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- [How to access S60 resources in WRT or Flash Lite, using...](#)
- [How to use touch events with PyS60](#)
- [Customized listbox on canvas with images support](#)

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This page presents all the articles in the Forum Nokia Wiki that include the category **Python**. If new to this technology, besides some basic information presented here, check also the [Python for S60 Technology Landing Page](#) in Forum Nokia.

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- [How to read GPS data in Python for S60](#)
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Overview

Python for S60 is Nokia's port of the [Python](#) language to the [S60](#) smartphone platform. In addition to the standard features of the Python language, PyS60 provides access to many of the smartphone's functions, such as camera, contacts, calendar, audio recording and playing, TCP/IP and Bluetooth communications and simple telephony.

Other than Python for S60 there are three more or less advanced Python versions for UIQ:

- [Python for UIQ](#)

A very old version for UIQ based on Python 2.3.3 The console version already builds for other devices, including Series 90, Series 80 and S60 first Edition.

- [Python for UIQ 2.1 and 3.0](#)

This is Python for UIQ 2.1 and UIQ 3 v0.1 (hereafter PyUIQ). This preliminary port is based on Python for S60 (hereafter PyS60) port created by Nokia which is based on Python 2.2.2.

- [Python for UIQ](#)

It's Python over PersonalJava.

Python for S60 is [open source](#), under Apache 2 and Python licenses. You can download the source for the latest release from [Maemo Garage](#). Moreover, the previous stable release can be downloaded from [Sourceforge](#)

Latest News

5 August 2009: [Python for S60 1.9.7](#) has been officially released.

New Features Added in PyS60 1.9.7 are:

- Touch support is added for GLCanvas UI Control. Directional pad is displayed by default on touch enabled devices. A sample application - gles_touch_demo.py is added to ScriptShell which demonstrates the functionality.
- Two new APIs are added to canvas - begin_redraw and end_redraw. These can be used to instruct the window server to enable redraw drawing on the canvas UI control.
- The multi-selection listbox has been modified such that the dialog for the option 'checkmark' now has 'Options' and 'Back' as its left and right softkeys respectively. The 'Options' has Mark/Unmark entry

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that can be used to select and de-select respectively. The 'Back' softkey returns the current state of the listbox based on the selected items.

- 4-way directional pad support in landscape mode
- Different flavors of Scriptshell application can coexist on the device.
- PyS60 document is available online on [maemo.garage\[1\]](#)
- All the developer modules are now part of runtime package. This means that in future, if there are any fixes to these modules then, those fixes will be delivered through runtime package alone.
- Many defects are fixed with this release. Refer release notes for more details.

3 December 2008: [Python for S60 1.4.5](#) has been officially released.

New Features Added in PyS60 1.4.5 are:

- Added the possibility to run Python code in threads that weren't started by Python itself, by adding the functions `InitializeForeignThread()` and `FinalizeForeignThread()` to the `CSPyInterpreter` class. For details see the section "Python/C API Extensions" of the API Reference.
- Added timeout support to `globalui` module.
- The positioning module has been made safe to use from several threads.
- Support for the "description" field has been added to the calendar module.

3 June 2008: Forum Nokia Publishes an [eLearning module for Python for S60](#)

Installation

See [Installing PyS60](#). Which package to get, how to push scripts to the phone, using the emulator, using the Bluetooth console etc.

Applications

See [Python S60 applications](#) and [Python S60 applications](#). Also, grabbing the package source is useful, as there are some interesting sample applications embedded in the source tree. If you are a novice trying to figure out how to write your first program on a mobile phone then click "[novice how to](#)".

Creating Standalone Applications

Python has all the advantages of an interpreted language, but you can create standalone applications for the S60 platform. Here are some links.

- [Guide for creating a standalone application in 2rd edition](#)
- [Creating standalone application in 3rd edition](#)
- [More links to creating a standalone app](#)

Documentation

See [Python S60 documentation](#).

Extension modules

Python for S60 supports most of the standard Python 2.2 (or 2.5.1 in the case PyS60 1.9.0) modules. These modules and some others (changed to adapt them to Python for S60) are written in pure Python code.

For a list of adapted python modules that are available see: [PyS60 Python modules](#).

Python for S60 supports the [Python/C API](#) so you can create your own dynamically loadable extension modules (.PYD's) to extend the functionality of the interpreter. See [How to create PyS60 extension modules](#).

A list of native extension modules is available [here](#):

Compiling PyS60

So you want to "roll your own" PyS60 interpreter from source? Check out [Compiling PyS60](#).

Getting help

The [Python for S60 discussion board at Forum Nokia](#) is THE place for chatting about [Python for S60](#) related matters. The archives of the board may already contain the answer you are looking for. Try the search function before asking and you may save lots of time.

For more informal discussions, try the [Python S60 IRC channel](#).

Tutorials & Books

Tutorials

- Python for the S60 platform [eLearning](#).

