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Visual Studio Code – Getting Started   Rev 1.0

Overview:

In the Python Getting Started activity you used the Thonny editor that was installed with the Raspian operating system to edit and run Python code. In this activity, you will install the Visual Studio Code integrated development environment (IDE) and use it to run code. We'll write code using VS Code in later activities.

VS Code is a professional tool used by most developers. It is lightweight and can be configured for many different languages and tool extensions. Most professionals install the IDE on their workstation and develop on the Raspberry Pi remotely. In this course you will install and run Visual Studio Code directly on the Raspberry Pi.

Prerequisites:

Prior to beginning the instruction provided in this lesson you must have completed the following:

1. Python – Getting Started

Performance Outcomes:

1. Install Visual Studio Code on a Raspberry PI.
2. Recognize components of the Visual Studio Code window.
3. Open and run a Python program using the VS Code debugger.

Resources:

1. [How to install Visual Studio Code on a Raspberry Pi 4 in minutes](#)
2. [code.headmelted.com](#)
3. [Most Popular Development Environments](#)
4. [Why VS Code?](#)

Materials:

1. piRover

Introduction to Visual Studio Code

Visual Studio Code is a powerful code editor. It is a free, lightweight, open-source editor that helps you write professional code for Windows, Mac, and Linux platforms. It includes support for debugging, Git source control, and code completion. Its simplified edit, build, and debug cycle makes it ideal for both the beginner and the serious professional. VS Code comes with built-in support for JavaScript, TypeScript and Node.js, but you will be installing an extension providing support for Python.

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Review the Stack Overflow 2019 Survey at
https://insights.stackoverflow.com/survey/2019 and you will see that
it is one of the top, if not the top, editors used by developer. See
additional information on why VS Code is preferred at this link – Why
VS Code? In short, this is a great tool. You will want to learn it well!

Installing VS Code

Thanks to Jay Rodgers at code.headmelted.com the installation of
Visual Studio Code on the ARM processor of the Raspberry Pi is easy.
See Scott Hanselman's post How to install Visual Studio Code on a
Raspberry Pi 4 in minutes for additional details.

1. Open and view your piRover desktop using VNC Viewer.

2. Open a terminal window and enter the following command. This
    command enables the following script to run with root access. Recall
    that sudo is "super-user-do" and is just like elevating your rights to
    administrator on a Windows workstation.

    sudo -s
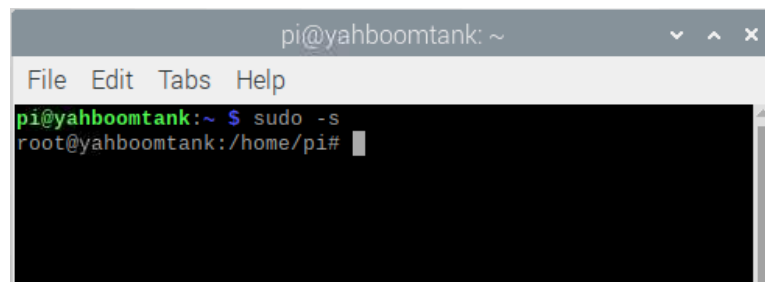
3. Note the change in the terminal window prompt when you enter this
    mode. You are now running a script as "root" rather the "pi" user.

4. Copy the following to the command line to execute the installation
    script from http://code.headmelted.com/ or Scott Hanselman's post.
    You can also enter it directly at the command prompt but be sure to
    include the required spaces. The command starts with the period and
   then a space. Refer to the screen capture below.

```
. <( wget -O - https://code.headmelted.com/installers/apt.sh )
```

