Linux Introduction

Why Use Linux?

Windows ROS2 Install

- Use Windows 10
- Install Chocolatey
- Install Python
- Install Visual C++ Redistributables
- Install OpenSSL
- Install Visual Studio 2019
- Install OpenCV
- Install Chocolatey and Python dependencies
- Install RQt dependencies
  - Install PyQt5
  - Install QT
- Install Graphviz

Linux ROS2 Install

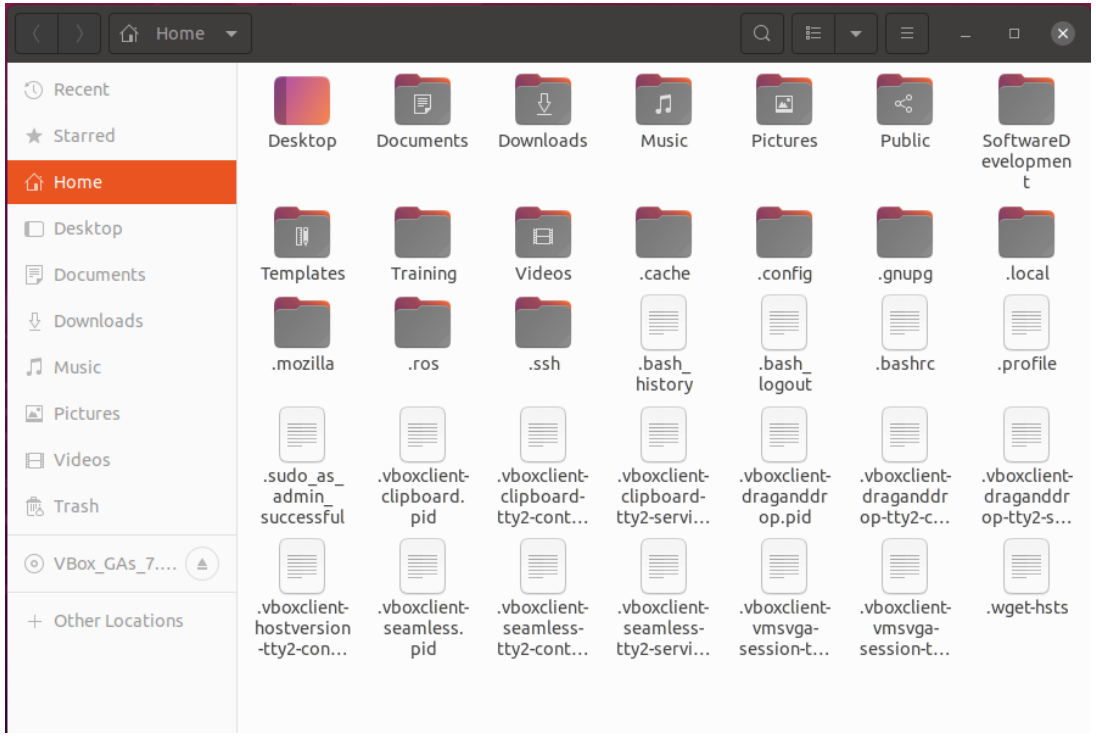
- Enter commands in terminal

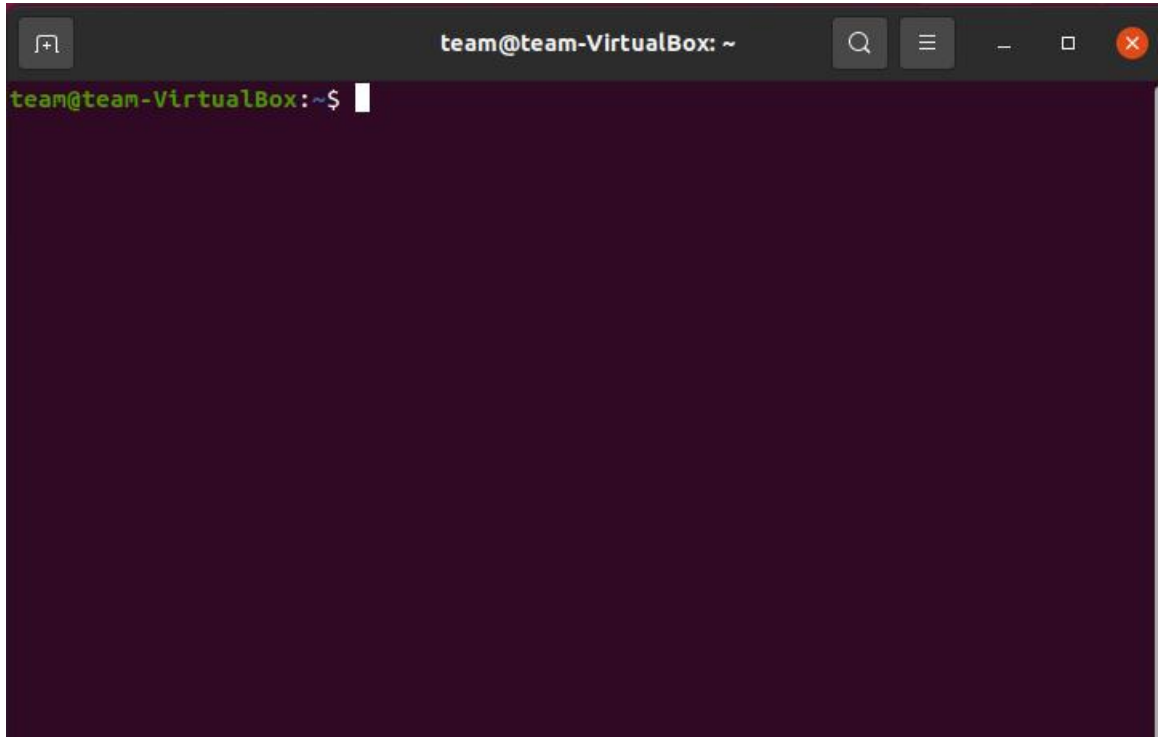
Why Use Linux?

- Most embedded processors run some form of Linux
  - RoboRIO, Jetson Nano, Raspberry Pi, etc.
- When robots are in arenas, you might not have access to the device
- Need to have the skills necessary to fix the issues

Command Line Interface (CLI)

- User interface that uses commands instead of graphic user interface navigated with a mouse





Useful Linux Commands

- cd
  - Used for changing the current working directory
  - Syntax

    cd folderToNavigateTo/subfolderToNavigateTo
- ls
  - Used to display the contents of a folder
  - Syntax:

    ls

    Use -a to show hidden files
- mkdir
  - Used to create a new folder
  - Syntax

    mkdir newFolderName

Useful Linux Commands

- touch
  - Used to create new files
  - Syntax

    touch newFile.file_extension
- vi
  - Used to open the Vim file editor
  - Syntax:

    vi fileToEdit.txt
- nano
  - Used to open the nano file editor
  - Syntax:

    nano fileToEdit.txt

Useful Linux Commands

- cat
  - Used to view the contents of a file
  - Syntax:

