

Environment Setup for Windows

CS 10A – GETTING STARTED: WINDOWS

Environment Setup – Windows (1/5)

Install Cygwin. Go to this [page](#) to get the download files.

Make sure you install the correct one based on your system type (32 or 64 bits)



The screenshot shows the Cygwin website with a navigation menu on the left and main content on the right. The navigation menu includes links for Cygwin, Cygwin/X, Community, Documentation, Contributing, and Related Sites. The main content features the Cygwin logo, a tagline, and sections for installing and updating packages for 64-bit and 32-bit Windows, along with general installation notes.

Cygwin
Get that [Linux](#) feeling - on Windows

Installing and Updating Cygwin Packages

Installing and Updating Cygwin for 64-bit versions of Windows

Run [setup-x86_64.exe](#) any time you want to update or install a Cygwin package for 64-bit windows. The [signature](#) for [setup-x86_64.exe](#) can be used to verify the validity of this binary using [this](#) public key.

Installing and Updating Cygwin for 32-bit versions of Windows

Run [setup-x86.exe](#) any time you want to update or install a Cygwin package for 32-bit windows. The [signature](#) for [setup-x86.exe](#) can be used to verify the validity of this binary using [this](#) public key.

General installation notes

When installing packages for the first time, `setup*.exe` *does not install every package*. Only the **minimal base packages** from the Cygwin distribution are installed by default, which takes up about 100 MB.

Clicking on categories and packages in the `setup*.exe` package installation screen allows you to select what is installed or updated.

Individual packages like `bash`, `gcc`, `less`, etc. are released independently of the Cygwin DLL, so the Cygwin DLL version is not useful as a general Cygwin release number. The `setup*.exe` utility tracks the versions of all installed components and provides the mechanism for **installing** or **updating** everything available from this site for Cygwin.

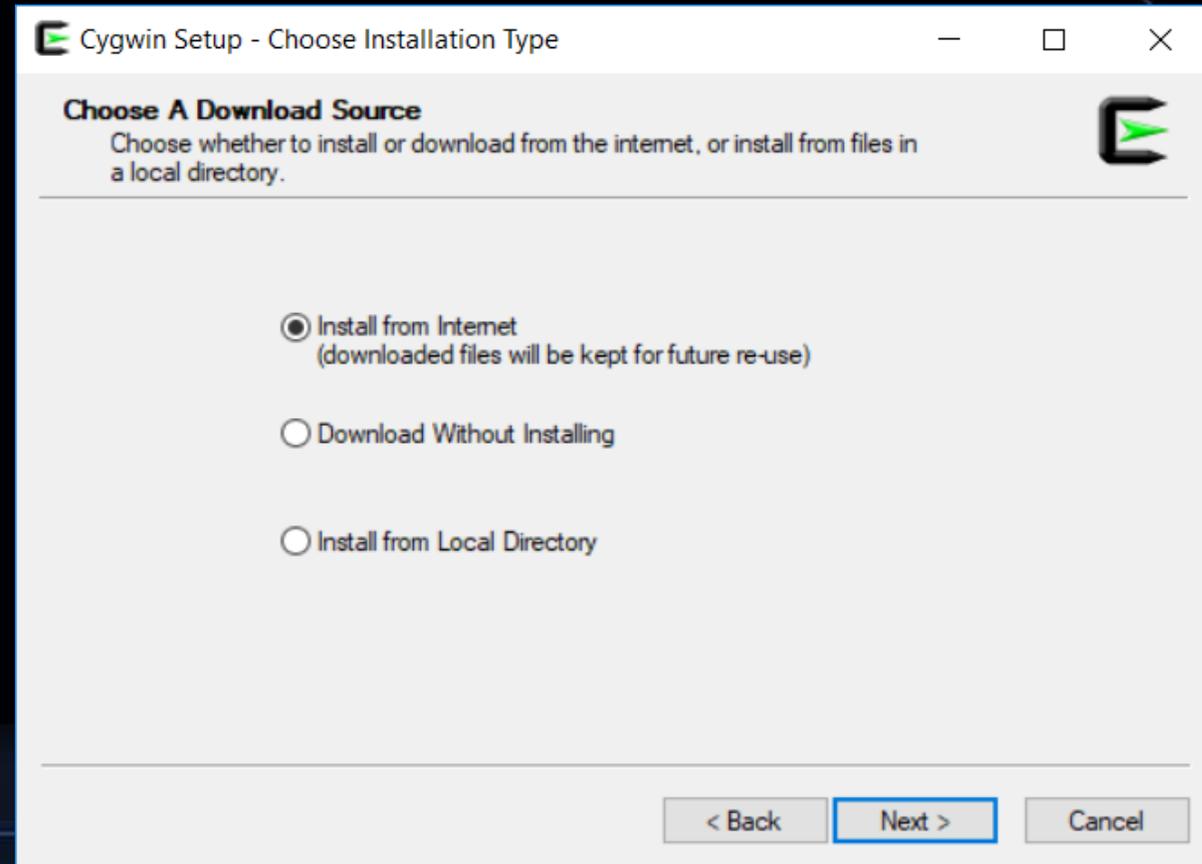
Once you've installed your desired subset of the Cygwin distribution, `setup*.exe` will remember what you selected so rerunning the program will update your system with any new package releases.

