

How to batch rename files in Python

Batch renaming is an effective method for organizing digital files. It can be especially useful when your filenames lack description or consistency.

You can automate bulk renaming with a simple Python script. Pass a template into the Python script and allow it to rename all files in a directory using a consistent naming convention.

Once the Python script is ready, you can run it on the command line and the script will rename all the files in a specified directory.

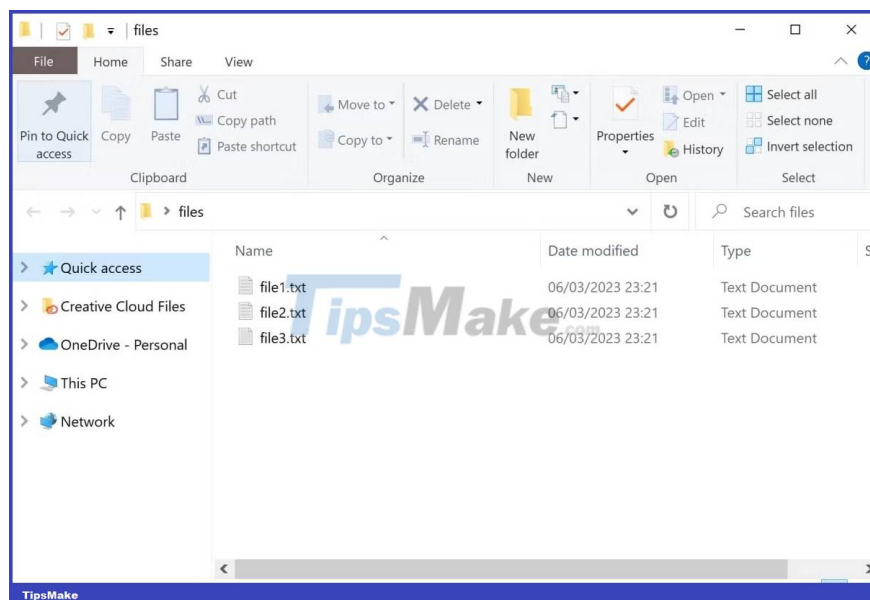
How to iterate through all files in a directory

There are many ways you can batch rename files in Windows, including through Command Prompt or Windows File Explorer.

Another way you can rename files is by using a Python script. If you're not familiar with Python, there are ways you can learn to write better Python code.

To rename all the files in a given directory, you'll need to iterate over the set of files. You can see the full example in this [GitHub repo](#).

1. Create a new folder to store the files you want to rename:



2. Create a new file named **batch-rename.py**.

3. At the top of the file, import the os module. This will allow you to access the operating system's files and folders:

```
import os
```

4. Specify the directory where you have stored the files:

```
dir_path = "C:\Users\Sharl\Desktop\files"
```

You can also use relative paths instead. For example, if your script and file folder are in the same directory, your file path might look like this:

```
dir_path = "files"
```

5. Initialize a counter that you will use to append a counter to the end of the filename:

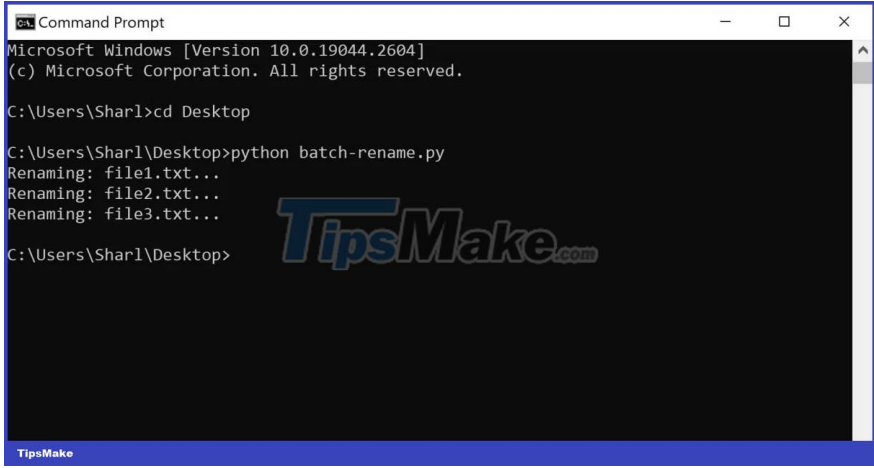
```
counter = 1
```

6. Add a for loop to iterate through each file in the directory:

```
for filename in os.listdir(dir_path): ??  
print("Renaming: " + filename + ".")
```

7. To test the script, run it on the command line using the python command. Make sure you navigate to the folder location where you stored your script:

```
cd Desktop python batch-rename.py
```



```
Command Prompt  
Microsoft Windows [Version 10.0.19044.2604]  
(c) Microsoft Corporation. All rights reserved.  
  
C:\Users\Sharl>cd Desktop  
  
C:\Users\Sharl\Desktop>python batch-rename.py  
Renaming: file1.txt...  
Renaming: file2.txt...  
Renaming: file3.txt...  
  
C:\Users\Sharl\Desktop>
```

How to rename all files based on a certain pattern

The user will need to enter a template into the script, such as "Financial_Planning". The script will rename all files to the pattern provided and add a count to the end of the filename.

