

File systems: A brief overview

Why discuss file systems?

Understanding where your data lives and what type of data it is

Modern operating systems obscure or hide important information about files, folders, and their structure

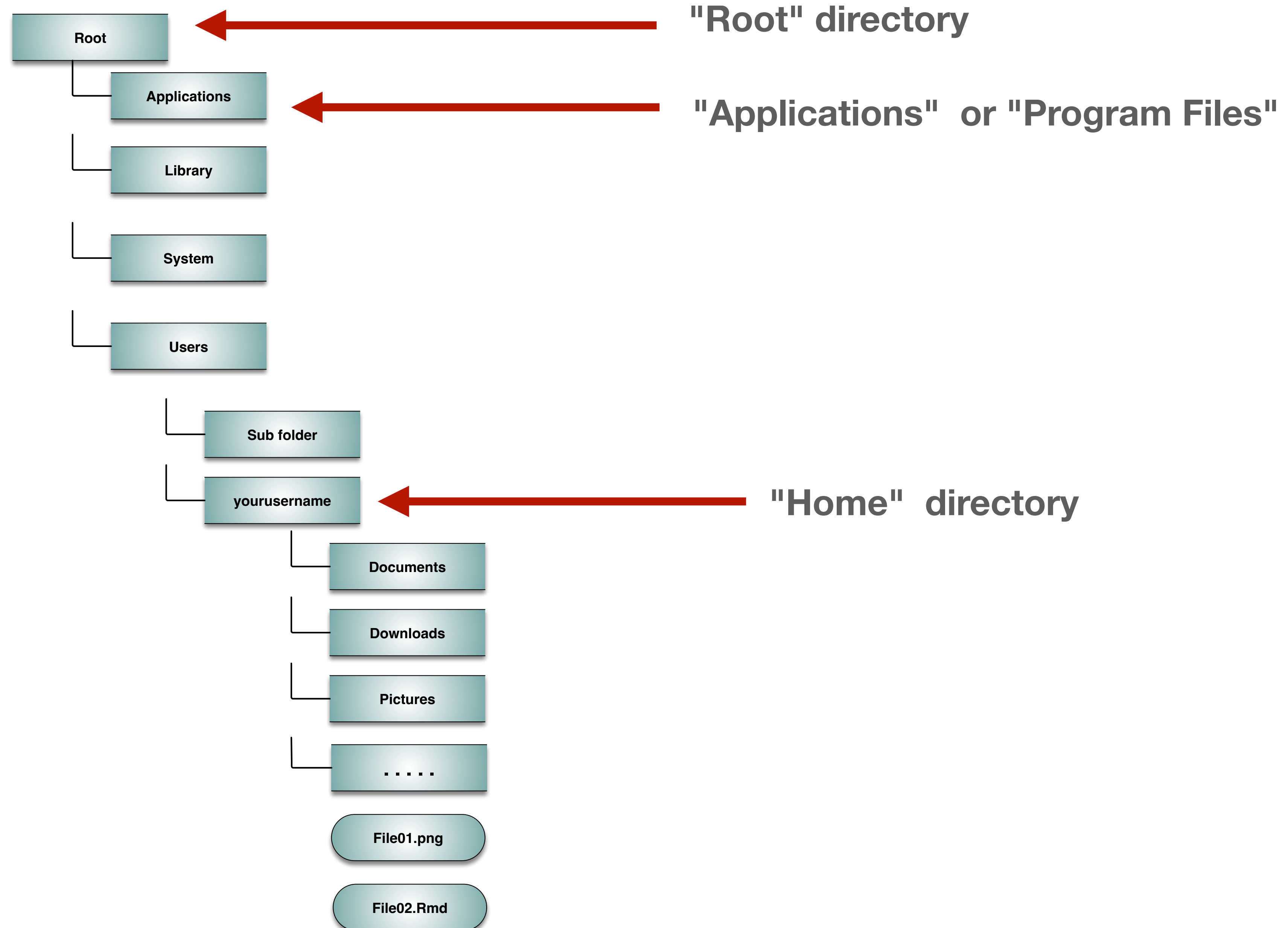
Access

Most of the tools we will use in this course, and that you will use in your research careers, assume you know the conventions for specifying file paths for the data you are analyzing