On Windows Vista and later, `setup*.exe` will check by default if it runs with administrative privileges and, if not, will try to elevate the process. If you want to avoid this behaviour and install under an unprivileged account just for your own usage, run `setup*.exe` with the `--no-admin` option.

Environment Setup – Windows (2/5)

Run the EXE file.
Click Next until you
hit the following
screen.

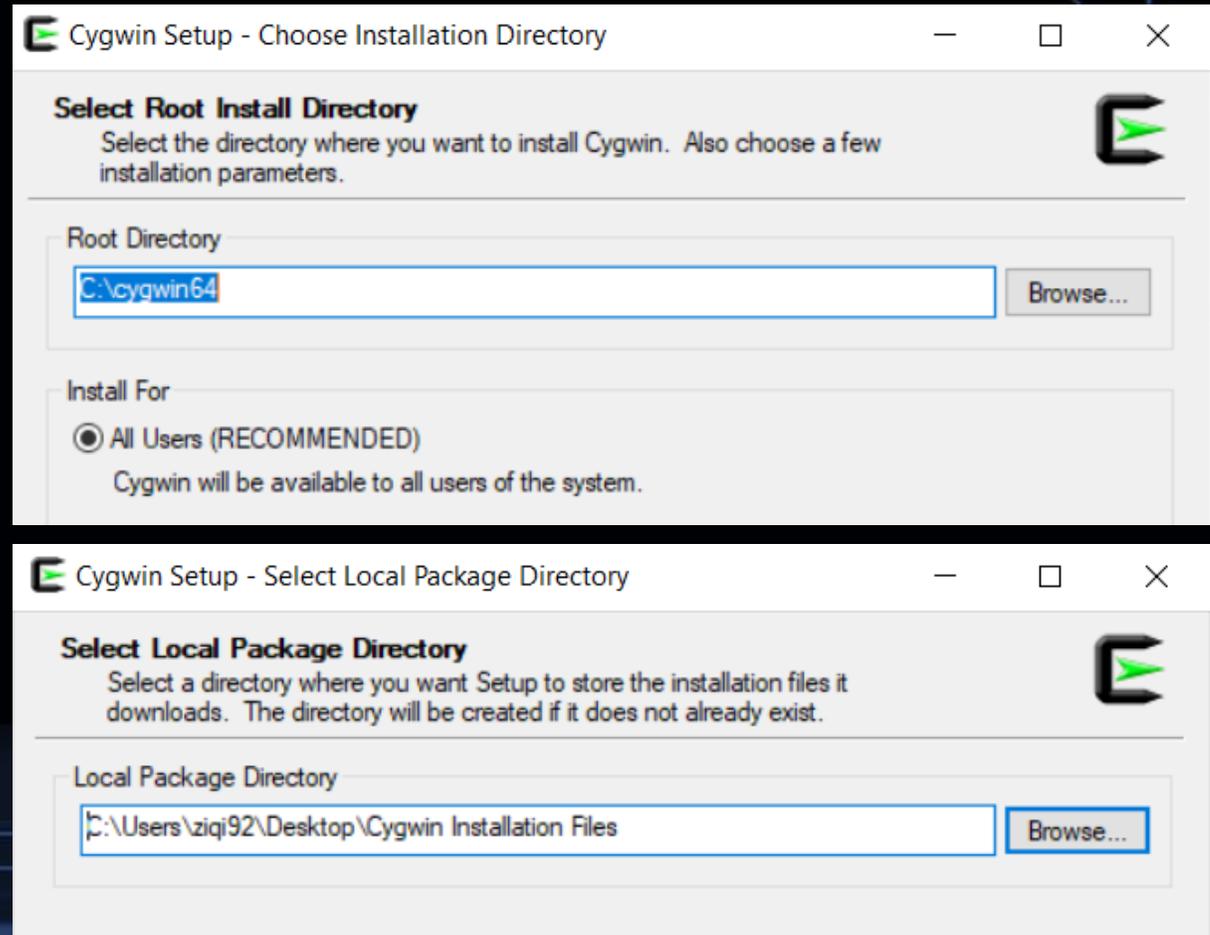
Select Install from
Internet and click
Next.



