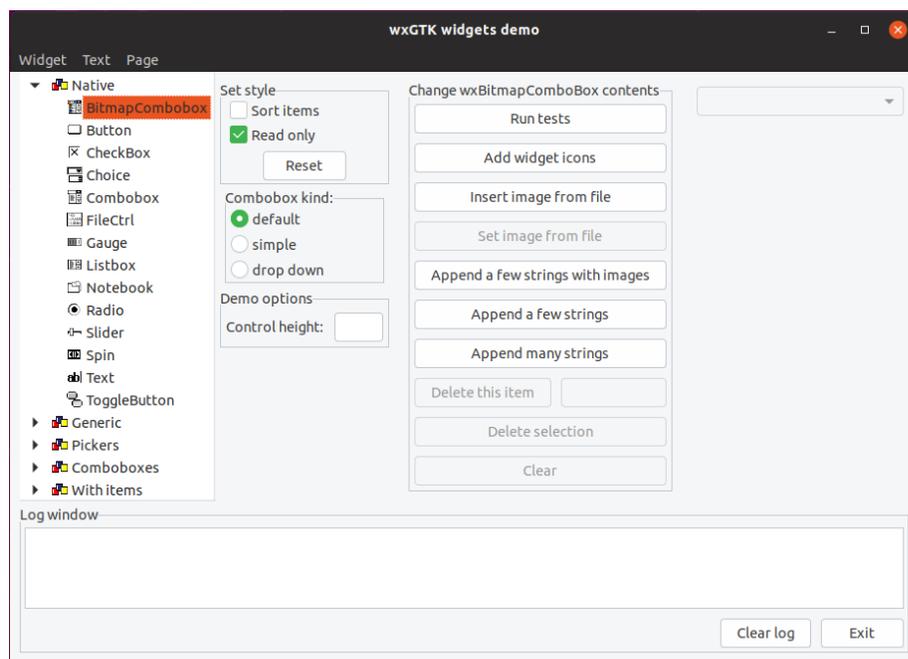


Figure 1. Sample program **widgets**.

Download wxWidgets

Go to <https://www.wxwidgets.org/downloads/> to download the latest stable release (currently 3.0.4). Click on the download link *Source for Linux, macOS, etc.* to download the source files of the toolkit. To build and deploy the wxWidgets library, you will have to configure, compile, link, and install it. The download includes shell scripts that will run in a terminal to perform these operations.

Unzip the downloaded zip file in your home directory to create a folder named **wxWidgets-version**, such as **wxWidgets-3.0.4**.

If you are going to build on MacOS X, read the next section. If you are going to build on Ubuntu, skip to the section “Build and install wxWidgets on Ubuntu”.

For more detailed instructions for MacOS X, see **docs/osx/install.txt**. For Ubuntu, see **docs/gtk/install.txt**.

Build and install wxWidgets on MacOS X

In a terminal window, **cd** to your **wxWidgets-version** directory. Then enter the following commands:

```
mkdir build-cocoa-debug
cd build-cocoa-debug
```

Configure and build the wxWidgets libraries (**make** takes a long time):

```
../configure --enable-debug --with-macosx-version-min=10.9
make
```

Enter the following commands to install the wxWidgets header files in the standard directory **/usr/local/include** and the library in the standard directory **/usr/local/lib**:

```
sudo su
make install
exit
```

Skip to the section “Install the wxWidgets header files and library”.

Build and install wxWidgets on Ubuntu

The GTK development package

Build wxWidgets on top of the GIMP Toolkit (GTK) libraries which are already installed in Ubuntu. GTK is a multi-platform toolkit for creating graphical user interfaces. See <https://www.gtk.org/>

First download and install the GTK development package. In the Ubuntu terminal, enter the following command on the command line:

```
sudo apt install libgtk-3-dev
```

Build and install wxWidgets

Enter your wxWidgets directory, create a new subdirectory `gtk-build`, and `cd` to it:

```
mkdir gtk-build
cd gtk-build
```

Configure and build the wxWidgets libraries (`make` takes a long time):

```
../configure --with-gtk
make
```

Enter the following commands to install the wxWidgets header files in the standard directory `/usr/local/include` and the library in the standard directory `/usr/local/lib`:

```
sudo su
make install
ldconfig
exit
```

Build the sample and demo programs

Build all the sample programs (takes a long time):

```
cd samples
make
```

Build all the demo programs:

```
cd ../demos
make
```

Run the sample and demo programs

You should now be able to run the `minimal` sample program (Figure 3):

```
cd ../samples/minimal
./minimal
```