Learn about Python, the open source programming language optimized for rapid application prototyping. It is an object-oriented scripting language that is easy to learn and use and supported on many platforms. This module gives students an idea of where and how the language can be used, and show how to write Python programs that run on the S60 platform. The module assumes some familiarity with object-oriented programming languages.

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- [Python Training Course](#)

A package containing a handy Python Workbook that describes the most important features in a simple yet complete way and sample scripts.

- To get started with Python, read the Python 2.2.2 (PyS60 core) [tutorial and library reference](#)
- Visit [Croozeus.com](#) for a large selection of guides and code examples that allow both beginners and experts to take advantage of the power of PyS60. Also look for [Pys60 Talks](#) and [Pys60 Featured Applications](#) sections on the site. Read the [PyS60 Community Blog](#) to know the latest happenings in the world of [PyS60](#).
- To Develop rapid mobile applications using PyS60 visit [mobapps](#) which contains some good [code](#) examples and you can get a good knowledge of [syntax](#) used in python.
- This "[easy to learn](#)" [tutorial by mobilenin](#) gives you a smooth start into learning to program in PyS60 - even without any prior knowledge of Python or S60.
- A description with examples of the most basic Python and PyS60 features, for beginners: [Basic Python Elements](#)

Books

- "[Dive into Python](#)" is an excellent **free** book about Python programming. Available in different languages (English, Italian, French, Spanish, Chinese, Korean, Russian) and formats, it also includes source codes!
- "[A Byte of Python](#)" a novice in python needs to check go through basics, available in this book.
- [Mobile Python: Rapid prototyping of applications on the mobile platform](#)

- [Python Pocket Reference](#) is very useful, when you know what to do, but can't quite recall how to do it.

Code Examples for Python

- [PyS60 Google Maps API](#)
- [How to use logs](#)
- [How to use fonts in Python](#)
- [Dump file system](#)
- [How to connect Mobile to PC](#)
- [Working database example for e32db in Python PyS60 **NEW**](#)
- [How to close an active GPRS Connection](#)
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- [How to use calendar](#)
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- [Axyz module example](#)
- [How to display transparent image on canvas](#)
- [A simple camera application using the view finder](#)
- [Touch Typing Tutor](#)
- [Menu inside a menu](#)
- [How to switch profiles](#)
- [Sms Timer - small app using Pys60](#)
- [How to take a photo](#)
- [How to do virtual arrow keys on Touch UI](#)
- [How to unpack .sis file](#)
- [How to use icon in listbox](#)
- [How to use Text in Python for S60](#)
- [How to use easily font in text](#)
- [How to use your phone as a panic button](#)
- [How to develop a Geo-scheduler application - Part 3](#)
- [How to develop a Geo-scheduler application - Part 2](#)
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- [Getting started with game programming on pys60](#)
- [How to use PieSlice - II](#)
- [Translate with babelfish](#)
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- [How to make Random Rectangle in Python for S60- Part 2](#)
- [How to make Random Rectangle in Python for S60- Part 1](#)
- [How to get the lat-long using an external GPS in Python for S60](#)
- [How to use layout in Python for S60](#)
- [How to change screen size in Python for S60](#)
- [How to make time limited calls](#)
- [Getting routs from google maps](#)
- [Timelimited2.jpg](#)
- [Timelimited1.jpg](#)
- [Search in contacts](#)
- [Textured-mapped font for OpenGL ES \(Python\)](#)
- [Simple deserializer for Python](#)
- [Send files to phone using Lightblue extension](#)
- [Password protected inbox in pys60](#)
- [How to use blit method of drawable objects](#)
- [Localization Example for PyS60](#)
- [How to use decorators in PyS60](#)
- [How to display information on the navigation pane](#)
- [How to use pycamera](#)
- [How to create and extract archives](#)
- [How to handle user inactivity](#)
- [How to use the camera viewfinder](#)
- [How to take a screenshot](#)
- [ServerPython.zip](#)
- [A simple random rectangle demo](#)
- [How to send AT commands and Dial with Python and Bluetooth](#)
- [How to use masks](#)
- [How to calculate a second degree equation](#)
- [Inbox Sender](#)
- [How to scan Bluetooth devices for supported profiles](#)
- [Getting Started with Blogging from Pys60 through xmlrpclib](#)

