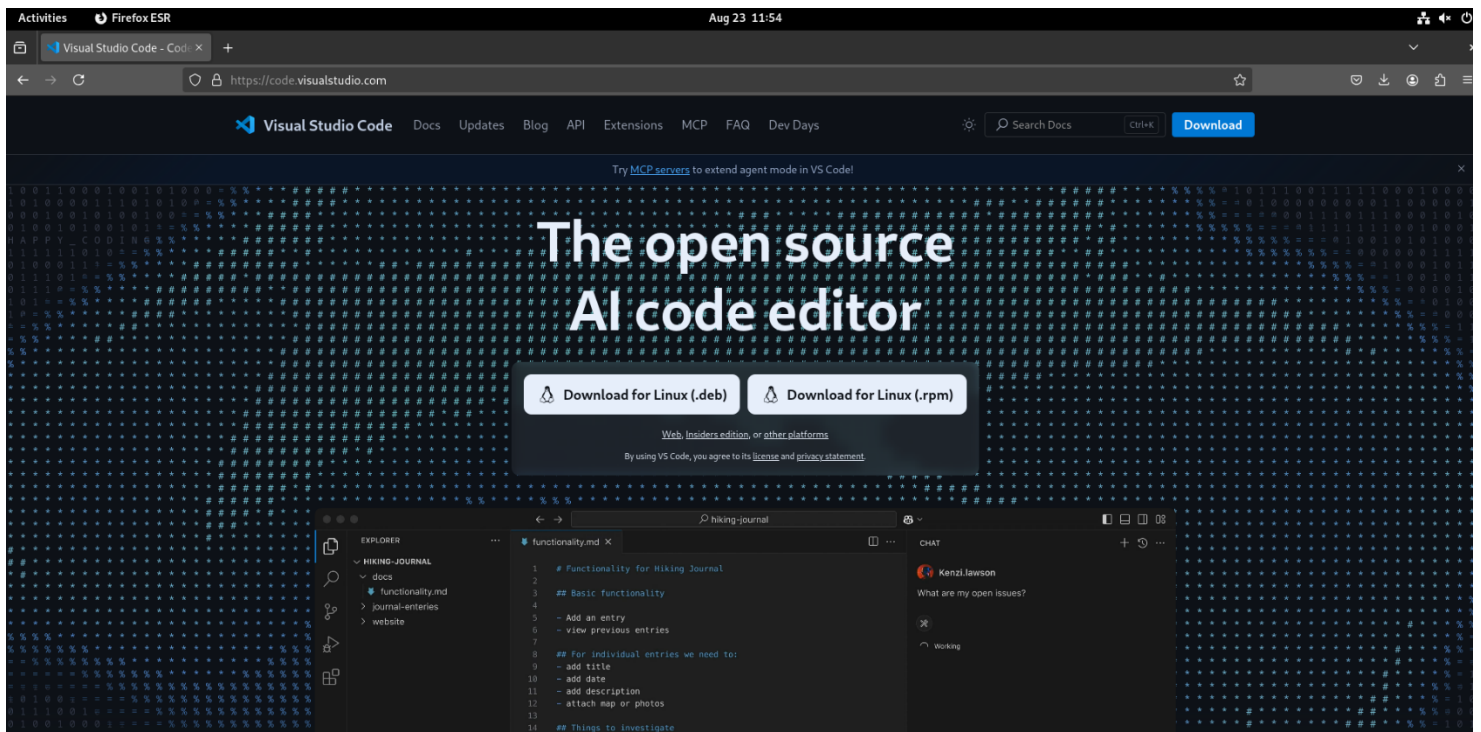


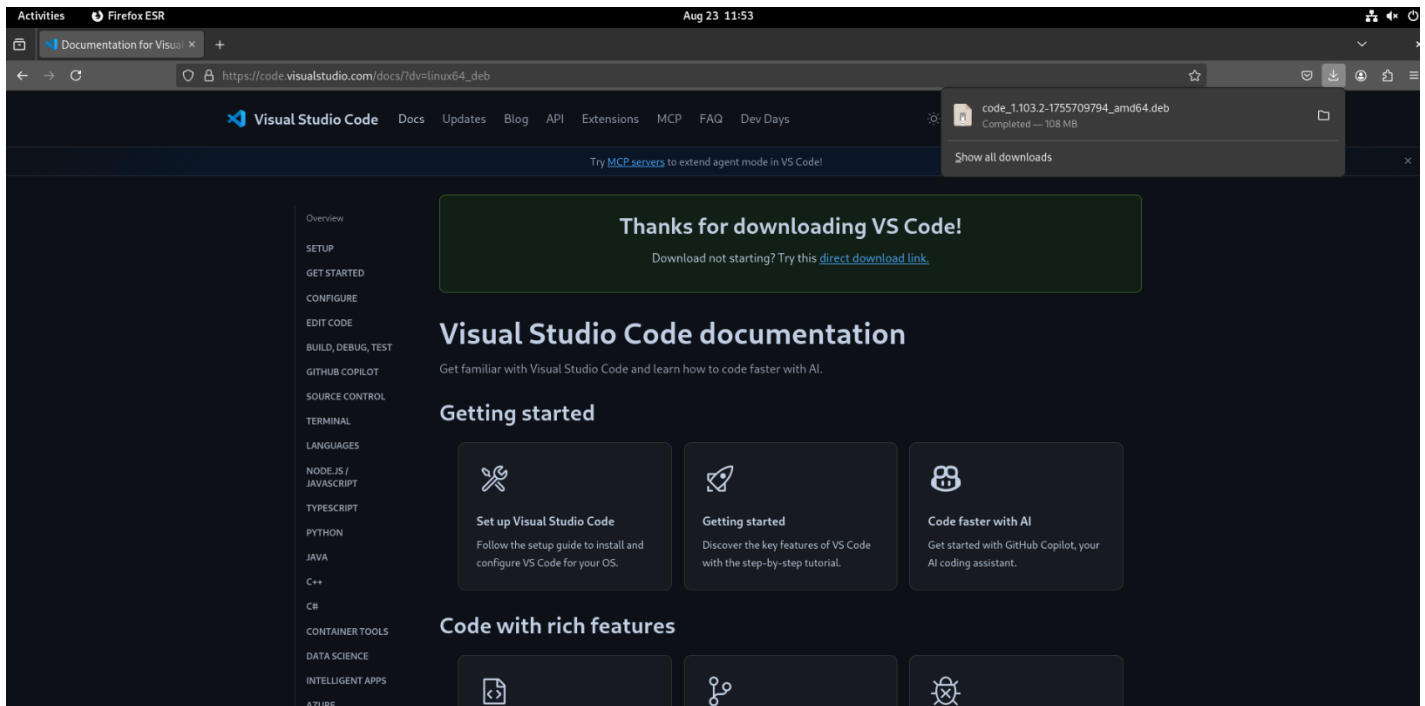
Python3 Installation

```
zacha@capstoneadmin:~$ sudo apt upgrade
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following package was automatically installed and is no longer required:
  linux-image-6.1.0-35-amd64
Use 'sudo apt autoremove' to remove it.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
zacha@capstoneadmin:~$ sudo apt update
Hit:1 http://security.debian.org/debian-security bookworm-security InRelease
Hit:2 http://deb.debian.org/debian bookworm InRelease
Hit:3 http://deb.debian.org/debian bookworm-updates InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
zacha@capstoneadmin:~$ sudo apt install python3
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
python3 is already the newest version (3.11.2-1+b1).
python3 set to manually installed.
The following package was automatically installed and is no longer required:
  linux-image-6.1.0-35-amd64
Use 'sudo apt autoremove' to remove it.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
zacha@capstoneadmin:~$
```

