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# Introduction to OpenShift Applications

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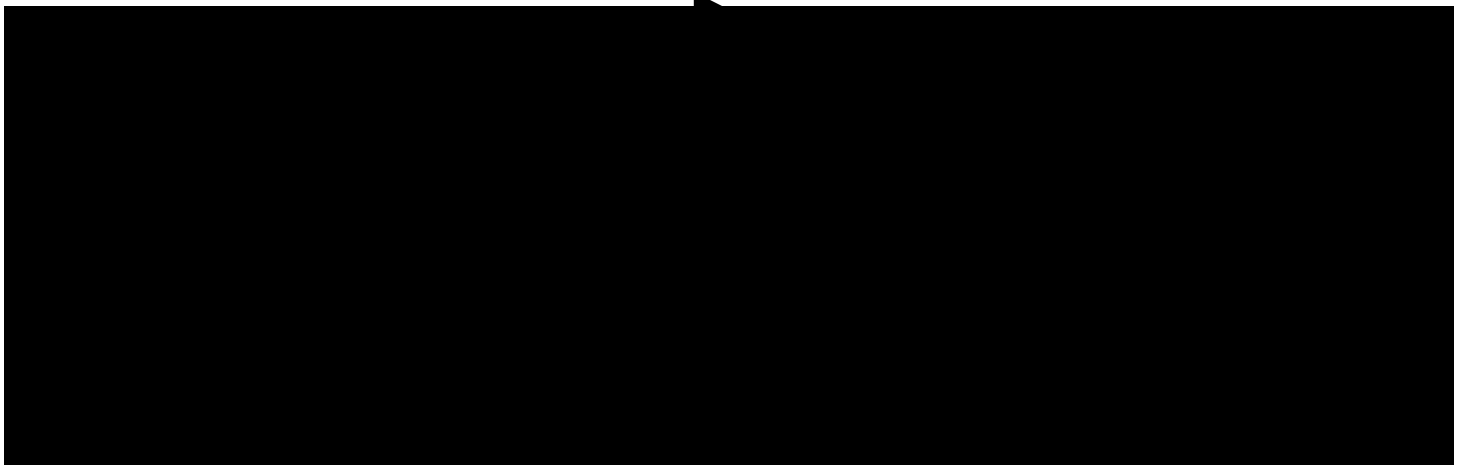


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(/rol/app/courses/do101-4.2/pages/ch01s17)	(/rol/app/courses/do101-4.2/pages/ch01s18)	(/rol/app/courses/do101-4.2/pages/ch01s19)	(/rol/app/courses/do101-4.2/pages/ch01s20)	(/rol/app/courses/do101-4.2/pages/ch01s21)
(/rol/app/courses/do101-4.2/pages/ch01s22)	(/rol/app/courses/do101-4.2/pages/ch01s23)	(/rol/app/courses/do101-4.2/pages/ch01s24)	(/rol/app/courses/do101-4.2/pages/ch01s25)	(/rol/app/courses/do101-4.2/pages/ch01s26)
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(/rol/app/courses/do101-4.2/pages/ch01s72)	(/rol/app/courses/do101-4.2/pages/ch01s73)	(/rol/app/courses/do101-4.2/pages/ch01s74)	(/rol/app/courses/do101-4.2/pages/ch01s75)	(/rol/app/courses/do101-4.2/pages/ch01s76)
(/rol/app/courses/do101-4.2/pages/ch01s77)	(/rol/app/courses/do101-4.2/pages/ch01s78)	(/rol/app/courses/do101-4.2/pages/ch01s79)	(/rol/app/courses/do101-4.2/pages/ch01s80)	(/rol/app/courses/do101-4.2/pages/ch01s81)
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→ NEXT (/ROL/APP/COURSES/DO101-4.2/PAGES/CH01S03)

## 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.

##### 1.1. Windows Installation.

- In a browser, go to <https://nodejs.org/en/download> (<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.

##### 1.2. 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.

### 1.3. macOS Installation.

- Navigate to <https://nodejs.org/en/download/> (<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.

## 2. 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](https://code.visualstudio.com/updates/v1_39) ([https://code.visualstudio.com/updates/v1\\_39](https://code.visualstudio.com/updates/v1_39)) and follow the installation instructions for your operating system.

### 2.1. Windows Installation.

- In a browser on your Windows system, go to <https://code.visualstudio.com/download> (<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.

### 2.2. Linux Installation.

- In a browser, navigate to: <https://code.visualstudio.com/download> (<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.

### 2.3. macOS Installation.

- Navigate to <https://code.visualstudio.com/download> (<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.

### 3. Open VS Code and create a workspace to host your projects.

- 3.1. Open the VS Code application according to your operating system. Click **View** → **Explorer** to display the Explorer view.
- 3.2. 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.