Data backup

Knowing where your data lives, and the form it is stored in, is critical for data backup and retention

Heirarchical file systems

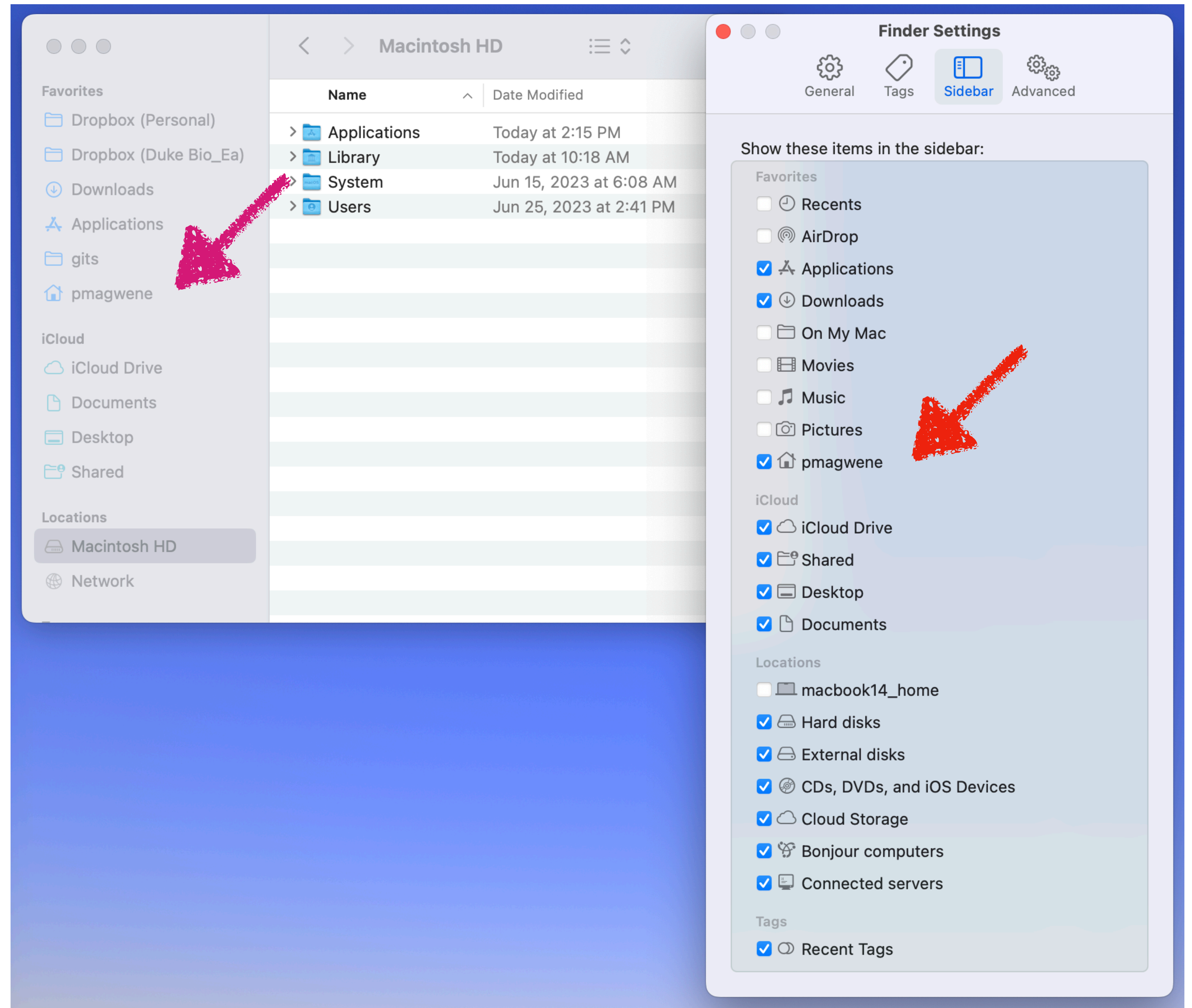


MacOS and Windows File System Conventions

	MacOS	Windows
Root directory	/	C:\
Applications directory	/Applications	C:\Program Files C:\Program Files (x86)
User (home) directory	/Users/yourusername	c:\Users\yourusername
Desktop, Downloads, Documents	Live in home directory	Live in home directory