    cat fileToView.txt

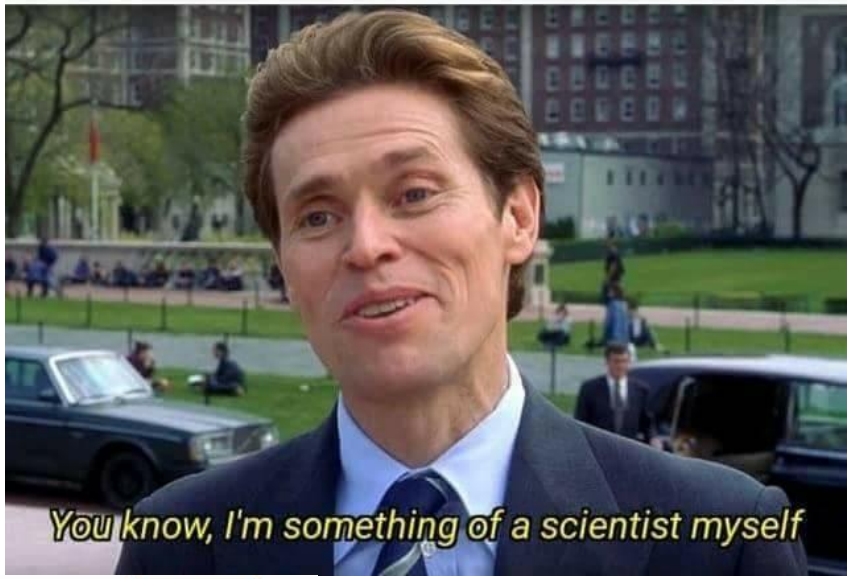
    Use the –n flag to view line numbers
- rm
  - Used to remove files and directories
  - Syntax:

    rm fileToRemove.txt

    rm –r DirectoryToRemove

    Must use –r to remove directories

Useful Linux Commands



ARKANSAS RAZORBOTZ

UNIVERSITY OF ARKANSAS
College of Engineering
Computer Science & Computer Engineering

Useful Linux Commands

- vi commands
  - To type commands in vi, press ESC to enter the command terminal
  - :q
    - Exits Vim
  - :w
    - Writes the changes to the file
  - :wq
    - Writes the changes, then exits Vim
  - :q!
    - Exits Vim and disregards any changes to the file
  - Move the cursor around using the arrow keys or hjkl
  - To insert text, press i. To stop entering text, press ESC