IDE Installation Page - Visual Studio Code



IDE Download

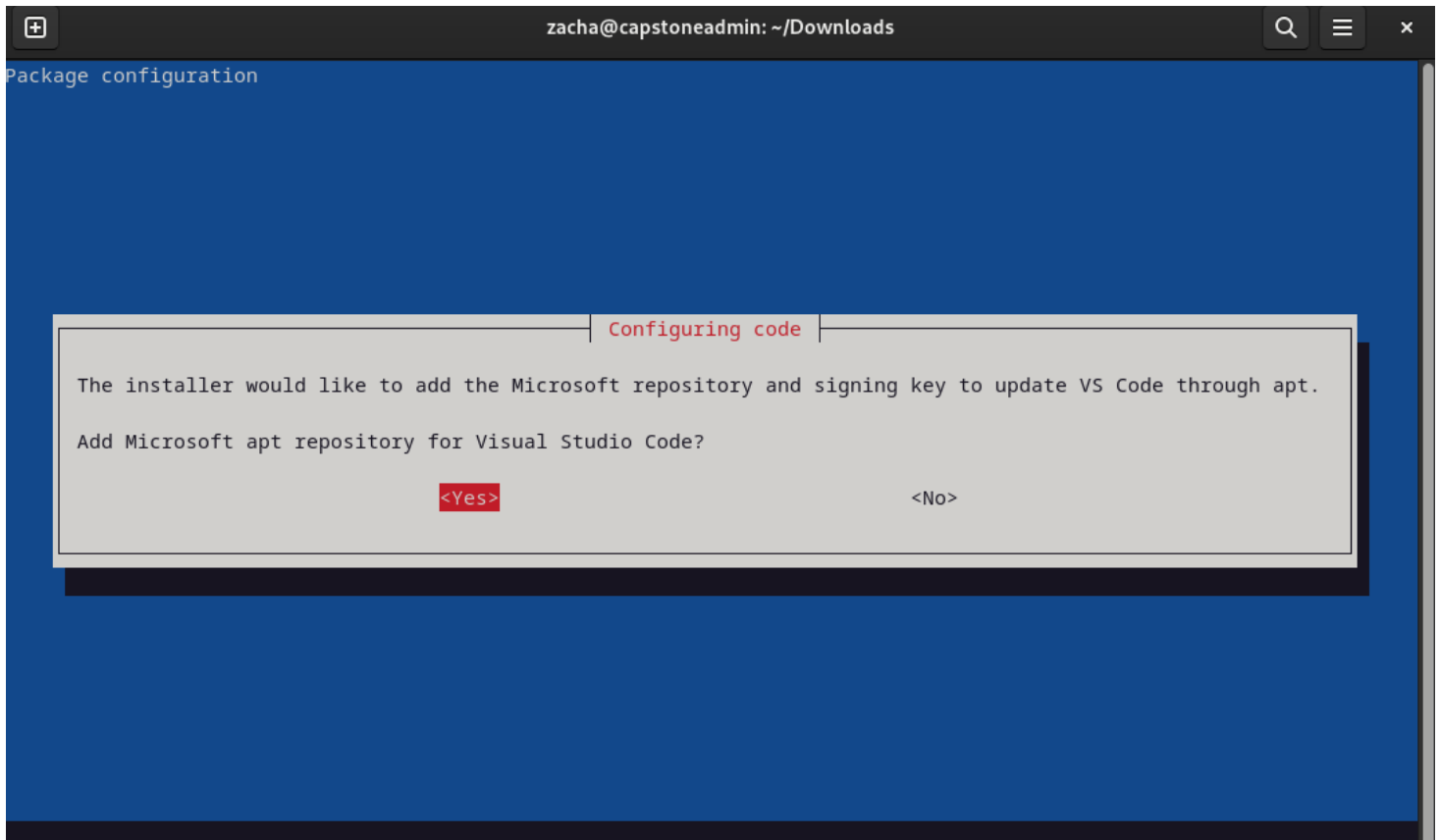


IDE Install Process – 1/3

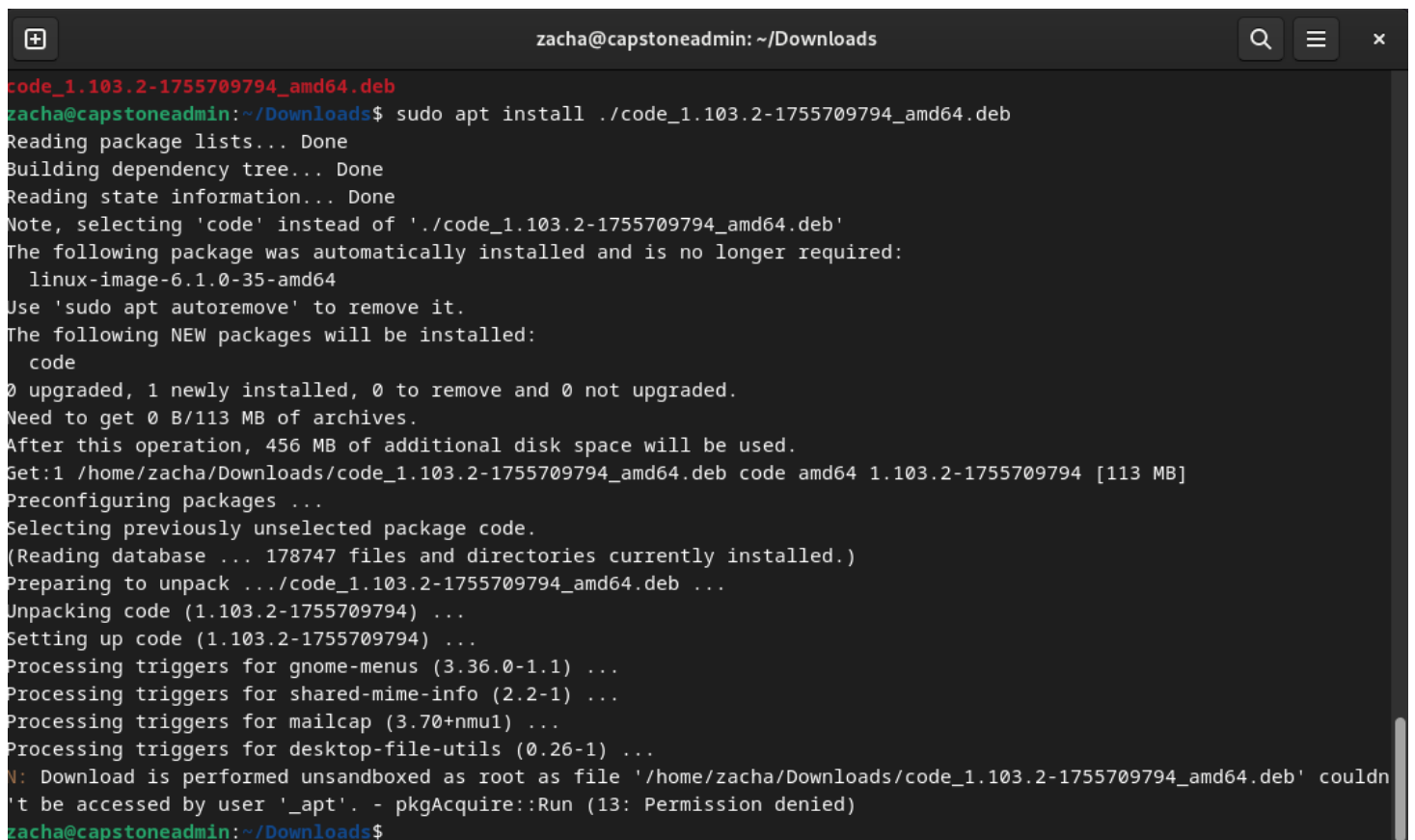
```
zacha@capstoneadmin: ~/Downloads

Use 'sudo apt autoremove' to remove it.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
zacha@capstoneadmin:~$ ls
Desktop Documents Downloads Music Pictures Public Templates Videos
zacha@capstoneadmin:~$ cd Downloads/
zacha@capstoneadmin:~/Downloads$ ls
code_1.103.2-1755709794_amd64.deb
zacha@capstoneadmin:~/Downloads$ sudo apt install ./code_1.103.2-1755709794_amd64.deb
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Note, selecting 'code' instead of './code_1.103.2-1755709794_amd64.deb'
The following package was automatically installed and is no longer required:
  linux-image-6.1.0-35-amd64
Use 'sudo apt autoremove' to remove it.
The following NEW packages will be installed:
  code
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 0 B/113 MB of archives.
After this operation, 456 MB of additional disk space will be used.
Get:1 /home/zacha/Downloads/code_1.103.2-1755709794_amd64.deb code amd64 1.103.2-1755709794 [113 MB]
Preconfiguring packages ...
Selecting previously unselected package code.
(Reading database ... 178747 files and directories currently installed.)
Preparing to unpack .../code_1.103.2-1755709794_amd64.deb ...
Unpacking code (1.103.2-1755709794) ...
Progress: [ 20%] [#####.....]
```