Environment Setup – Windows (3/5)

Leave the default settings when you select the Root Install Directory

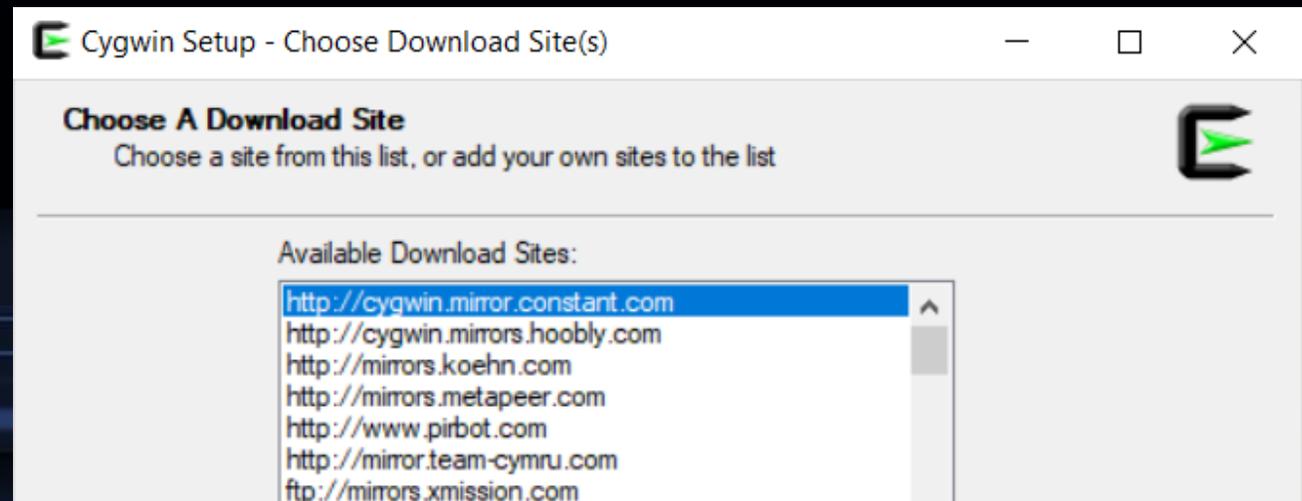
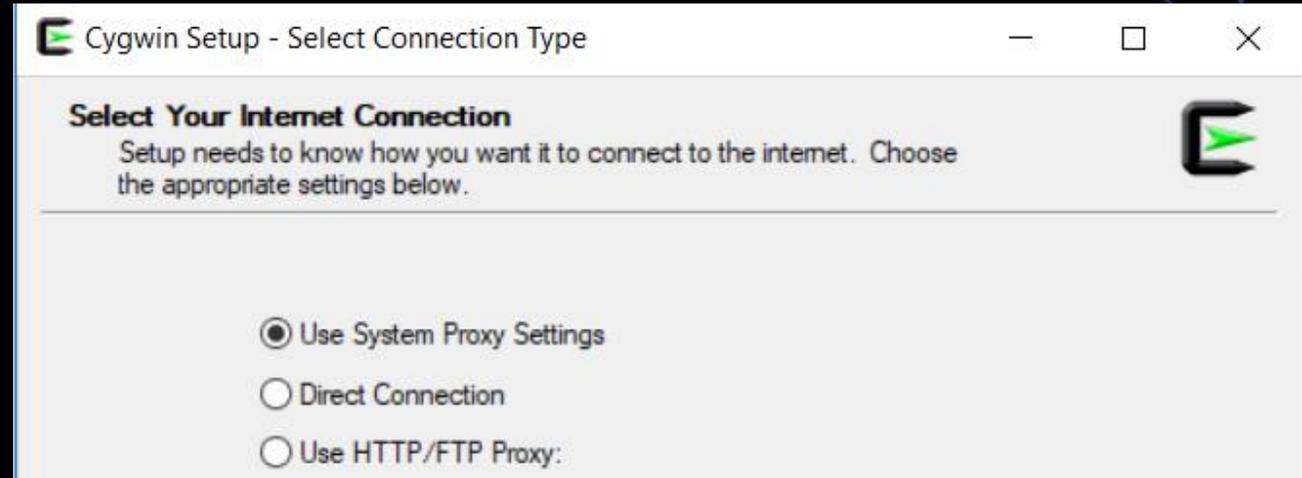
Create a folder anywhere on your PC to store your Cygwin features installation files.