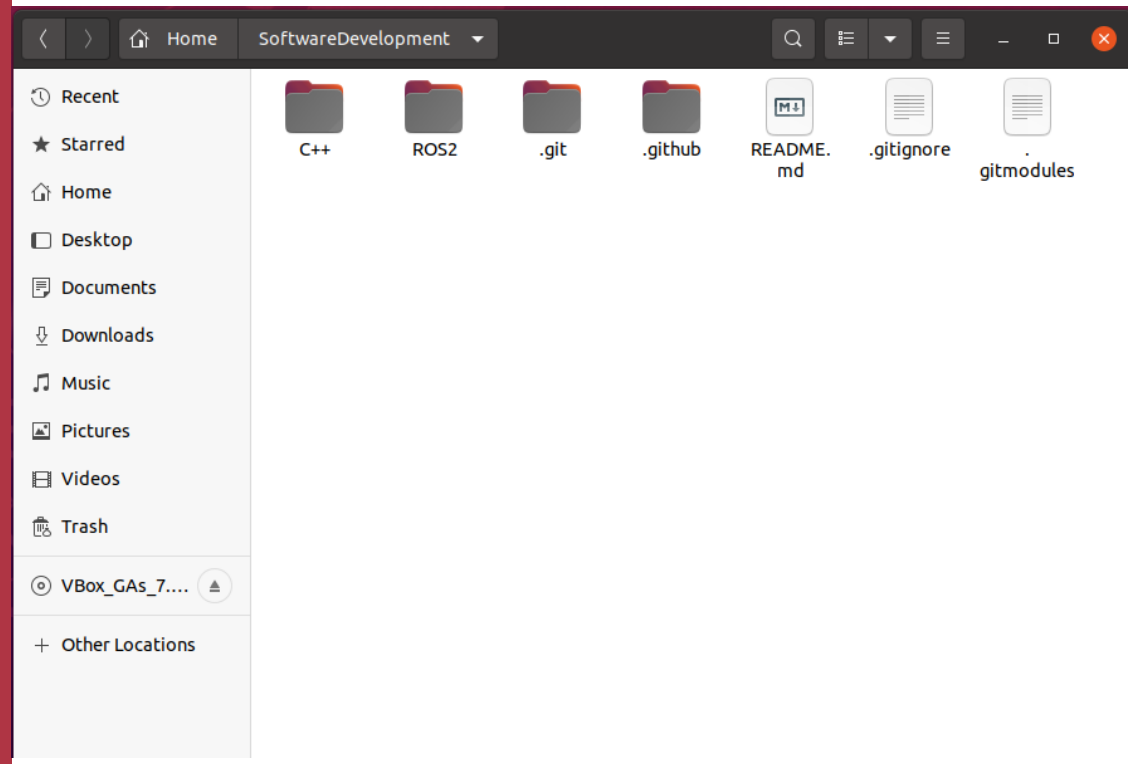
Useful Linux Commands

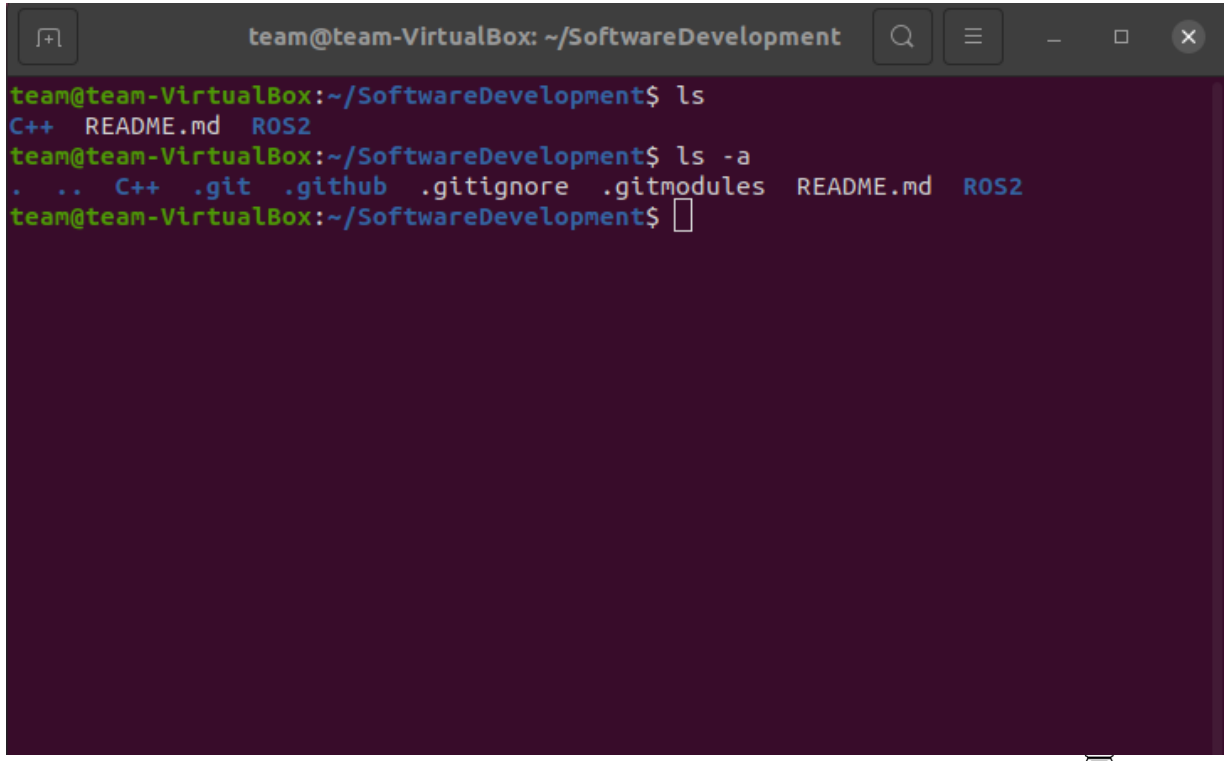
- nano commands
  - ^ (left control) O
    - Used to write the file to the specified output file
  - ^X
    - Close the editor
  - Move the cursor around using the arrow keys