Usability recommendation: Show your user directory in the sidebar of Finder

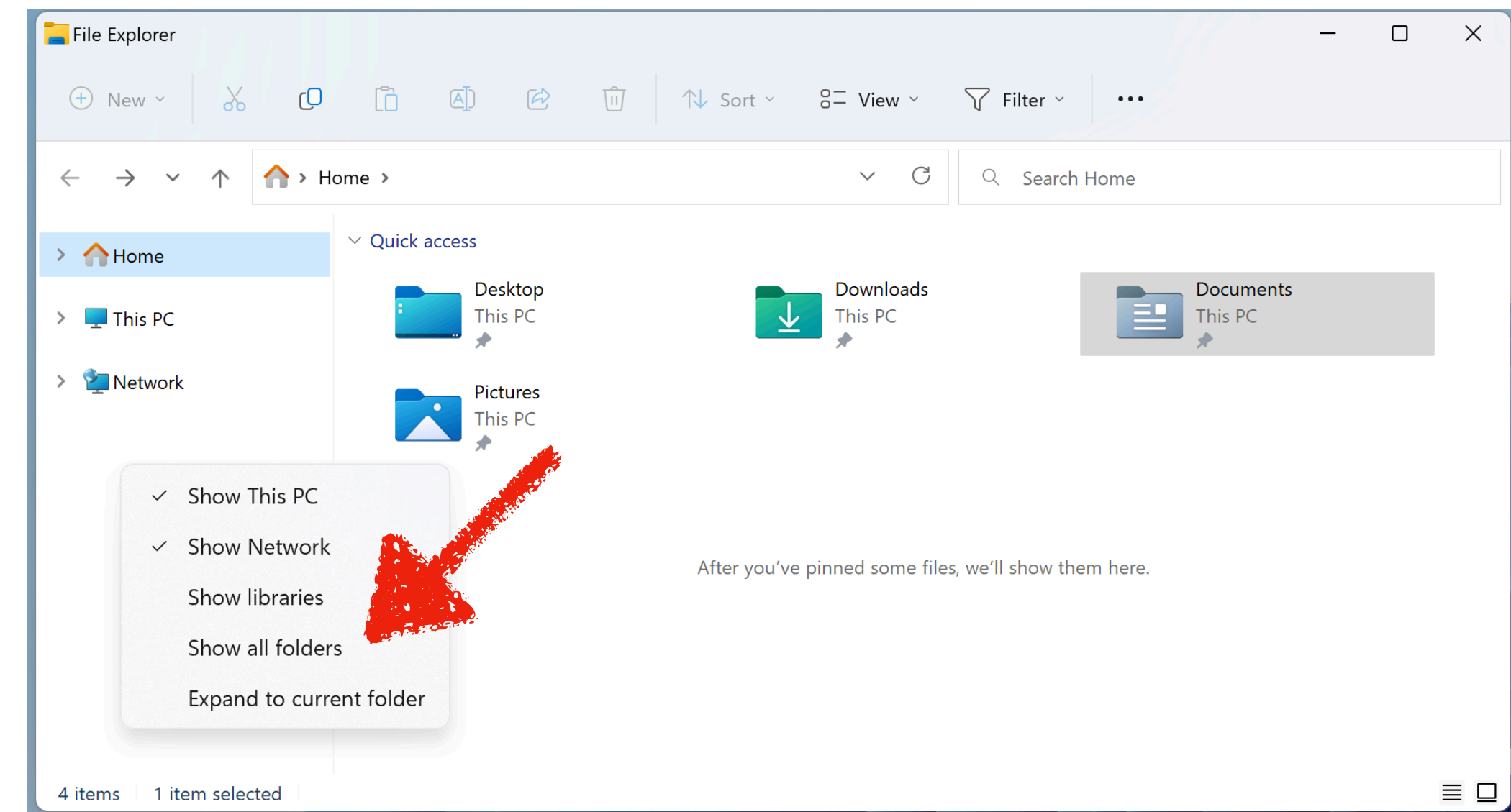
Finder >
Settings... >
Sidebar >
Click the item with the
Home icon and your username