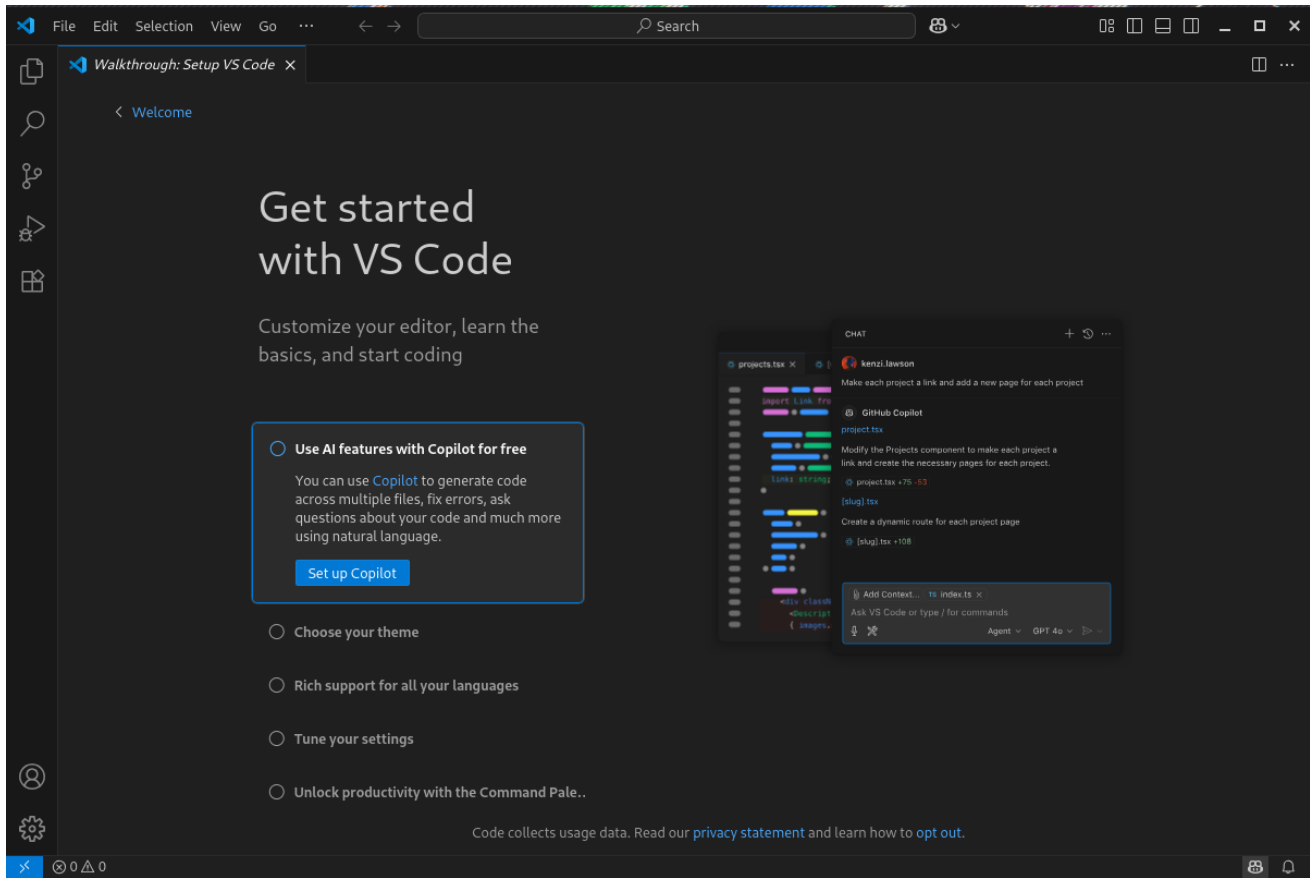
IDE Install Process – 2/3



IDE Install Process – 3/3



IDE Installation Complete



Installing PIP as a dependency

```
zacha@capstoneadmin: ~/Downloads
zacha@capstoneadmin:~/Downloads$ sudo apt install pip
[sudo] password for zacha:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Note, selecting 'python3-pip' instead of 'pip'
The following package was automatically installed and is no longer required:
  linux-image-6.1.0-35-amd64
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  libexpat1-dev libjs-jquery libjs-sphinxdoc libjs-underscore libpython3-dev libpython3.11-dev python3-dev
  python3-distutils python3-lib2to3 python3-setuptools python3-wheel python3.11-dev zlib1g-dev
Suggested packages:
  python-setuptools-doc
The following NEW packages will be installed:
  libexpat1-dev libjs-jquery libjs-sphinxdoc libjs-underscore libpython3-dev libpython3.11-dev python3-dev
  python3-distutils python3-lib2to3 python3-pip python3-setuptools python3-wheel python3.11-dev zlib1g-dev
0 upgraded, 14 newly installed, 0 to remove and 0 not upgraded.
Need to get 9,116 kB of archives.
After this operation, 41.3 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

PIP installation complete

```
zacha@capstoneadmin: ~/Downloads
Unpacking python3-dev (3.11.2-1+b1) ...
Selecting previously unselected package python3-setuptools.
Preparing to unpack .../11-python3-setuptools_66.1.1-1+deb12u1_all.deb ...
Unpacking python3-setuptools (66.1.1-1+deb12u1) ...
Selecting previously unselected package python3-wheel.
Preparing to unpack .../12-python3-wheel_0.38.4-2_all.deb ...
Unpacking python3-wheel (0.38.4-2) ...
Selecting previously unselected package python3-pip.
Preparing to unpack .../13-python3-pip_23.0.1+dfsg-1_all.deb ...
Unpacking python3-pip (23.0.1+dfsg-1) ...
Setting up libexpat1-dev:amd64 (2.5.0-1+deb12u1) ...
Setting up zlib1g-dev:amd64 (1:1.2.13.dfsg-1) ...
Setting up libjs-jquery (3.6.1+dfsg+~3.5.14-1) ...
Setting up python3-lib2to3 (3.11.2-3) ...
Setting up libjs-underscore (1.13.4~dfsg+~1.11.4-3) ...
Setting up python3-distutils (3.11.2-3) ...
Setting up python3-setuptools (66.1.1-1+deb12u1) ...
Setting up python3-wheel (0.38.4-2) ...
Setting up libpython3.11-dev:amd64 (3.11.2-6+deb12u6) ...
Setting up python3-pip (23.0.1+dfsg-1) ...
Setting up libjs-sphinxdoc (5.3.0-4) ...
Setting up libpython3-dev:amd64 (3.11.2-1+b1) ...
Setting up python3.11-dev (3.11.2-6+deb12u6) ...
Setting up python3-dev (3.11.2-1+b1) ...
Processing triggers for man-db (2.11.2-2) ...
zacha@capstoneadmin:~/Downloads$
```

PyQT5 installation

```
zacha@capstoneadmin: ~$ sudo apt install python3-pyqt5
[sudo] password for zacha:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  linux-image-6.1.0-35-amd64