Useful Linux Commands

In folder SoftwareDevelopment

Run ls and ls -a

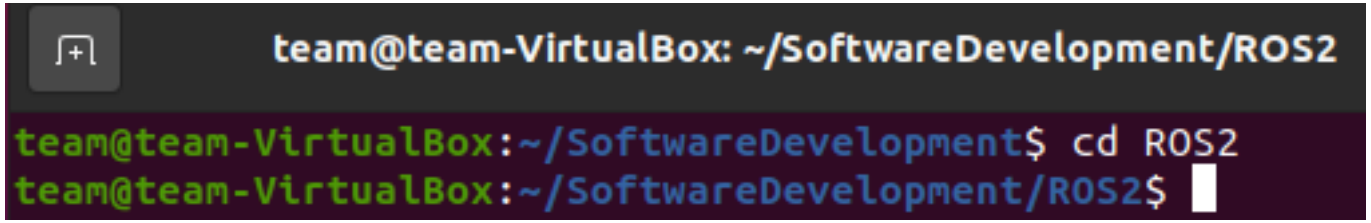




Useful Linux Commands

In folder SoftwareDevelopment

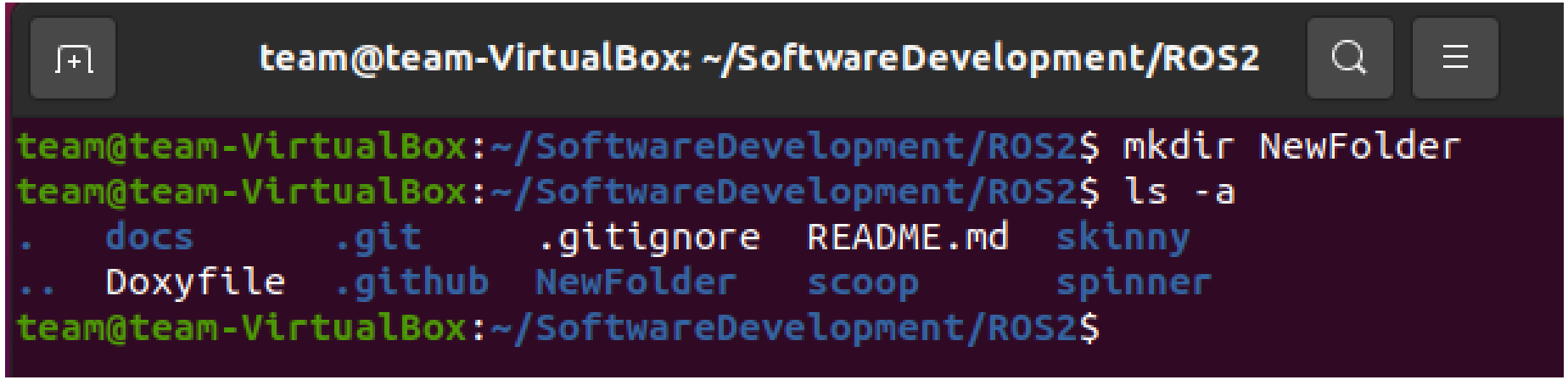
Run cd ROS2



Useful Linux Commands

In folder SoftwareDevelopment\ROS2

Run mkdir NewFolder

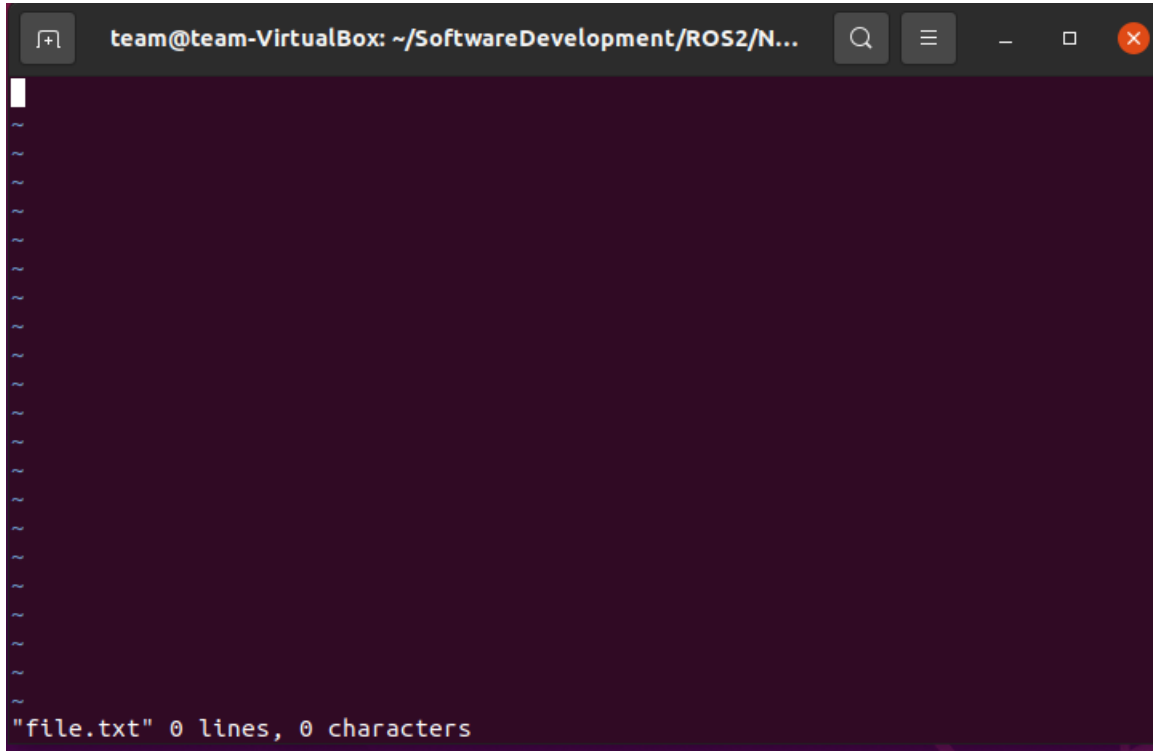


Useful Linux Commands

To create a new text file, run *touch file.txt*

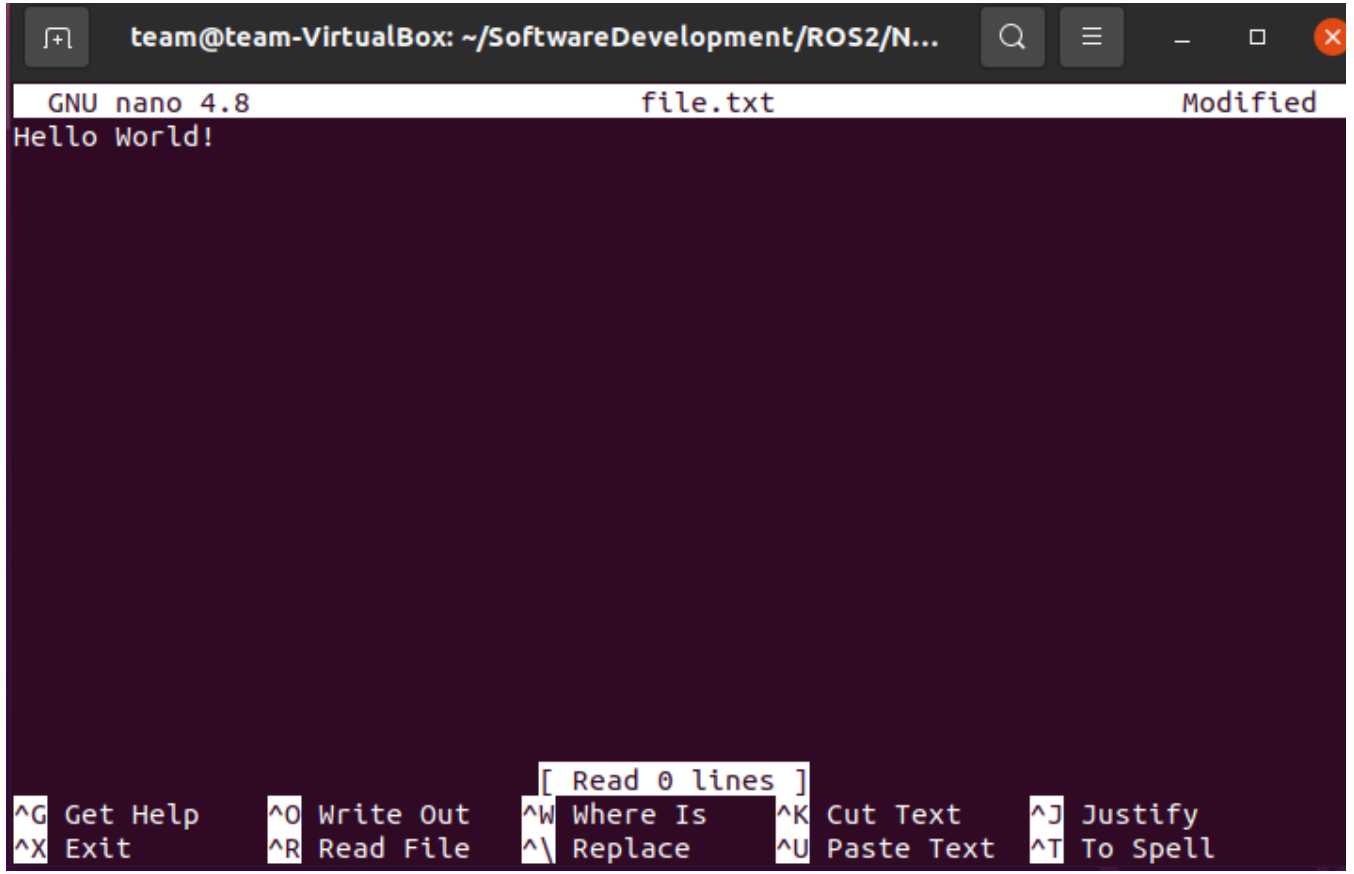
Useful Linux Commands

To open the text file, run *vi file.txt*



Useful Linux Commands

To edit the file using nano, run *nano file.txt*



Useful Linux Commands