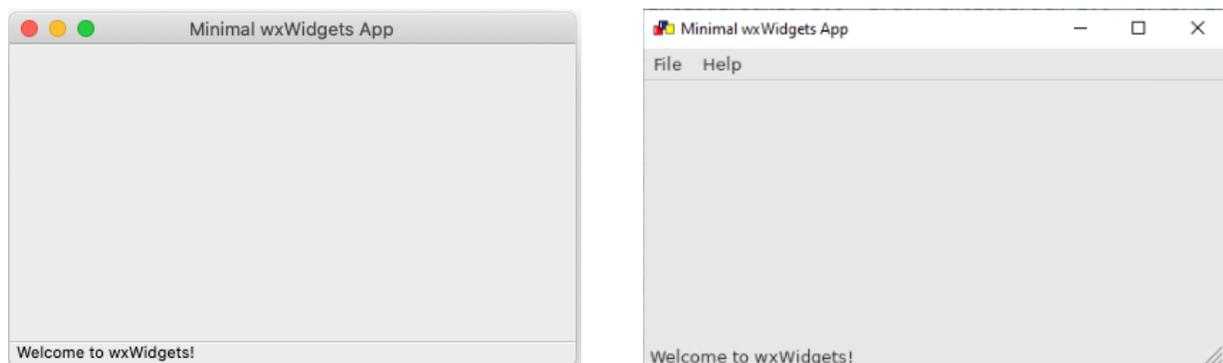


Figure 3. Sample program `minimal` on MacOS X and on Ubuntu.

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Sample program `widgets` demonstrates all the interactive control (Figure 4):

```
cd ../widgets
./widgets
```

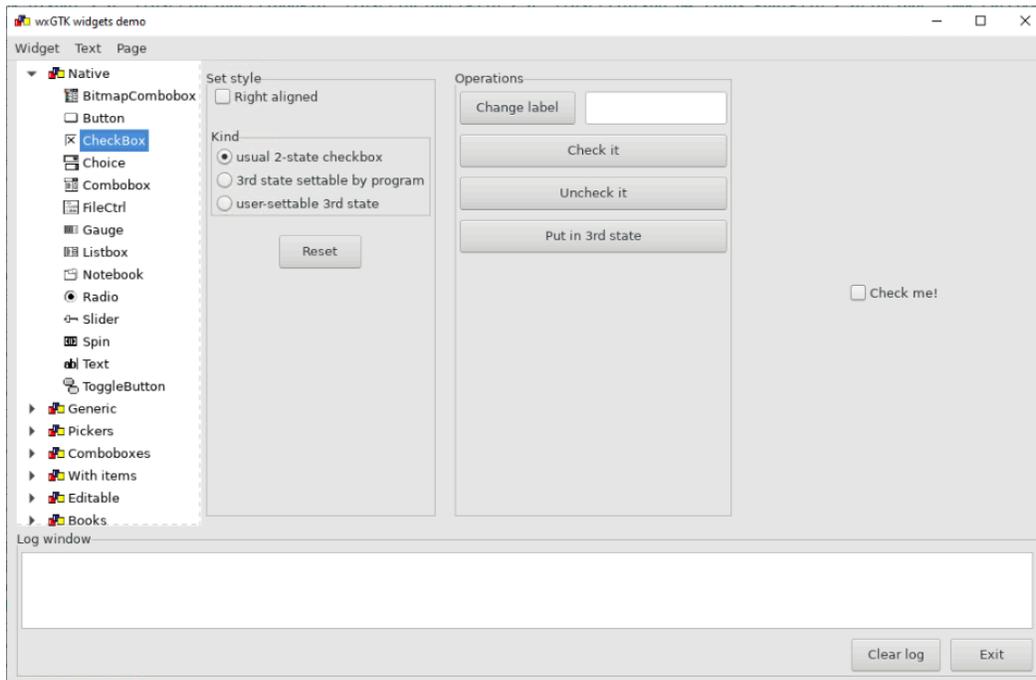
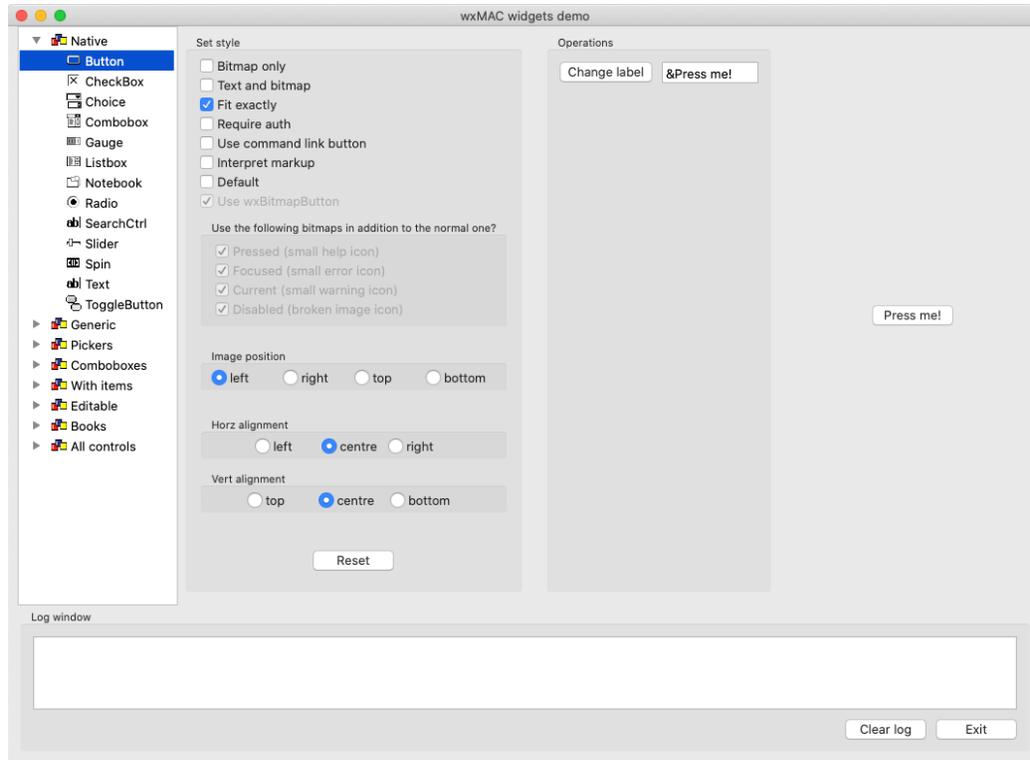