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  libdouble-conversion3 libmd4c0 libpcre2-16-0 libqt5core5a libqt5dbus5 libqt5designer5 libqt5gui5 libqt5help5
  libqt5network5 libqt5printsupport5 libqt5qml5 libqt5qmlmodels5 libqt5quick5 libqt5sql5 libqt5sql5-sqlite
  libqt5svg5 libqt5test5 libqt5waylandclient5 libqt5waylandcompositor5 libqt5widgets5 libqt5xml5 libxcb-xinerama0
  libxcb-xinput0 python3-pyqt5.sip qt5-gtk-platformtheme qttranslations5-l10n qtwayland5
Suggested packages:
  qgnomeplatform-qt5 qt5-image-formats-plugins qt5-qmltooling-plugins
The following NEW packages will be installed:
  libdouble-conversion3 libmd4c0 libpcre2-16-0 libqt5core5a libqt5dbus5 libqt5designer5 libqt5gui5 libqt5help5
  libqt5network5 libqt5printsupport5 libqt5qml5 libqt5qmlmodels5 libqt5quick5 libqt5sql5 libqt5sql5-sqlite
  libqt5svg5 libqt5test5 libqt5waylandclient5 libqt5waylandcompositor5 libqt5widgets5 libqt5xml5 libxcb-xinerama0
  libxcb-xinput0 python3-pyqt5 python3-pyqt5.sip qt5-gtk-platformtheme qttranslations5-l10n qtwayland5
0 upgraded, 28 newly installed, 0 to remove and 0 not upgraded.
Need to get 21.3 MB of archives.
After this operation, 90.2 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

```
zacha@capstoneadmin: ~  
Setting up qttranslations5-l10n (5.15.8-2) ...  
Setting up libqt5core5a:amd64 (5.15.8+dfsg-11+deb12u3) ...  
Setting up python3-pyqt5.sip (12.11.1-1) ...  
Setting up libqt5dbus5:amd64 (5.15.8+dfsg-11+deb12u3) ...  
Setting up libmd4c0:amd64 (0.4.8-1) ...  
Setting up libqt5test5:amd64 (5.15.8+dfsg-11+deb12u3) ...  
Setting up libqt5network5:amd64 (5.15.8+dfsg-11+deb12u3) ...  
Setting up libqt5sql5:amd64 (5.15.8+dfsg-11+deb12u3) ...  
Setting up libqt5xml5:amd64 (5.15.8+dfsg-11+deb12u3) ...  
Setting up libqt5qml5:amd64 (5.15.8+dfsg-3) ...  
Setting up libqt5qmlmodels5:amd64 (5.15.8+dfsg-3) ...  
Setting up libqt5sql5-sqlite:amd64 (5.15.8+dfsg-11+deb12u3) ...  
Setting up libqt5gui5:amd64 (5.15.8+dfsg-11+deb12u3) ...  
Setting up libqt5widgets5:amd64 (5.15.8+dfsg-11+deb12u3) ...  
Setting up libqt5help5:amd64 (5.15.8-2) ...  
Setting up qt5-gtk-platformtheme:amd64 (5.15.8+dfsg-11+deb12u3) ...  
Setting up libqt5waylandclient5:amd64 (5.15.8-2) ...  
Setting up libqt5printsupport5:amd64 (5.15.8+dfsg-11+deb12u3) ...  
Setting up libqt5quick5:amd64 (5.15.8+dfsg-3) ...  
Setting up libqt5designer5:amd64 (5.15.8-2) ...  
Setting up libqt5svg5:amd64 (5.15.8-3) ...  
Setting up libqt5waylandcompositor5:amd64 (5.15.8-2) ...  
Setting up python3-pyqt5 (5.15.9+dfsg-1) ...  
Setting up qtwayland5:amd64 (5.15.8-2) ...  
Processing triggers for libc-bin (2.36-9+deb12u10) ...  
zacha@capstoneadmin:~$
```