5. It is best to copy the line above and paste it into the terminal
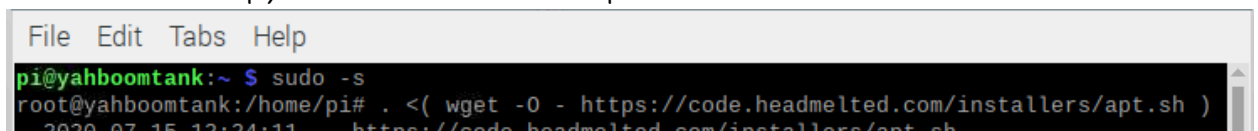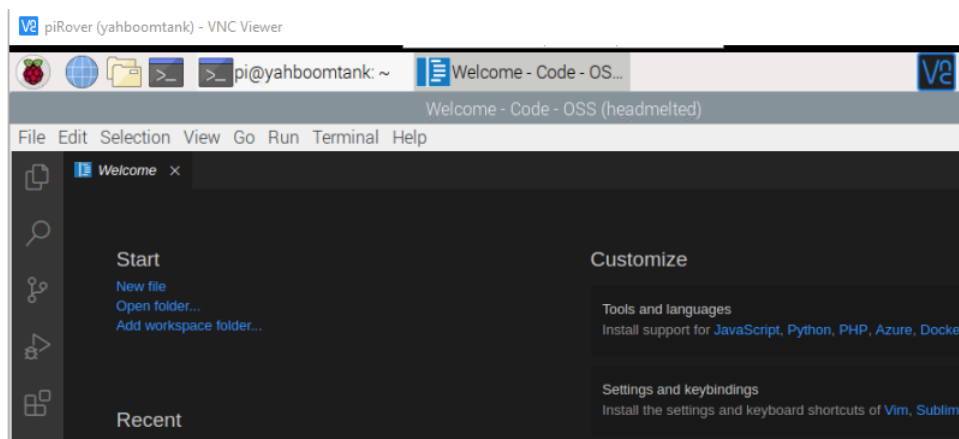
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6. The installation runs, and you will see an installation complete! message. Close the terminal window to remove root access.

7. Visual Studio Code is now available as Code-OSS. Open the Raspberry Pi menu and navigate to the Programming group. Code-OSS (headmelted) is available.
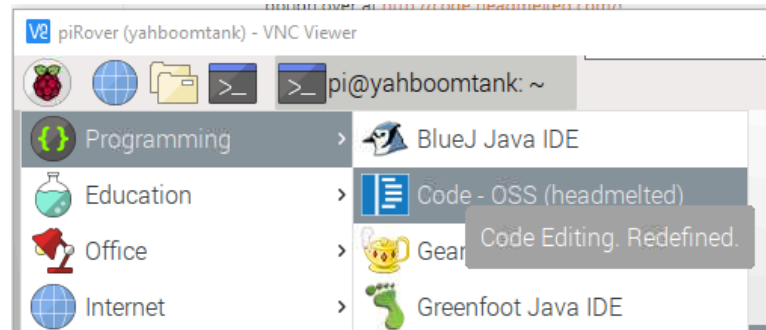
8. You can also launch the VS Code environment from any terminal prompt by entering **code-oss**. Let's open VS Code and run the ColorLED_v3.py program introduced in the Python Getting Started activity.

9. Open the terminal window and launch VS Code using the **code-oss** command.
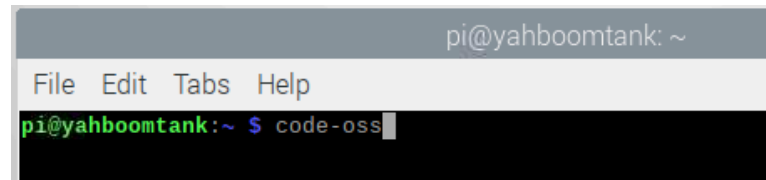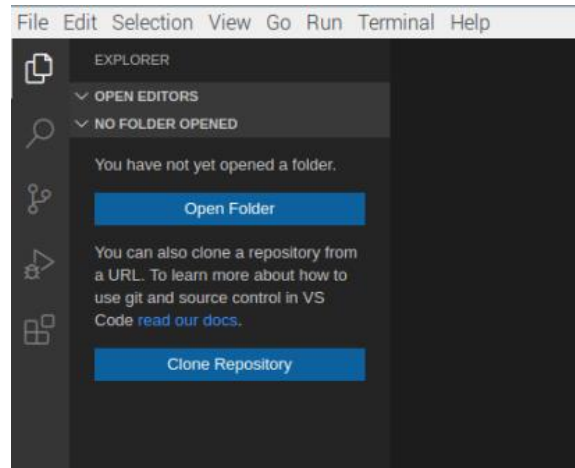