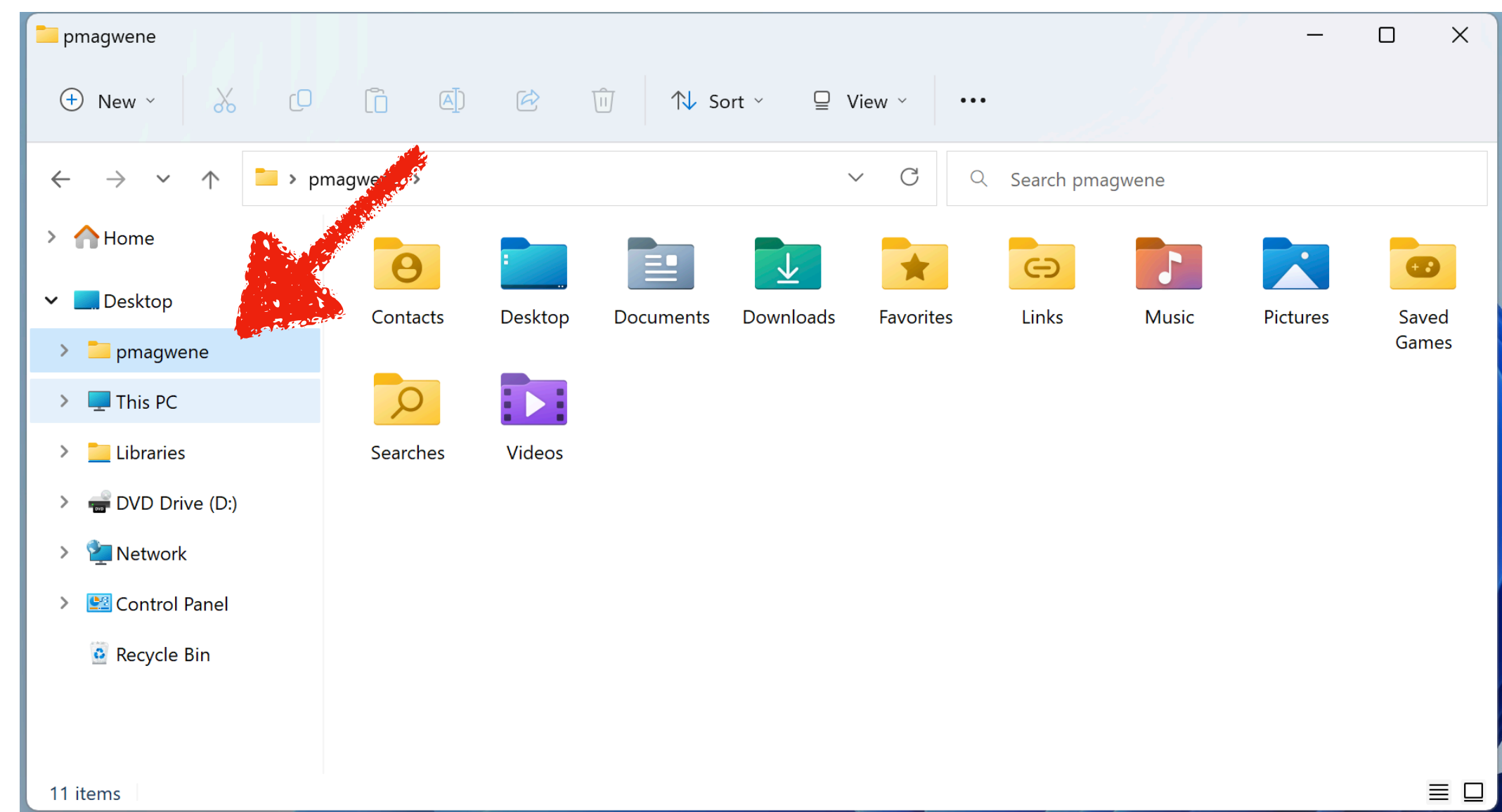
Usability recommendation: Show your user directory in the sidebar (navigation pane) of File explorer