Devtools installation

```
zacha@capstoneadmin: ~  
Setting up qtwayland5:amd64 (5.15.8-2) ...  
Processing triggers for libc-bin (2.36-9+deb12u10) ...  
zacha@capstoneadmin:~$ sudo apt install qtcreator pyqt5-dev-tools  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
The following package was automatically installed and is no longer required:  
  linux-image-6.1.0-35-amd64  
Use 'sudo apt autoremove' to remove it.  
The following additional packages will be installed:  
  assistant-qt6 clang-14 clang-tidy clang-tidy-14 clang-tools-14 clangd clangd-14 designer-qt6 gdb icu-devtools  
  lib32gcc-s1 lib32stdc++6 libb2-1 libbabeltrace1 libboost-regex1.74.0 libc-ares2 libc6-dbg libc6-i386  
  libclang-common-14-dev libclang-cpp14 libclang-cpp15 libclang-rt-14-dev libclang1-14 libclang1-15 libcurl3-nss  
  libdebuginfod-common libdebuginfod1 libffi-dev libgrpc++1.51 libgrpc29 libgumbo1 libicu-dev libipt2 liblitehtml0  
  libllvm14 libmng1 libncurses-dev libobjc-12-dev libobjc4 libpfm4 libprotoc32 libqt6concurrent6 libqt6core5compat6  
  libqt6core6 libqt6dbus6 libqt6designer6 libqt6designercomponents6 libqt6gui6 libqt6help6 libqt6jsonrpc6  
  libqt6languageserver6 libqt6network6 libqt6opengl6 libqt6openglwidgets6 libqt6printsupport6 libqt6qml6  
  libqt6qmlcompiler6 libqt6qmlmodels6 libqt6qmlworkerscript6 libqt6quick3d6 libqt6quick3dassetimport6  
  libqt6quick3dassetutils6 libqt6quick3dparticles6 libqt6quick3druntimerender6 libqt6quick3dutils6 libqt6quick6  
  libqt6quickcontrols2-6 libqt6quickcontrols2impl6 libqt6quicklayouts6 libqt6quicktemplates2-6 libqt6quicktest6  
  libqt6quicktimeline6 libqt6quickwidgets6 libqt6serialport6 libqt6shadertools6 libqt6sql6 libqt6sql6-sqlite  
  libqt6svg6 libqt6svgwidgets6 libqt6test6 libqt6uitools6 libqt6widgets6 libqt6xml6 libre2-9  
  libsource-highlight-common libsource-highlight4v5 libtinfo-dev libts0 libxml2-dev libyaml-cpp0.7 libz3-dev  
  linguist-qt6 llvm-14 llvm-14-dev llvm-14-linker-tools llvm-14-runtime llvm-14-tools nss-plugin-pem  
  python3-pygments python3-yaml qdbus-qt6 qml-qt6 qml6-module-qtqml-models qml6-module-qtqml-workerscript  
  qml6-module-qtquick qml6-module-qtquick-controls qml6-module-qtquick-layouts qt6-base-dev-tools  
  qt6-declarative-dev-tools qt6-documentation-tools qt6-gtk-platformtheme qt6-image-formats-plugins qt6-l10n-tools  
  qt6-qmltooling-plugins qt6-qpas-plugins qt6-tools-dev-tools qt6-translations-l10n qtcreator-data qtcreator-doc  
Suggested packages:  
  clang-14-doc wasi-libc gdb-doc gdbserver icu-doc ncurses-doc pkg-config llvm-14-doc python-pygments-doc  
  ttf-bitstream-vera cmake clazy git meson subversion valgrind python3-pylsp
```


