

Reading & Writing files

Lesson Plan



Reading and writing files in Python is straightforward and involves a few basic steps. Here's a quick overview:

Reading Files

1. Open a File:

- Use the **'open()'** function with the file name and mode ('r' for reading).
- **Example:**

```
file = open('filename.txt', 'r')
```

2. Read Content:

- You can read the entire file at once with **'read()'**, or read line-by-line with **'readline()'** or **'readlines()'**.
- **Example:**

```
content = file.read()  
# or  
line = file.readline()  
# or  
lines = file.readlines()
```

3. Close the file:

- Always close the file to free up resources using **'close()'**.
- **Example:**

```
file.close()
```

1. Open a File:

- Use the **'open()'** function with the file name and mode (**'w'** for writing, **'a'** for appending, or **'x'** for creating a new file).
- **Example:**

```
file = open('filename.txt', 'w')
```

2. Write Content:

- Use **'write()'** or **'writelines()'** to write to the file.
- **Example:**

```
file.write("Hello, World!")  
# or  
file.writelines(["Hello, World!\n", "Welcome to Python."])
```

3. Close the File:

- Again, remember to close the file using '`close()`'.
- **Example:**

```
file.close()
```

Using 'with' Statement

A more common and recommended approach is using a with statement. It ensures that the file is properly closed after its suite finishes.

Reading:

```
with open('filename.txt', 'r') as file:  
    content = file.read()
```

Writing:

```
with open('filename.txt', 'w') as file:  
    file.write("Hello, World!")
```

Example Code

Here's a full example that reads from one file and writes to another:

```
# Reading from a file  
with open('input.txt', 'r') as infile:  
    content = infile.read()  
  
# Writing to another file  
with open('output.txt', 'w') as outfile:  
    outfile.write(content)
```

Example

1. How to read a file:

```
#open the file  
text_file = open('/Users/pankaj/abc.txt','r')  
  
#get the list of line  
line_list = text_file.readlines();  
  
#for each line from the list, print the line  
for line in line_list:  
    print(line)  
  
text_file.close() #don't forget to close the file
```

Output:

```
>>>
===== RESTART: /Users/pankaj/Desktop/read-file.py =====
Hi Pankaj

I am here

>>>
```

2. How to write a file:

```
#open the file
text_file = open('/Users/pankaj/file.txt','w')

#initialize an empty list
word_list= []

#iterate 4 times
for i in range (1, 5):
    print("Please enter data: ")
    line = input() #take input
    word_list.append(line) #append to the list

text_file.writelines(word_list) #write 4 words to the file

text_file.close() #don't forget to close the file
```

Output:

```
>>>
===== RESTART: /Users/pankaj/Desktop/write-file.py =====
Please enter data:
1
Please enter data:
2
Please enter data:
3
Please enter data:
4
>>>
```