Right click in empty region
on sidebar >

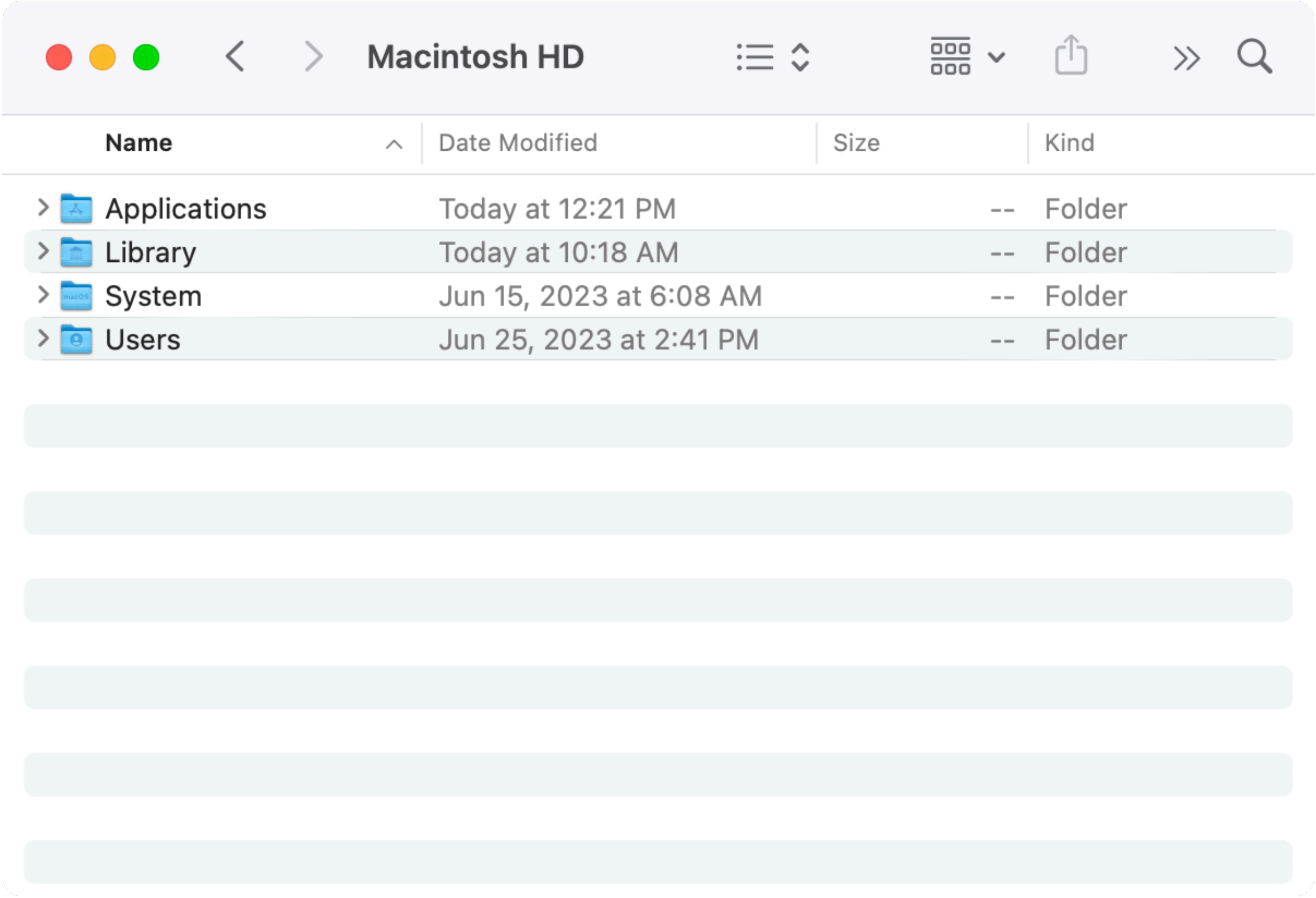
Choose "Show all folders"