Devtools completion download

```
zacha@capstoneadmin: ~  
Setting up libqt6quicktemplates2-6:amd64 (6.4.2+dfsg-1) ...  
Setting up libqt6quickwidgets6:amd64 (6.4.2+dfsg-1) ...  
Setting up qml6-module-qtqml-workerscript:amd64 (6.4.2+dfsg-1) ...  
Setting up libqt6quickcontrols2impl6:amd64 (6.4.2+dfsg-1) ...  
Setting up clangd:amd64 (1:14.0-55.7~deb12u1) ...  
Setting up libqt6quicktest6:amd64 (6.4.2+dfsg-1) ...  
Setting up libqt6uitools6:amd64 (6.4.2~rc1-2) ...  
Setting up libqt6quick3d6:amd64 (6.4.2-1) ...  
Setting up assistant-qt6 (6.4.2~rc1-2) ...  
Setting up qml6-module-qtquick-layouts:amd64 (6.4.2+dfsg-1) ...  
Setting up libqt6quickcontrols2-6:amd64 (6.4.2+dfsg-1) ...  
Setting up libqt6designercomponents6:amd64 (6.4.2~rc1-2) ...  
Setting up libqt6quick3dparticles6:amd64 (6.4.2-1) ...  
Setting up linguist-qt6 (6.4.2~rc1-2) ...  
Setting up qt6-declarative-dev-tools (6.4.2+dfsg-1) ...  
Setting up designer-qt6 (6.4.2~rc1-2) ...  
Setting up libqt6quick3dassetutils6:amd64 (6.4.2-1) ...  
Setting up qml6-module-qtquick-controls:amd64 (6.4.2+dfsg-1) ...  
Setting up qt6-tools-dev-tools (6.4.2~rc1-2) ...  
Setting up qtcreeator (9.0.2-2) ...  
Processing triggers for mailcap (3.70+nmul) ...  
Processing triggers for desktop-file-utils (0.26-1) ...  
Processing triggers for hicolor-icon-theme (0.17-2) ...  
Processing triggers for gnome-menus (3.36.0-1.1) ...  
Processing triggers for libc-bin (2.36-9+deb12u10) ...  
Processing triggers for systemd (252.38-1~deb12u1) ...  
Processing triggers for man-db (2.11.2-2) ...  
Processing triggers for shared-mime-info (2.2-1) ...  
zacha@capstoneadmin: $
```