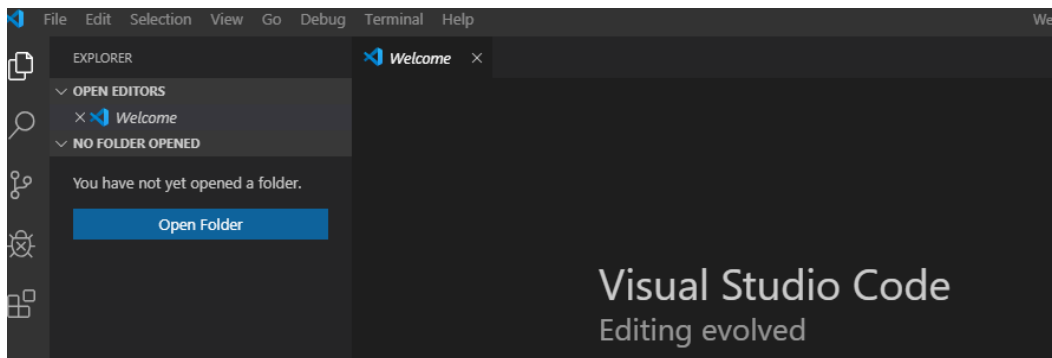


Figure 1.3: The VS Code application

- 3.3. 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.

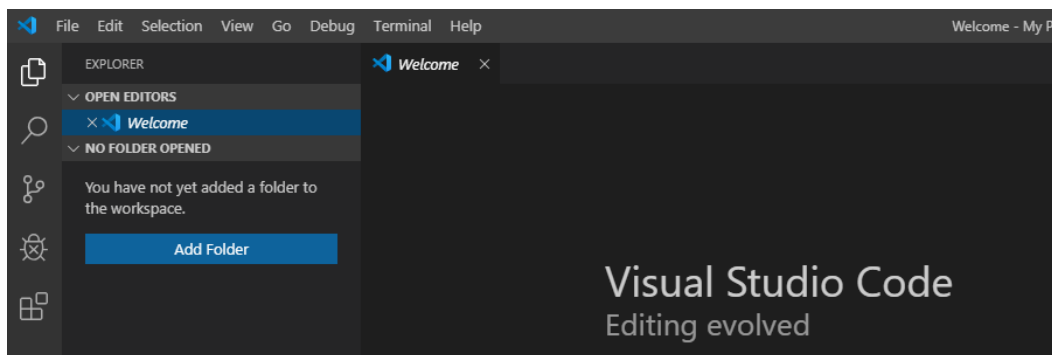


Figure 1.4: The VS Code workspace.

### 4. Create a `hello-nodejs` project folder, and then add it to your workspace.

- 4.1. 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.

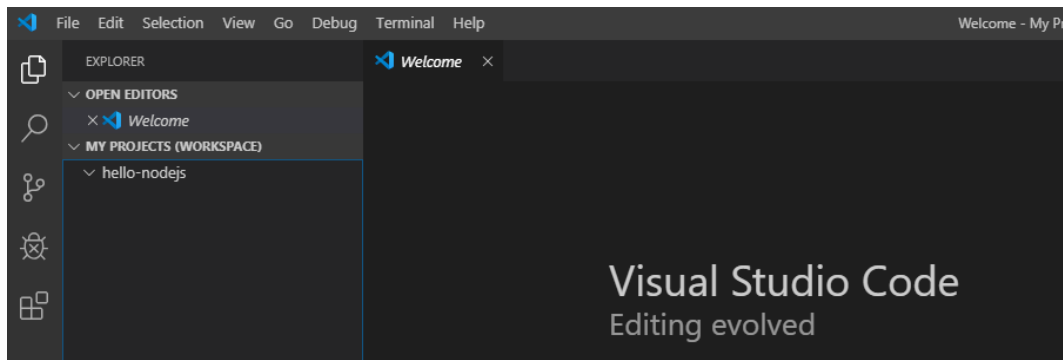


Figure 1.5: Add a folder to the VS Code workspace.

5. Create a `app.js` file in the project. Save the file with the following content:

- 5.1. 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.
- 5.2. Add the text `console.log("Hello World!\n");` to the `app.js` editor tab, and then save the file (**File** → **Save**).

**SHOW SOLUTION**

6. 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.

