Raspberry Pi Pico - Template for Python

Table of Content

1. Introduction

This repository can be used as a template for a new Raspberry Pi Pico python project. For further install instructions, take a look at the "Getting Started with Pico" manual. Information about the MicroPython SDK can be found in the manual "Raspberry Pi Pico Python SDK".

> **Note:** Once you have downloaded/cloned this repository, open it in Visual Studio Code and run `> MicroPico > Configure Project` command via `Ctrl+Shift+P` (or the equivalent on your platform) VS Code command palette to initialize MicroPico.

2. Required Software (Windows/Mac-OS/Linux)

Name	Description	Link
Python	Python is an easy to learn, powerful programming language. It has efficient high-level data structures and a simple but effective approach to object-oriented programming. Python's elegant syntax and dynamic typing, together with its interpreted nature, make it an ideal language for scripting and rapid application development in many areas on most platforms.	https://www.python.org/
Visual Studio Code	Visual Studio Code is a lightweight but powerful source code editor which runs on your desktop and is available for Windows, macOS and Linux. It comes with built-in support for JavaScript, TypeScript and Node.js and has a rich ecosystem of extensions for other languages and runtimes (such as C++, C#, Java, Python, PHP, Go, .NET).	https://code.visualstudio.com/
Git	Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency.	https://git-scm.com/

Additional Dependencies and Install Instructions for Linux and Mac-OS

Mac-OS

To install all requirements for the extension on macOS, run the following command:

```
xcode-select --install
```

This installs the following dependencies:

- Git
- Tar
- A native C and C++ compiler (the extension supports GCC and Clang)

Linux

Most Linux distributions come preconfigured with all of the dependencies needed to run the extension. However, some
distributions may require additional dependencies. The extension requires the following:

- Python 3.9 or later
- Git
- Tar
- GDB Multiarch (for debugging)
- a native C and C++ compiler (the extension supports GCC)

Ubuntu based Linux

```
sudo apt update
sudo apt install python3 git tar cmake gcc-arm-none-eabi libnewlib-
arm-none-eabi libstdc++-arm-none-eabi-newlib build-essential
libftdi1-2 libhidapi-hidraw0 openocd gdb-multiarch
```
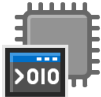
Arch Linux

```
pacman -S git python tar cmake arm-none-eabi-gcc arm-none-eabi-gdb
arm-none-eabi-newlib arm-none-eabi-binutils gdb
```

3. Required Visual Studio Code Plugins

Name	Description	Link
Raspberry Pi Pico	This is the official Visual Studio Code extension for Raspberry Pi Pico development. This extension equips you with a suite of tools designed to streamline your Pico projects using Visual Studio Code and the official Pico SDK.	https://marketplace.visualstudio.com/items?itemName=raspberry-pi.raspberry-pi-pico
MicroPico	"MicroPico" is a Visual Studio Code extension designed to simplify and accelerate the development of MicroPython	https://marketplace.visualstudio.com/items?itemName=paulober.pico-w-go

Name	Description	Link
	projects for the Raspberry Pi Pico and Pico W boards. This tool streamlines the coding process, providing code highlighting, auto-completion, code snippets, and project management features, all tailored for the seamless development experience with MicroPython on Raspberry Pi Pico and Pico W microcontrollers.	
Python	A Visual Studio Code extension with rich support for the Python language (for all actively supported versions of the language: >=3.7), including features such as IntelliSense (Pylance),linting, debugging, code navigation, code formatting refactoring, variable explorer, test explorer, and more!	https://marketplace.visualstudio.com/items?itemName=ms-python.python
Pylance	Pylance is an extension that works alongside Python in Visual Studio Code to provide performant language support. Under the hood, Pylance is powered by Pyright, Microsoft's static type checking tool. Using Pyright, Pylance has the ability to supercharge your Python IntelliSense experience with rich type information, helping you write better code faster.	https://marketplace.visualstudio.com/items?itemName=ms-python.vscode-pylance
C/C++	The C/C++ extension adds language support for C/C++ to Visual Studio Code, including editing (IntelliSense) and debugging features.	https://marketplace.visualstudio.com/items?itemName=ms-vscode.cpptools
C/C++ Extension	This extension pack includes a set of popular extensions for C++ development in Visual Studio Code.	https://marketplace.visualstudio.com/items?itemName=ms-vscode.cpptools-extension-pack

Name	Description	Link
Pack		
	DARM Cortex-M GDB Debugger support for VSCode.	https://marketplace.visualstudio.com/items?itemName=marus25.cortex-debug
Serial Monitor	The Serial Monitor extension provides a serial monitor to view output from as well as send messages to serial ports. This is often useful when testing or debugging programs on embedded devices.	https://marketplace.visualstudio.com/items?itemName=ms-vscode.vscode-serial-monitor

4. Recommended Visual Studio Code Plugins

Name	Description	Link
IntelliCode	The Visual Studio IntelliCode extension provides AI-assisted development features for Python, TypeScript/JavaScript and Java developers in Visual Studio Code, with insights based on understanding your code context combined with machine learning.	https://marketplace.visualstudio.com/items?itemName=VisualStudioExptTeam.vscodeintellicode
VSCode PDF	Display pdf in VSCode.	https://marketplace.visualstudio.com/items?itemName=tomoki1207.pdf
Python Indent	Correct Python indentation in Visual Studio Code.	https://marketplace.visualstudio.com/items?itemName=KevinRose.vsc-python-indent
Python Docstring	Visual Studio Code extension to quickly	https://marketplace.visualstudio.com/items?itemName=njpwerner.autodocstring

Name	Description	Link
Generator	generate docstrings for python functions.	
German Language Pack for Visual Studio Code	Das deutsche Sprachpaket bietet eine lokalisierte Benutzeroberfläche für VS Code.	https://marketplace.visualstudio.com/items?itemName=MS-CEINTL.vscode-language-pack-de

5. Optional Visual Studio Code Themes

Name	Description	Link
Material Theme	Color Theme	https://marketplace.visualstudio.com/items?itemName=Equinusocio.vsc-material-theme
Material Icon Theme	Workspace Icon Theme	https://marketplace.visualstudio.com/items?itemName=PKief.material-icon-theme
Material Product Icons	VSCode Icon Theme	https://marketplace.visualstudio.com/items?itemName=PKief.material-product-icons

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