To view the contents of a file, run *cat newFile.txt*

```
team@team-VirtualBox:~/SoftwareDevelopment/ROS2/NewFolder$ nano file.txt
team@team-VirtualBox:~/SoftwareDevelopment/ROS2/NewFolder$ cat file.txt
Hello World!
team@team-VirtualBox:~/SoftwareDevelopment/ROS2/NewFolder$
```

Navigate Through Linux Example

Open a terminal

Create a new folder named LinuxExample

Move into the LinuxExample folder

Create a new text file named TestFile.txt

Add your name to TestFile.txt using Vim

View the contents of TestFile.txt

Add Hello World to TestFile.txt using Nano

View the contents of TestFile.txt

Navigate to the parent directory

Remove LinuxExample

Navigate Through Linux Example

Open a terminal

Create a new folder named LinuxExample

```
mkdir LinuxExample
```

Move into the LinuxExample folder

```
cd LinuxExample
```

Create a new text file named TestFile.txt

```
touch TestFile.txt
```

Add your name to TestFile.txt using Vim

```
vi TestFile.txt
```

View the contents of TestFile.txt

```
cat TestFile.txt
```

Add Hello World to TestFile.txt using Nano

```
nano TestFile.txt
```

View the contents of TestFile.txt

```
cat TestFile.txt
```

Navigate to the parent directory

```
cd ..
```

Remove LinuxExample

```
rm –r LinuxExample
```