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- [How to get installation drive/path](#)
- [How to edit an image](#)
- [How to handle file metadata](#)
- [How to use tabs](#)
- [How to open a file with the designated application](#)
- [How to change screen orientation](#)
- [Text to speech in Python](#)
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- [How to record a sound](#)
- [Handling access points in PyS60](#)
- [Dynamic Menus in PyS60](#)
- [How to compare time](#)
- [How to use contact database](#)
- [How to get number using contact id](#)
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- [How to use touch events with PyS60](#)
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- [How to format time](#)
- [How to read GPS data in Python for S60](#)
- [How to add a submenu](#)
- [How to detect SMS in Outbox](#)
- [How to embed Python in Symbian C++](#)
- [A simple class to implement a progressbar in Python](#)
- [Progress bar on S60 5th Edition](#)
- [How to create a ruler using camera and accelerometer in Python for S60](#)
- [How to enter non-ascii character](#)
- [How to record a call](#)
- [Using Text with appuifw2 module](#)
- [Creating SMS encoder using Python](#)
- [How to draw a circle in Python for S60](#)
- [How to create a mp3 player in Maemo](#)
- [How to use Form in Python for S60](#)
- [A simple Tic-Tac-Toe game](#)
- [How to use Listbox](#)
- [How to simulate a keypress in PyS60](#)
- [How to use telephone module](#)
- [Bringing REST architecture to S60 devices with Python: a guided tutorial using Twitter API](#)
- [PyPhotoFrame](#)
- [How to develop brick-breaker game in Python - Part 3](#)
- [Thread: Simple use](#)
- [Creating SMS decoder using Python](#)
- [How to handle keypress easily](#)
- [PyCamera - a tabs interface camera](#)
- [Developing Python Applications for Maemo](#)
- [How to develop brick-breaker game in Python - Part 2](#)
- [How to watch camera events?](#)
- [How to use globalui](#)
- [Persistent Storage in Python](#)
- [Basic canvas application](#)
- [A contact list for choosing number\(s\)](#)
- [Transferring Files Autonomously Between two mobiles.](#)
- [How to set/unset read sms status](#)
- [How to read and add a contact from a file](#)
- [How to create an partly transparent object.text.](#)
- [How to import a variable from a module](#)
- [How to search a file extension](#)
- [Semantic Address Book](#)
- [How to discover bluetooth device](#)
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- [How to use the sysagent module](#)
- [Count Down - small app using Pys60](#)
- [How to update Python script](#)
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- [How to find all symbian](#)

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- [A simple screensaver](#)
- [How to play a tone sound](#)
- [How to take a picture and send it over bluetooth](#)
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- [How to get last missed call](#)
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- [How to open browser](#)
- [How to develop brick-breaker game in Python - Part 1](#)
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- [NMEA \(GPS\) Location Viewer](#)
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- [Mandelbrot set fractals example](#)
- [How to wrap text in canvas screen](#)
- [A simple timeout application](#)

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- [How to draw directly to the phone screen](#)
- [How to get phones IP address using PyS60](#)
- [How to send SMS](#)
- [How to get the bluetooth address of phone](#)
- [Cell id and alarm](#)
- [Customized listbox on canvas with images support](#)
- [Basic framework for creating user interface](#)
- [How to make a Bouncing Ball](#)
- [How to lock and unlock keypad](#)
- [Remove HTML tags from an input text in Pys60](#)
- [How to make vibration](#)
- [How to pause application running](#)
- [Drawing a Calendar on Python Canvas](#)
- [Simple alarm clock for S60 5th Edition](#)
- [Python Hildon Widgets - Part 2](#)
- [Python Hildon Widgets - Part 1](#)
- [Searching all your SMSs at once with SMSearch](#)
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- [Creating trend graphics on canvas](#)
- [How to make backup of a folder](#)
- [Sample application skeleton - pys60](#)
- [How to view icons in a mbm file](#)
- [How to define touch sensitive areas with PyS60](#)
- [How to create menu with callback function that receives parameters](#)
- [How to write contact name and number in a text file.](#)
- [How to write the content of appuifw.Text\(\) into a file](#)
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- [How to choose a phone number](#)
- [How to sort contacts alphabetically](#)
- [Sine wave interference patterns](#)
- [How to plot sparklines](#)
- [How to draw on canvas](#)
- [CanvasLines.jpg](#)
- [How to do simple multitasking](#)
- [Wolfram style cellular automata](#)
- [Motion detection with camera](#)
- [How to generate and play MIDI notes](#)
- [Make the Guido's MClock in Python](#)
- [How to draw an icon on canvas](#)

Pys60 FAQs

The Pys60 FAQs will be listed [here](#) but you can edit or add others [there](#) in the wiki.

Known Issues for Python

- [Issue Text primitive doesn't work in 3rd edition](#)
- [KIP001278 - Receiving SMS in PyS60](#)
- [Time.strftime %y format works incorrectly](#)

Tips & Tricks for Python

Video Demos

- Comments by people who use PyS60 (length: 4 min.)

[\(*.AVI 115 MB\)](#) [\(Flash 8\)](#) [\(*.MOV 255 MB\)](#)

- See what art & design students do with PyS60 (length 15min.)

[\(*.AVI 184 MB\)](#) [\(Flash 8\)](#) [\(*.MOV 255 MB\)](#)

- See what technical students do with PyS60 (length 12min.)

[\(*.AVI 115 MB\)](#) [\(Flash 8\)](#) [\(*.MOV 145 MB\)](#)