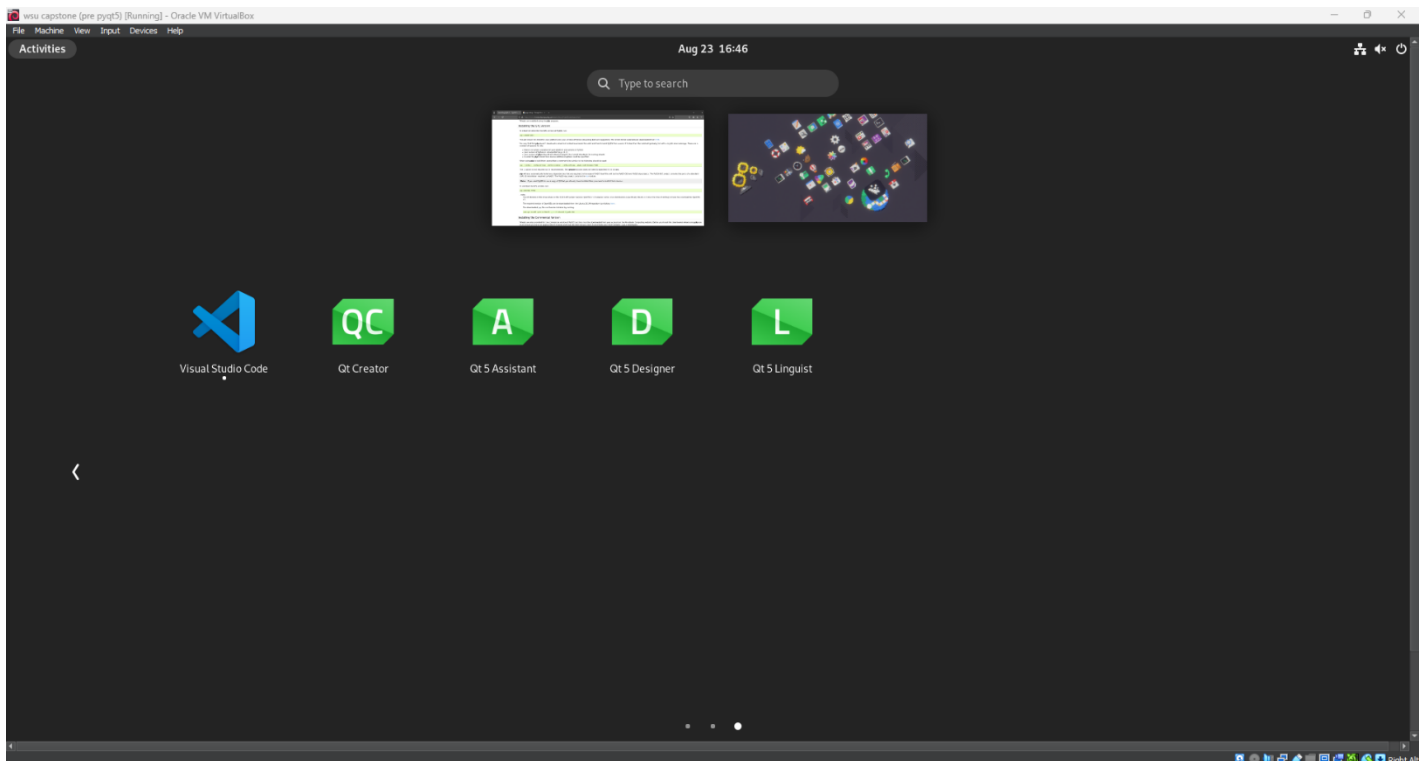
QtTools5-dev-tools installation

```
zacha@capstoneadmin: ~  
Setting up libqt6quick3dassetutils6:amd64 (6.4.2-1) ...  
Setting up qml6-module-qtquick-controls:amd64 (6.4.2+dfsg-1) ...  
Setting up qt6-tools-dev-tools (6.4.2~rc1-2) ...  
Setting up qtcreeator (9.0.2-2) ...  
Processing triggers for mailcap (3.70+nmul) ...  
Processing triggers for desktop-file-utils (0.26-1) ...  
Processing triggers for hicolor-icon-theme (0.17-2) ...  
Processing triggers for gnome-menus (3.36.0-1.1) ...  
Processing triggers for libc-bin (2.36-9+deb12u10) ...  
Processing triggers for systemd (252.38-1~deb12u1) ...  
Processing triggers for man-db (2.11.2-2) ...  
Processing triggers for shared-mime-info (2.2-1) ...  
zacha@capstoneadmin: $ sudo apt install qttools5-dev-tools  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
The following package was automatically installed and is no longer required:  
  linux-image-6.1.0-35-amd64  
Use 'sudo apt autoremove' to remove it.  
The following additional packages will be installed:  
  libqt5designercomponents5 libqt5positioning5 libqt5quickwidgets5 libqt5sensors5 libqt5webchannel5 libqt5webkit5 qdoc-qt5 qhelpgenerator-qt5  
  qt5-assistant qtattributionsscanner-qt5 qtchooser  
Suggested packages:  
  qt5-doc  
The following NEW packages will be installed:  
  libqt5designercomponents5 libqt5positioning5 libqt5quickwidgets5 libqt5sensors5 libqt5webchannel5 libqt5webkit5 qdoc-qt5 qhelpgenerator-qt5  
  qt5-assistant qtattributionsscanner-qt5 qtchooser qttools5-dev-tools  
0 upgraded, 12 newly installed, 0 to remove and 0 not upgraded.  
Need to get 15.1 MB of archives.  
After this operation, 60.0 MB of additional disk space will be used.  
Do you want to continue? [Y/n]
```

QtTools5-dev-tools completion download

```
zacha@capstoneadmin: ~  
Unpacking qhelpgenerator-qt5 (5.15.8-2) ...  
Selecting previously unselected package qt5-assistant.  
Preparing to unpack .../09-qt5-assistant_5.15.8-2_amd64.deb ...  
Unpacking qt5-assistant (5.15.8-2) ...  
Selecting previously unselected package qtattributionsscanner-qt5.  
Preparing to unpack .../10-qtattributionsscanner-qt5_5.15.8-2_amd64.deb ...  
Unpacking qtattributionsscanner-qt5 (5.15.8-2) ...  
Selecting previously unselected package qttools5-dev-tools.  
Preparing to unpack .../11-qttools5-dev-tools_5.15.8-2_amd64.deb ...  
Unpacking qttools5-dev-tools (5.15.8-2) ...  
Setting up libqt5positioning5:amd64 (5.15.8+dfsg-3+deb12u1) ...  
Setting up libqt5designercomponents5:amd64 (5.15.8-2) ...  
Setting up libqt5quickwidgets5:amd64 (5.15.8+dfsg-3) ...  
Setting up libqt5webchannel5:amd64 (5.15.8-2) ...  
Setting up libqt5sensors5:amd64 (5.15.8-2) ...  
Setting up qtchooser (66-2) ...  
Setting up qdoc-qt5 (5.15.8-2) ...  
Setting up qhelpgenerator-qt5 (5.15.8-2) ...  
Setting up libqt5webkit5:amd64 (5.212.0~alpha4-30) ...  
Setting up qtattributionsscanner-qt5 (5.15.8-2) ...  
Setting up qt5-assistant (5.15.8-2) ...  
Setting up qttools5-dev-tools (5.15.8-2) ...  
Processing triggers for desktop-file-utils (0.26-1) ...  
Processing triggers for hicolor-icon-theme (0.17-2) ...  
Processing triggers for gnome-menus (3.36.0-1.1) ...  
Processing triggers for libc-bin (2.36-9+deb12u10) ...  
Processing triggers for man-db (2.11.2-2) ...  
Processing triggers for mailcap (3.70+nmul1) ...  
zacha@capstoneadmin: $
```

PyQT fully downloaded



Consult <https://www.youtube.com/watch?v=gOf7-7iRzYM> for help installing PyQT