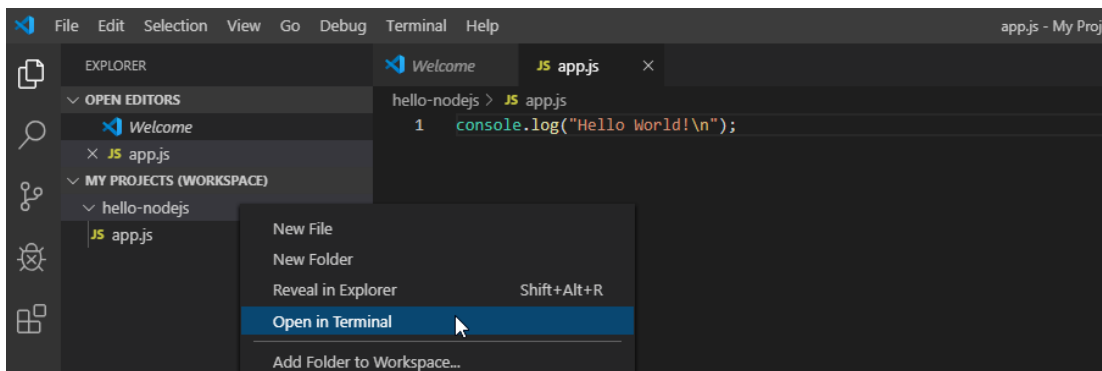


Figure 1.6: Open a project folder in the VS Code integrated terminal.

7. In the integrated terminal, execute `node app.js` to test your sample code and your Node.js installation.

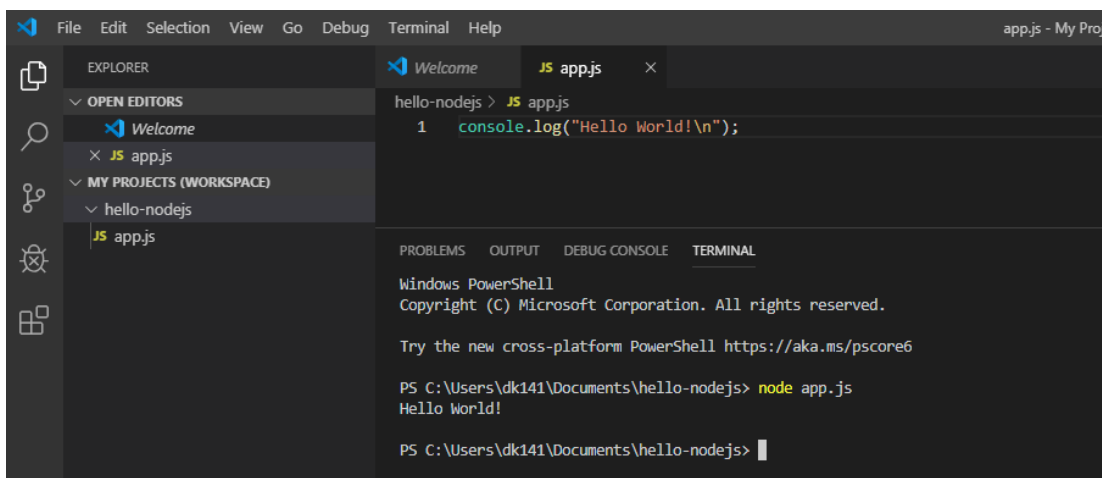


Figure 1.7: Execute a Node.js application in the VS Code integrated terminal.

8. To clean up your work, click the **Kill Terminal** icon to close the integrated terminal window.

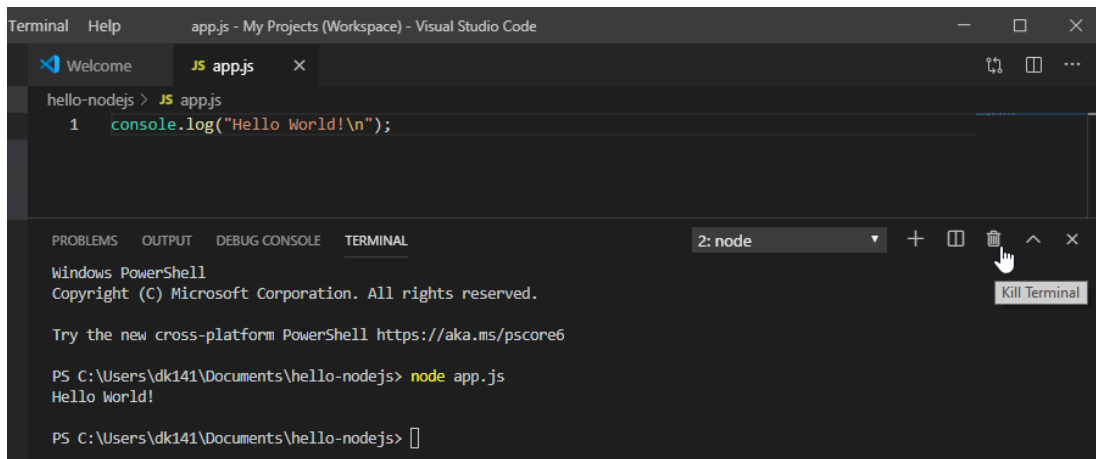


Figure 1.8: Closing the integrated terminal window in VS Code.

This concludes the guided exercise.

← [PREVIOUS \(/ROL/APP/COURSES/DO101-4.2/PAGES/CH01\)](/rol/app/courses/do101-4.2/pages/ch01)

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