1. At the top of the file, import the sys module.

```
import sys
```

This will allow you to accept command line arguments. When running the script on the command line, you can enter the pattern you want to use to rename your file.

```
python batch-rename.py "Financial_Planning"
```

2. After the input statements, enter the command line arguments. Otherwise, an error message will appear:

```
commandLineArgs = sys.argv if len(commandLineArgs) > 1: ??  
pattern = commandLineArgs[1] + "_{" else: ??  
print('Enter a pattern for the new filenames as a command line argument')  
??sys.exit()
```

3. Inside the for loop, when iterating through each file, get its file extension:

```
file_ext = os.path.splitext(filename)[1]
```

4. Create a new file name based on the given template. Add a number to the end of the file name and add the file extension again:

```
new_filename = pattern.format(counter) + file_ext
```

5. Rename the file with the new filename:

```
oldFileName = os.path.join(dir_path, filename) newFileName = os.path.join(dir_path,
```

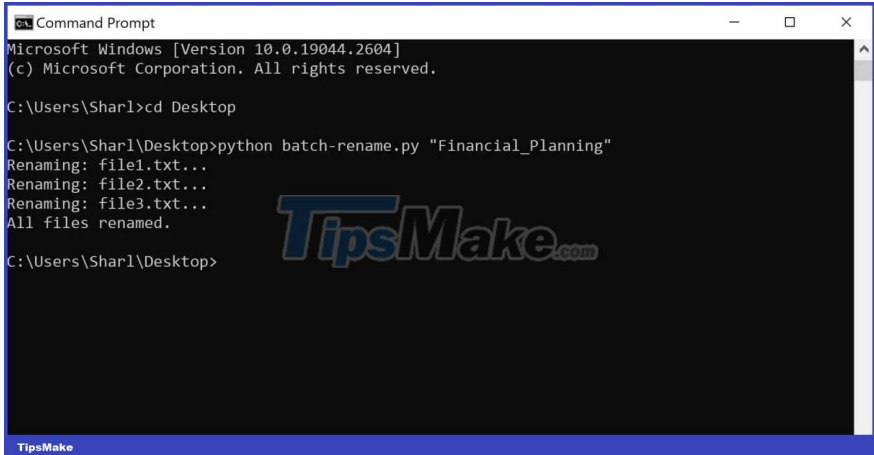
6. Increment the counter for the next file:

```
counter += 1
```

7. After the for loop, the confirmation message will appear:

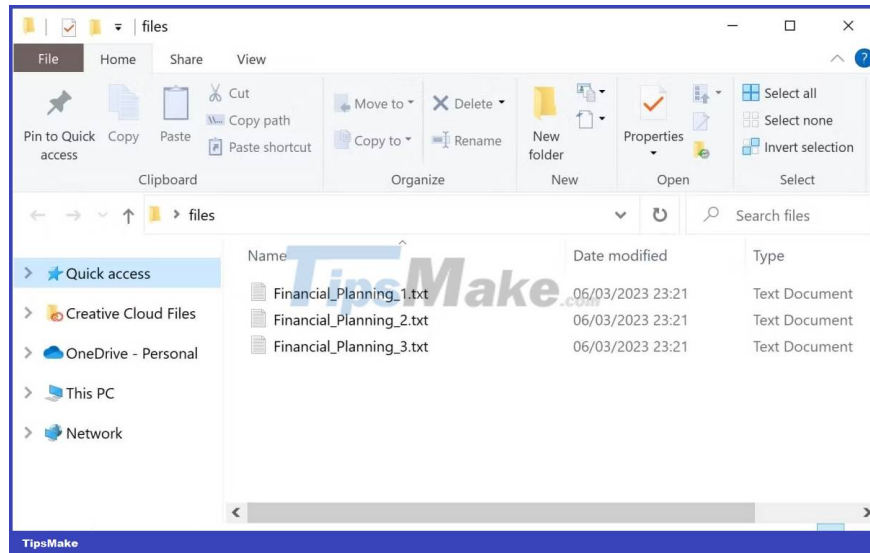
```
print("All files renamed.")
```

8. On a command line, navigate to the directory where you stored your Python script. Use the python command followed by the pattern to rename your file:



```
Command Prompt  
Microsoft Windows [Version 10.0.19044.2604]  
(c) Microsoft Corporation. All rights reserved.  
  
C:\Users\Shar1>cd Desktop  
  
C:\Users\Shar1\Desktop>python batch-rename.py "Financial_Planning"  
Renaming: file1.txt...  
Renaming: file2.txt...  
Renaming: file3.txt...  
All files renamed.  
  
C:\Users\Shar1\Desktop>
```

9. Open file explorer and view the renamed files:



Python scripts are a very useful way to automate simple tasks, such as renaming multiple files at once. You can explore other ways to batch rename files on your computer.

You finished reading the article "**How to batch rename files in Python**" edited by the [TipsMake](#) team. We hope this article has provided you with many useful tech tips and tricks. You can search for similar articles on tips and guides. Thank you for reading and for following us regularly.