Environment Setup – Windows (4/5)

On the following page, select “Use System Proxy Settings” and click Next.

Select any one of the websites to download from. They’re all the same.



Environment Setup – Windows (5/5)

Click Next and after a few seconds, you should see the following screen. Click on the + next to “All” to see the full drop down list.

To select a feature to install, click on the New column for a given item and change “Skip” to a version number. Install the bin files of the following:

Devel > gcc-core [latest version]

Devel > gcc-g++ [latest version]

Editors > gvim [latest version]

Editors > vim [latest version]

Editors > vim-clang-format [latest version]

Additional bin files will be selected by default. Leave those as is.

Cygwin Setup - Select Packages

Select packages to install

View Category Search gcc Clear

Package	Current	New	Bin?	Src?	Categories	Size	Description
All		Default					
Debug (5)		Default					
Devel (30)		Default					
colorgcc		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel, Perl	14k	Colorizer for GCC warning/error messages
cygwin32-gcc-core		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	16,464k	GCC for Cygwin 32bit toolchain (C, OpenMP)
cygwin32-gcc-fortran		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	7,014k	GCC for Cygwin 32bit toolchain (Fortran)
cygwin32-gcc-g++		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	10,456k	GCC for Cygwin 32bit toolchain (C++)
djgpp-gcc-ada		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	13,501k	GCC for DJGPP toolchain (Ada)
djgpp-gcc-core		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	7,926k	GCC for DJGPP toolchain (C)
djgpp-gcc-fortran		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	6,296k	GCC for DJGPP toolchain (Fortran)
djgpp-gcc-g++		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	8,279k	GCC for DJGPP toolchain (C++)
djgpp-gcc-objc		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	5,087k	GCC for DJGPP toolchain (Objective-C)
djgpp-gcc-objc++		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	5,349k	GCC for DJGPP toolchain (Objective-C++)
gcc-ada		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	18,851k	GNU Compiler Collection (Ada)
gcc-cilkplus		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	279k	GNU Compiler Collection (Cilk Plus)
gcc-core		7.3.0-3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Devel	18,708k	GNU Compiler Collection (C, OpenMP)
gcc-fortran		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	7,972k	GNU Compiler Collection (Fortran)
gcc-g++		7.3.0-3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Devel	12,090k	GNU Compiler Collection (C++)
gcc-objc		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	6,054k	GNU Compiler Collection (Objective-C)
gcc-objc++		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	6,329k	GNU Compiler Collection (Objective-C++)
gcc-tools-epoch1-autocconf		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	425k	(gcc-special) automatic configure script builder
gcc-tools-epoch1-automake		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	419k	(gcc-special) a tool for generating GNU-compliant Makefiles
gcc-tools-epoch2-autocconf		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	712k	(gcc-special) automatic configure script builder
gcc-tools-epoch2-automake		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	589k	(gcc-special) a tool for generating GNU-compliant Makefiles
gcmakedef		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	6k	X Makefile dependency tool for GCC
mingw64-686-gcc-core		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	14,476k	GCC for Win32 (686-w64-mingw32) toolchain (C, OpenMP)
mingw64-686-gcc-fortran		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	6,986k	GCC for Win32 (686-w64-mingw32) toolchain (Fortran)
mingw64-686-gcc-g++		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	10,525k	GCC for Win32 (686-w64-mingw32) toolchain (C++)
mingw64-686-gcc-objc		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	11,703k	GCC for Win32 (686-w64-mingw32) toolchain (Objective-C.C++)
mingw64-x86_64-gcc-core		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	14,921k	GCC for Win64 toolchain (C, OpenMP)
mingw64-x86_64-gcc-fortran		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	7,222k	GCC for Win64 toolchain (Fortran)
mingw64-x86_64-gcc-g++		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	10,879k	GCC for Win64 toolchain (C++)
mingw64-x86_64-gcc-objc		Skip	<input type="checkbox"/>	<input type="checkbox"/>	Devel	11,854k	GCC for Win64 toolchain (Objective-C.C++)
Libs (2)		Default					
Perl (1)		Default					

