**Guided Exercise: Developing Applications with Visual Studio Code**

In this exercise, you will use Visual Studio Code (VS Code) to create a simple Node.js application.

**Outcomes**

You should be able to:

* Download and install Node.js.
* Download and install VS Code.
* Create a workspace in VS Code.
* Add a project folder to a VS Code workspace.

To perform this exercise, ensure that you have access to a Linux (Debian or Fedora-based), macOS, or Windows system, including the required permissions to install software on that system.

**Procedure 1.1. Steps**

1. Download and install Node.js.
   1. Windows Installation.
      * In a browser, go to <https://nodejs.org/en/download>. Click Windows Installer to download the Node.js installer for Windows. Click Save File to launch a file window. Click Save in the file window to accept the default filename and location for the file.
      * Navigate to the downloaded file and open it to display a Setup Wizard window. Click Next on the Welcome screen to begin installation.
      * Check I accept the terms in the License Agreement and then click Next.
      * Click Next to accept the default installation location.
      * Click Next to accept the default settings on the Custom Setup screen.
      * Click Next to skip the installation of tools you must use to compile native modules.
      * Click Install to begin installation. Click Yes to allow the application to make changes to your system. Wait for the installation to finish.
      * Click Finish to exit the Setup Wizard.
   2. Linux Installation.
      * Open a new command line terminal.
      * To install Node.js on Ubuntu and Debian systems, use the following command:

yourname@yourhost:~$ sudo apt install nodejs

The command may ask for your password to install the package.

A later exercise requires the Node Package Manager (NPM). Install the package:

yourname@yourhost:~$ sudo apt install npm

The Ubuntu npm package installs several different software development packages. You can skip this npm installation if you need to minimize the number of packages on your Ubuntu system.

* + - To install Node.js on Fedora and Red Hat Enterprise Linux 8 systems, use the following command:

[yourname@yourhost ~]$ sudo dnf install nodejs

The command may ask for your password to install the package.

* 1. macOS Installation.
     + Navigate to <https://nodejs.org/en/download/> in a web browser.
     + Download the stable long term support (LTS) 64-bit Node.js installer (.pkg) for macOS
     + Run the .pkg installer. In recent versions of macOS (10.14 and higher), software that is installed from sources other than the App Store are blocked by default.

Open System Preferences → Security & Privacy, and in the General tab, click Open anyway to continue. Relaunch the Node.js installer if required.

* + - Click Continue. The installer will install node, the Node.js runtime, and npm, the Node.js package manager to /usr/local/bin.
    - Click Continue in the Software License Agreement window.
    - Click Agree to accept the terms of the license.
    - Finally, click Install to begin the installation. You may be prompted for your macOS password. Enter your macOS password to continue.

1. Download and install VS Code.

**Warning**

This course is designed for VS Code version v1.39, but the instructions that follow show you how to install the newest version of VS Code.

If you wish to match the version of VS Code in this course, go to <https://code.visualstudio.com/updates/v1_39> and follow the installation instructions for your operating system.

* 1. Windows Installation.
     + In a browser on your Windows system, go to <https://code.visualstudio.com/download>
     + Click Windows to download VS Code for Windows.
     + Click Save File to save the file. In the window that displays, click Save to accept the default file name and download location.
     + Navigate to the downloaded file and open it to display the VS Code Setup Wizard. Select I accept the agreement, and then click Next.
     + Click Next to accept the default location for the installation. If the folder already exists, click Yes to install to the folder anyway.
     + Click Next to add a Start Menu folder for VS Code. If you do not need a Start Menu folder for VS Code, then select Don’t create a Start Menu folder before you click Next.
     + Review the list of additional tasks to perform during VS Code installation. Select any tasks you need for your system and then click Next.
     + Click Install to install VS Code.
     + Click Finish to close the Setup Wizard.
  2. Linux Installation.
     + In a browser, navigate to: <https://code.visualstudio.com/download>
     + For Ubuntu and Debian systems, click .deb. For Fedora and Red Hat Enterprise Linux systems, click .rpm.
     + Select Open with, and then select Software Install (default). Click OK.
     + In the installation window, click Install.
     + In the Authentication Required window, enter your password and then click Authenticate.
     + When the installation completes, close the window.
  3. macOS Installation.
     + Navigate to <https://code.visualstudio.com/download> in a web browser.
     + Click the apple icon (Mac) to download the Visual Studio Code zip file.
     + Uncompress the zip file, and then copy the Visual Studio Code executable binary to your Applications folder using the macOS Finder.
     + Double-click the Visual Studio Code binary to start Visual Studio Code.

1. Open VS Code and create a workspace to host your projects.
   1. Open the VS Code application according to your operating system. Click View → Explorer to display the Explorer view.
   2. If you installed and used VS Code on your system previous to this course, then click File → Close Workspace. If File → Close Workspace is not available, then skip this step.

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| https://rol.redhat.com/rol/static/static_file_cache/do101-4.2/devenv/vscode-initial-open-welcome.png |

* 1. Figure 1.3: The VS Code application
  2. Click File → Save Workspace As …​. In the window that displays, navigate to your home directory. Type My Projects as the file name and then click Save. The Explorer view displays a Add Folder button to add project folders to your workspace.

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| https://rol.redhat.com/rol/static/static_file_cache/do101-4.2/devenv/vscode-workspace-my-projects.png |

* 1. Figure 1.4: The VS Code workspace.

1. Create a hello-nodejs project folder, and then add it to your workspace.
   1. In VS Code, click File → Add Folder to Workspace…​. In the window that displays, navigate to your home directory. Create a new folder named hello-nodejs. Click Add to add this new folder to your workspace.

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| https://rol.redhat.com/rol/static/static_file_cache/do101-4.2/devenv/vscode-workspace-new-project.png |

* 1. Figure 1.5: Add a folder to the VS Code workspace.

1. Create a app.js file in the project. Save the file with the following content:
   1. Right-click on hello-nodejs in the workspace, and then select New File. Enter app.js for the file name to launch a VS Code tab for the new file.
   2. Add the text console.log("Hello World!\n"); to the app.js editor tab, and then save the file (File → Save).
2. Right-click on hello-nodejs in the workspace, and then select Open in Terminal to access the hello-nodejs project from the VS Code integrated terminal.

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1. Figure 1.6: Open a project folder in the VS Code integrated terminal.
2. In the integrated terminal, execute node app.js to test your sample code and your Node.js installation.

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| https://rol.redhat.com/rol/static/static_file_cache/do101-4.2/devenv/vscode-terminal-app-js.png |

1. Figure 1.7: Execute a Node.js application in the VS Code intergrated terminal.
2. To clean up your work, click the Kill Terminal icon to close the integrated terminal window.

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| https://rol.redhat.com/rol/static/static_file_cache/do101-4.2/devenv/vscode-close-terminal-windows.png |

1. Figure 1.8: Closing the integrated terminal window in VS Code.

This concludes the guided exercise.