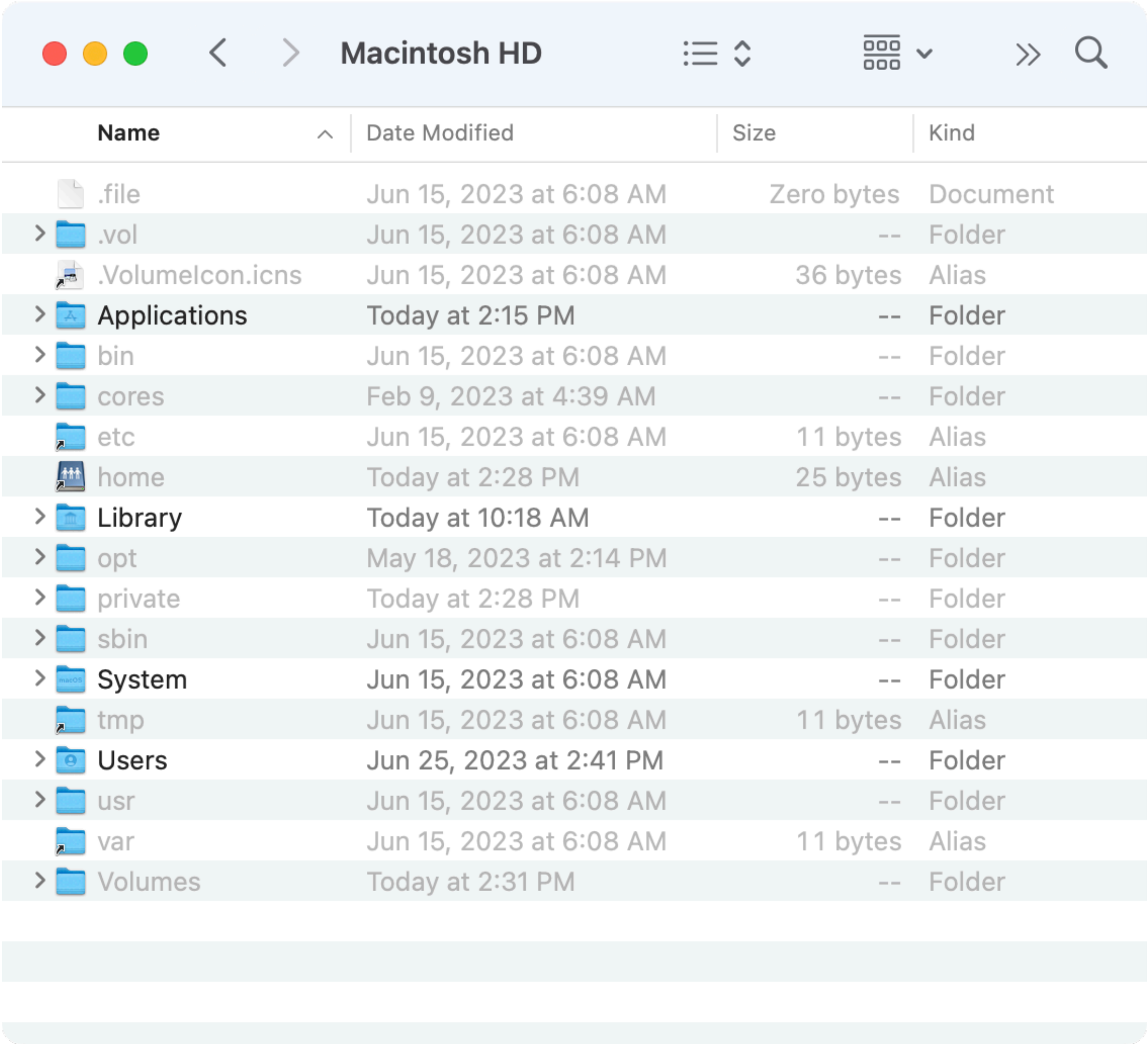
A shortcut to your user
directory will show up in the
sidebar



Hidden files and folders: The Finder (MacOS) and File Explorer (Windows) are lying to you



What the Finder tells me is in my Root directory



What's actually in the Root directory
(Toggle with `command(⌘)-shift-period(.)`)