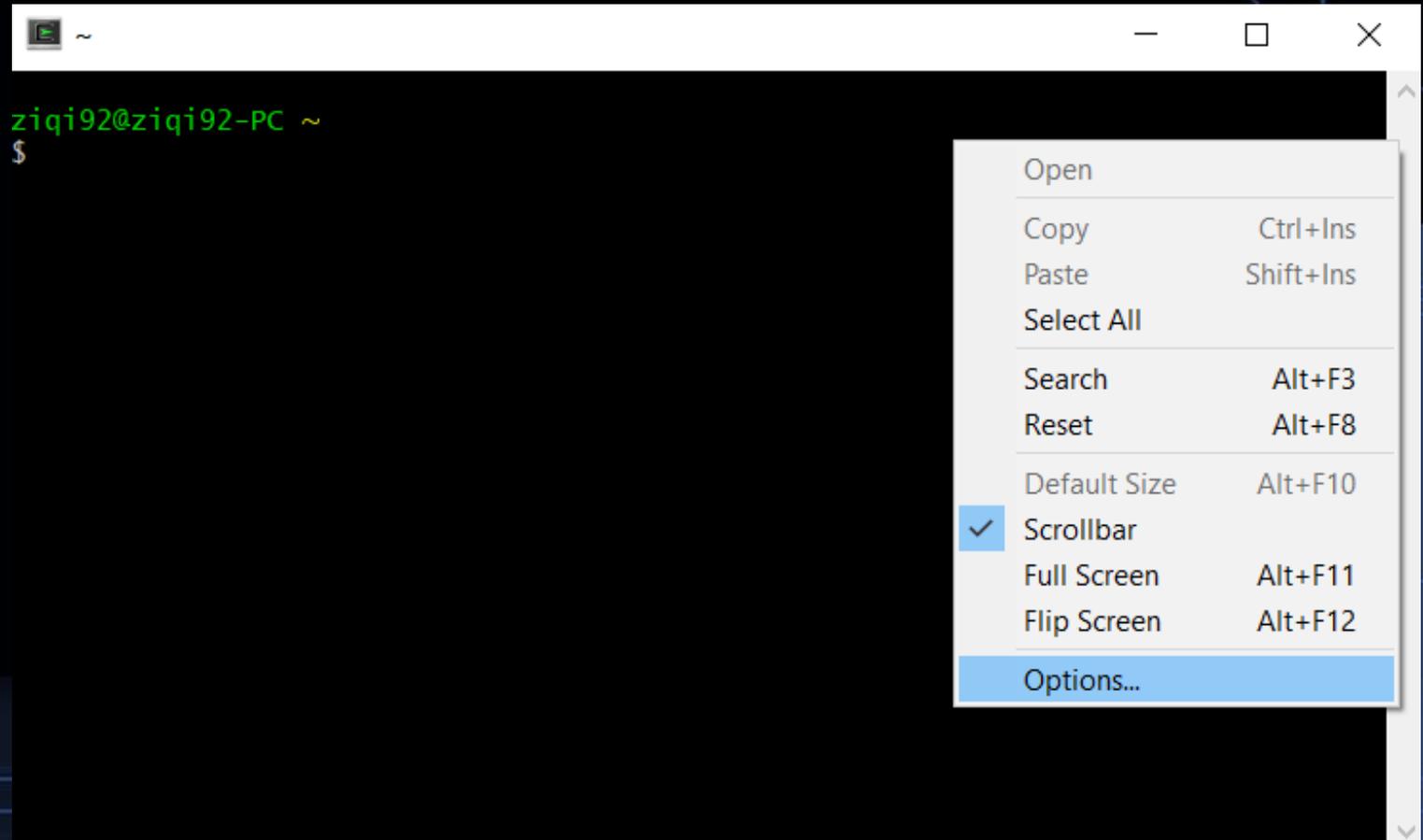
Hide obsolete packages

Adjusting Cygwin Display Preferences

Cygwin is a Linux Terminal shell for Windows. It's meant to mimic the Terminal application you'd find on a MacOS computer. It's an old way of navigating computers and their files.

Open the program by clicking on the Cygwin Terminal icon and you'll get a window similar to what's shown on the right.

Right click anywhere > Options for custom display options. Though I recommend the default, play around with it and see what best suits you.



Accessing Cygwin Files through Windows File Explorer

After everything is installed, Cygwin will automatically create a home directory where the root install is stored. You can identify the location (to some extent) with the `pwd` command.

If you stuck with the default root install directory, then all of your Cygwin files will be stored within something like

`C:\cygwin64\home\username`

It is recommended that you create a shortcut to this folder for easy access. (Right click on folder > Create Shortcut)

The image shows a Windows File Explorer window and a Cygwin terminal window. The File Explorer window displays the contents of the `home` directory for user `zqiq92`. The terminal window shows the `pwd` command being executed, returning `/home/zqiq92`, and the `ls -a` command being executed, listing the files and folders in the current directory.

Name	Date modified	Type
TestFolder	12/27/2018 3:35 PM	File folder
.bash_history	12/27/2018 12:52 ...	BASH_H
.bash_profile	12/26/2018 8:07 PM	BASH_PF
.bashrc	12/26/2018 8:07 PM	BASHRC
.inputrc	12/26/2018 8:07 PM	INPUTRC
.profile	12/26/2018 8:07 PM	PROFILE
.viminfo	12/27/2018 3:35 PM	VIMINFO

```
zqiq92@zqiq92-PC ~  
$ pwd  
/home/zqiq92  
zqiq92@zqiq92-PC ~  
$ ls -a  
. .bash_history .bashrc .profile TestFolder  
.. .bash_profile .inputrc .viminfo  
zqiq92@zqiq92-PC ~  
$ |
```