10. VS Code launches with the Welcome screen visible. There is a lot of good information on the Welcome screen but close for now.
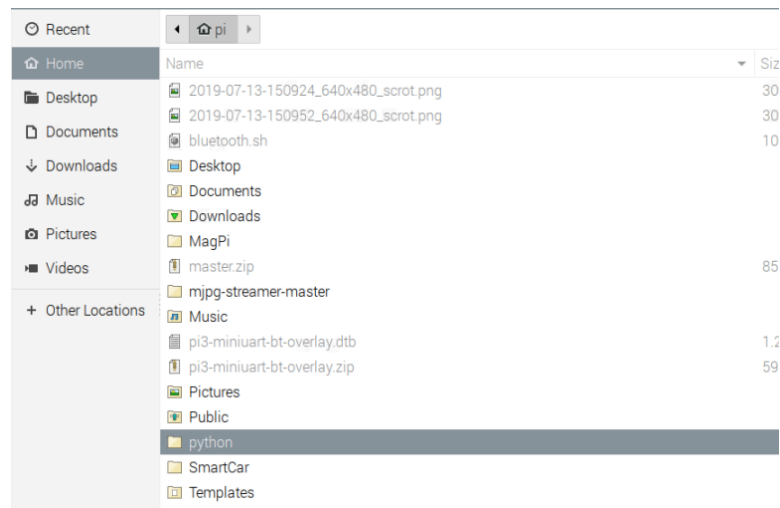

11. Open the Python folder that contained the ColorLED_v3.py file using the File Explorer icon at the top of the Activity Bar at the left.
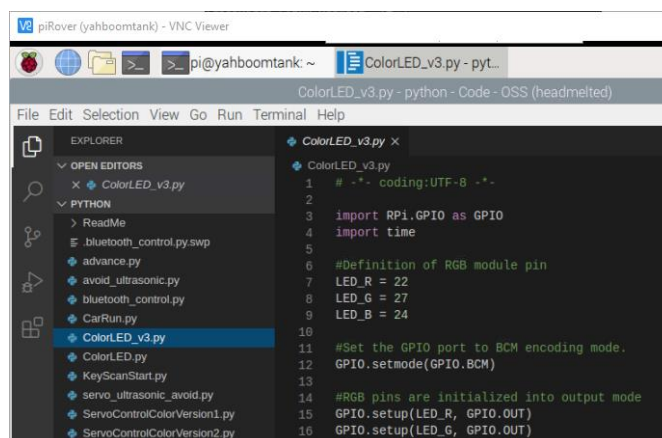
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12. Click the Open Folder button and then select Home from the directory list on the left and then python from the list of folders in the main window.


13. The folder contents are now available in the Explorer pane. Click the ColorLED_v3.py file created in the prior assignment. It opens in the editor.
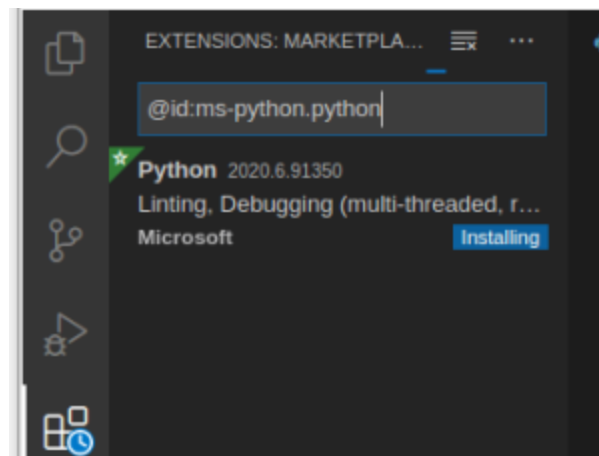

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14. Look at the notification that is displayed in the lower right-hand corner of the editor. VS Code has recognized this file as Python code and is prompting you to install the related extension that enables Python in VS Code. Click Install to add this extension to VS Code.
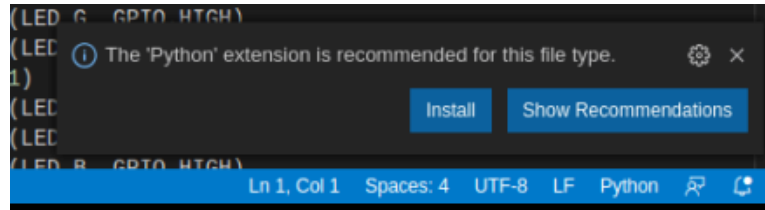