Figure 4. Sample program `widgets` on MacOS X and on Ubuntu.

Demo program **forty** (Figure 5):

```
cd ../../demos/forty
./forty
```

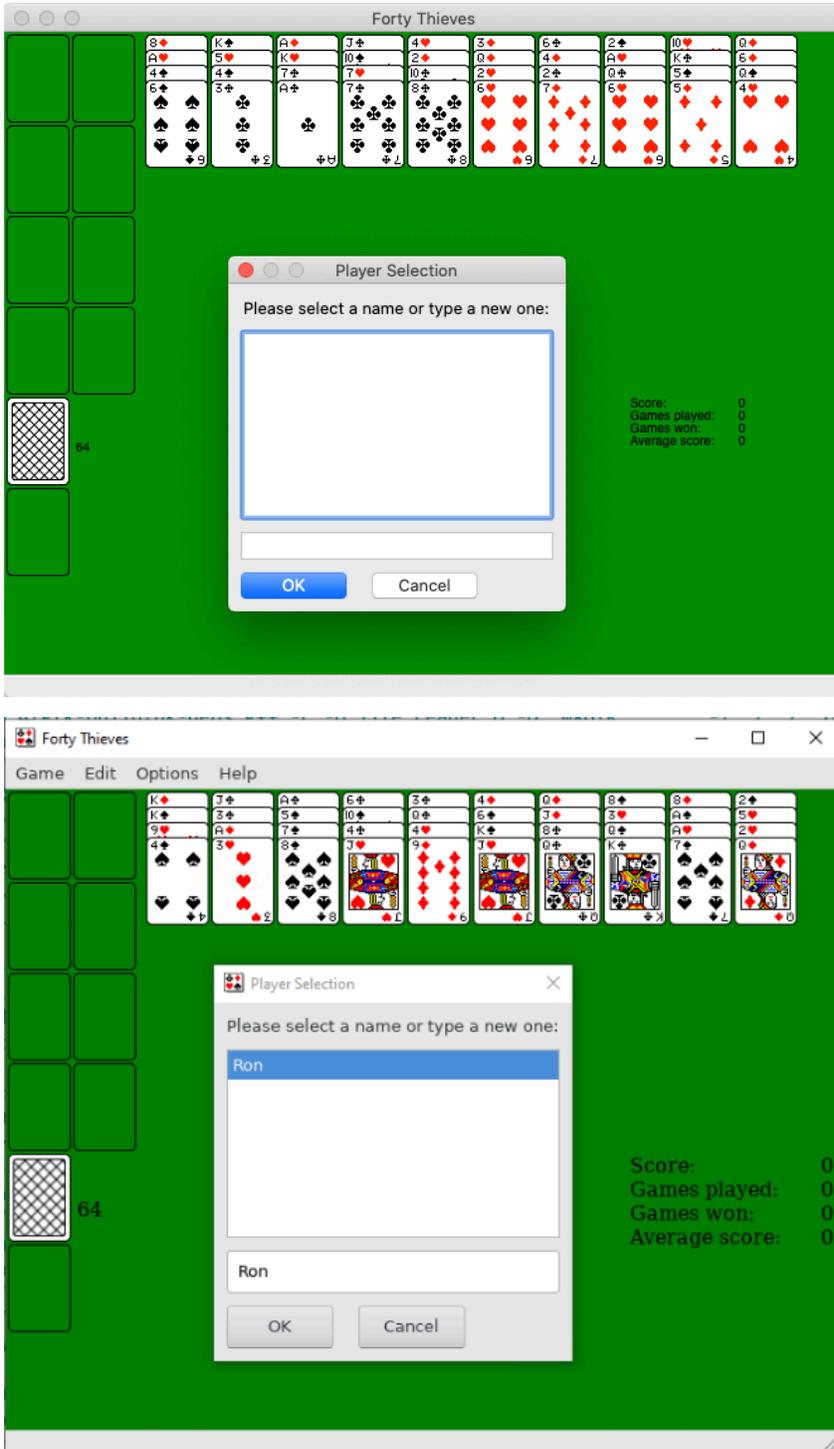


Figure 5. Demo program **forty** on MacOS X and on Ubuntu.