Python File Handling

Python has several functions for creating, reading, updating, and deleting files.

- The key function for working with files in Python is the open() function.
- The open () function takes two parameters; filename, and mode.

There are four different methods (modes) for opening a file:

1. "r" - Read - Default value. Opens a file for reading, error if the file does not exist.
2. "a" - Append - Opens a file for appending, creates the file if it does not exist.
3. "w" - Write - Opens a file for writing, creates the file if it does not exist.
4. "x" - Create - Creates the specified file, returns an error if the file exists.

In addition you can specify if the file should be handled as binary or text mode:-

1. "t" - Text - Default value. Text mode
2. "b" - Binary - Binary mode (e.g. images)

How to open File

```
f = open("demofile.txt")
# The code above is the same as below
f = open("demofile.txt", "rt")
# Because "r" for read, and "t" for text are the default values, you do
 not need to specify them
```

Note: Make sure the file exists, or else you will get an error.

Read a File

Create a Text Document named demofile.txt in a folder. Write down the contents below in this file.

Hello! Welcome to demofile.txt

This file is for testing purposes.

Good Luck!!

To open the file, use the built-in open() function.

The open() function returns a file object, which has a read() method for reading the content of the file:

```python
# Read Only Parts of the File
f = open("demofile.txt", "r")
print(f.read())


# Return the 5 first characters of the file:
f = open("demofile.txt", "r")
print(f.read(5))


# You can return one line by using the readline() method
f = open("demofile.txt", "r")
print(f.readline())


# By calling readline() two times, you can read the two first lines:
f = open("demofile.txt", "r")
print(f.readline())
print(f.readline())

# By calling readlines(), you can read whole file:
f = open("demofile.txt", "r")
print(f.readlines())

# Loop through the file line by line
f = open("demofile.txt", "r")
for x in f:
    print(x)
```

Write to an Existing File

To write to an existing file, you must add a parameter to the open() function:

- "a" - Append - will append to the end of the file.
- "w" - Write - will overwrite any existing content.

Using "w" overwrite method

This will delete all the data existing in that file and write new contents to it.

```python
f = open("demofile.txt", "w")
f.write("Woops! I have deleted the content!")

# Note: the "w" method will overwrite the entire file.
```

Using "a" overwrite method

```python
f = open("demofile.txt", "a")
f.write("Now the file has one more line!")

# Note: the "a" method will append content to the file.
```

Create New File

To create a new file in Python, use the open() method, with one of the following parameter:

- "x" - Create - will create a file, returns an error if the file exist.
- "a" - Append - will create a file if the specified file does not exist.
- "w" - Write - will create a file if the specified file does not exist.

```python
f = open("myfile.txt", "x")
# Result: A new empty file is created!


f = open("myfile.txt", "w")
# Create a new file if it does not exist
```

Delete a File

To delete a file, you must import the OS module, and run its os.remove() function:

```
# Remove the file "demofile.txt"

import os
os.remove("demofile.txt")

# To avoid getting an error, you might want to check if the file exist
before you try to delete it
```

Example to first check if File exists and then delete it.

```
import os

if os.path.exists("demofile.txt"):
    os.remove("demofile.txt")
else:
    print("The file does not exist")

# Delete Folder
# To delete an entire folder, use the os.rmdir() method:

os.rmdir("myfolder")
# Note: You can only remove empty folders.
```

Questions

1. Take the Input from the User and write that input into a File.
2. There are 2 files (file1.txt & file2.txt). Copy all the contents of File1 into File2.
3. Ask 10 words from User. Write all the Odd Length words in odd.txt and Even Length words in even.txt.
4. Count the number of words in a whole File.
5. Ask a word from User. Replace all the occurrence of that word in the File with "INDIA".
6. Remove all the spaces from a File using File Handling.