15. The Activity Bar switches to the Extensions tool and support for Python is installed.

16. Now view the status bar at the bottom of the VS Code windows. This shows that you are currently operating in the version 3.7 environment.
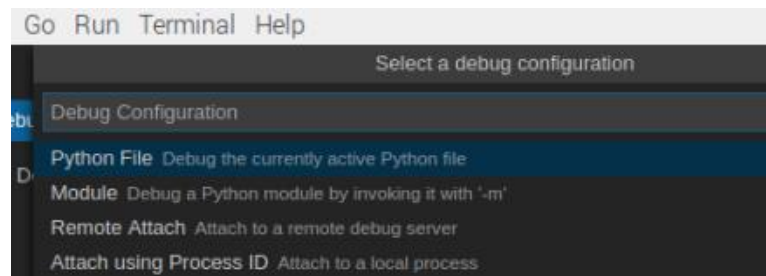

17. Run the ColorLED_v3.py program by selecting Run from the menu and then Start Debugging. Note that you can also use the F5 function key to start the program.
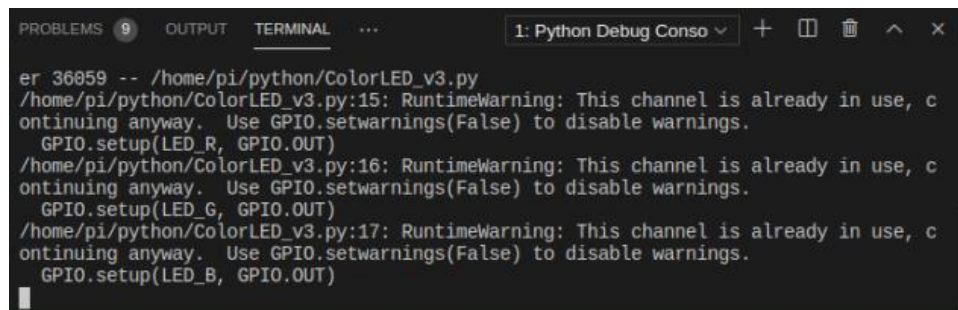

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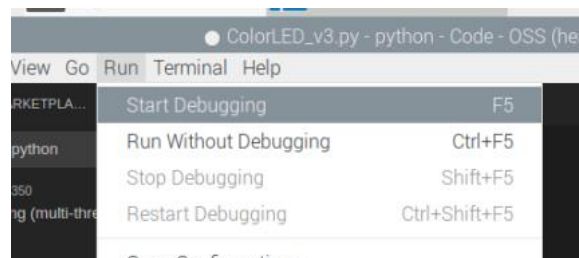
18. The Command Palette opens prompting for you to select a configuration for the debug session. Select the first option "Python File" and the program will run.

19. The output from the program is displayed in the terminal pane. You will review these warning statements later, but for now, the code runs and the LEDs flash.

20. To stop the execution, click the red square icon in the debug tools at the top of the window.
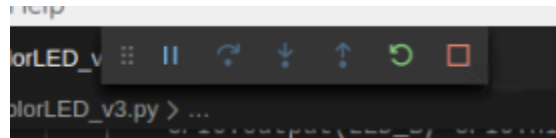
21. There is a lot more to investigate and learn both about Python and the Visual Studio Code environment. But, for now, you were able to load a Python file into the VS Code editor and run the program.

22. This activity is the final action in the first section (Sprint) in the course. At this point in the course, you must have the software and other tools installed so that you can write and execute Python code on your system. If you are having difficulty be sure that you are in contact with the instructor. Again, you must have a functional system as you move into the next section of the course.

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Assessment:

Run the ColorLED_v3.py file again in VS Code. Use a screen capture tool to record an image of the VS Code window with the Python code running. Save this file as **VSCodeWithPython.jpg**. Submit this file to Moodle along with other files in this week's zip file.