Hidden file extensions: The Finder (MacOS) is lying to you

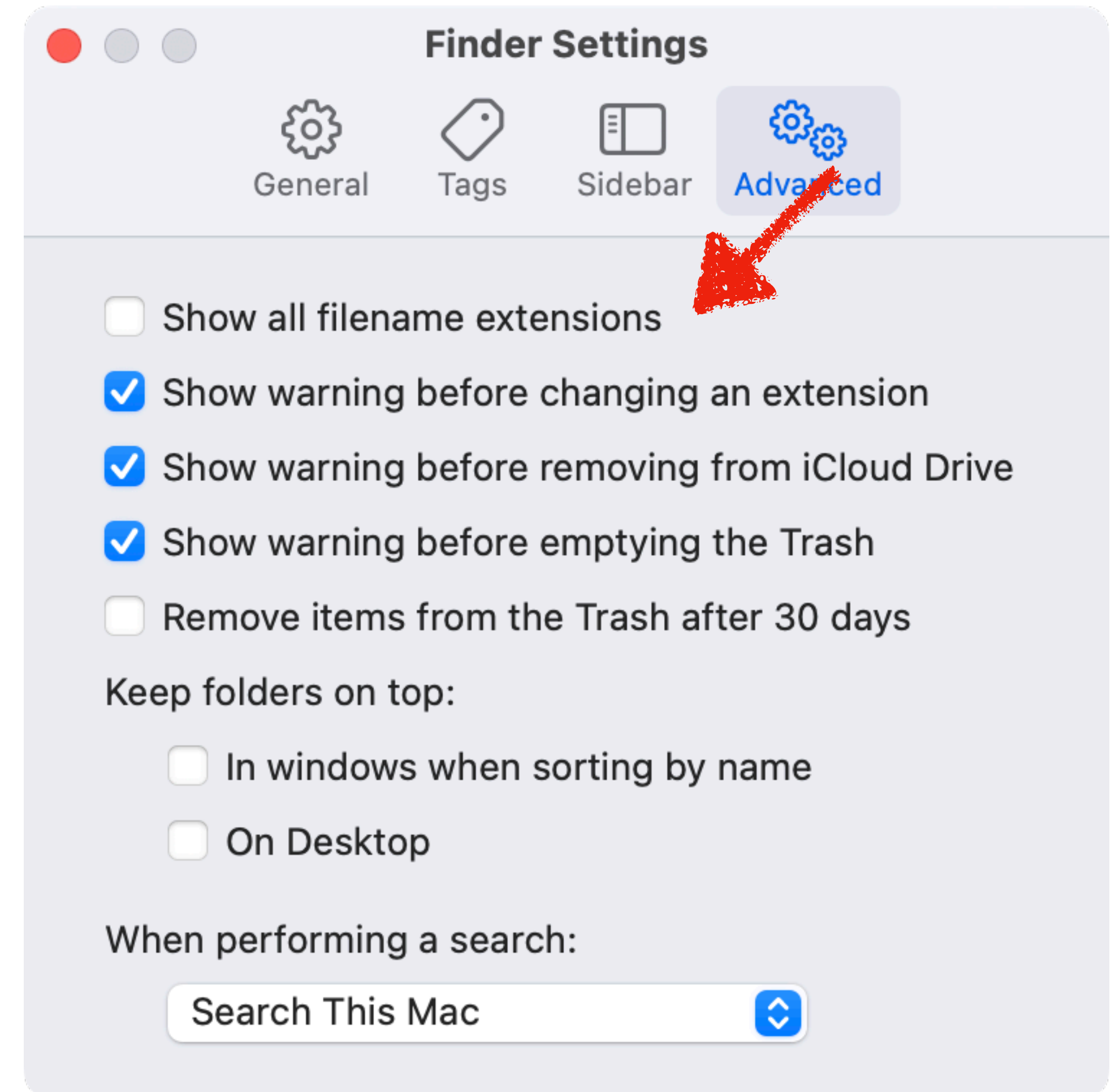
To show file extensions, MacOS

Finder >

Settings... >

Advanced >

Click the "Show all Filenames" box



Hidden file extensions: The File Explorer (Windows) is lying to you

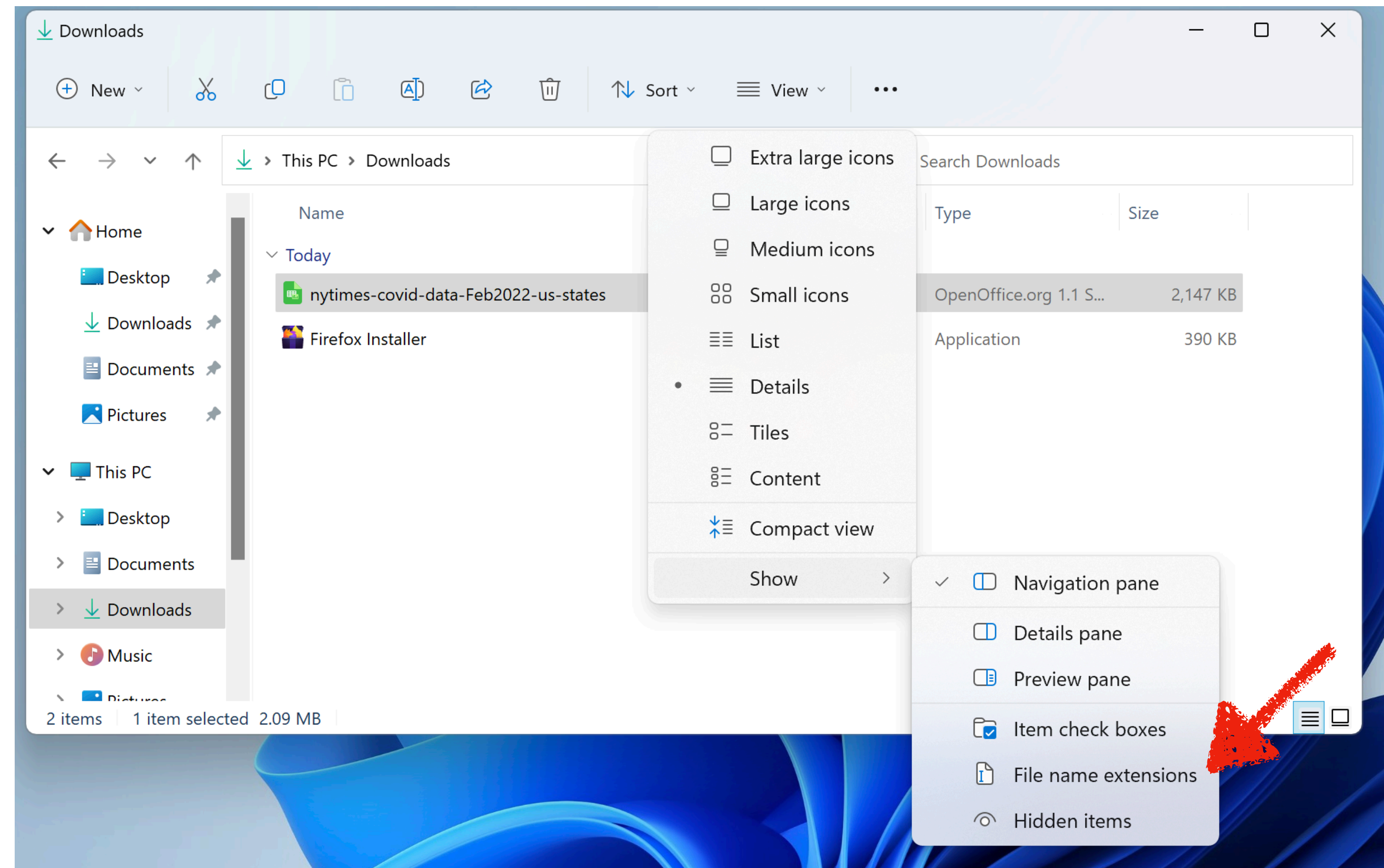
To show file extensions, Windows

File Explorer >

View >

Show >

Click "File Name Extensions"



File system locations to path names

Home directory:

Users > username

MacOS: /users/username/

Windows: c:\Users\username\my_resume.docx

A file in a subdirectory of your home directory:

Users > username > Downloads > shoe_size.csv

MacOS: /users/username/Downloads/shoe_size.csv

Windows: c:\Users\username\shoe_size.csv

The Root directory of your operating system

MacOS: /

Windows: c:\

Do the following

Create a "Bio724" directory in your user (home) directory

Make sure you can navigate to this directory quickly from the
Finder / File Explorer

Download the test file `nytimes-covid-data-us-states_2022-02.csv` (see class wiki)
and save it or move it to the Bio724 directory

What is the full textual path of the data file?