

CSc 110 Files

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New
groups
today!

Announcements

- Find your new group
- Individual exam grades have been posted to Gradescope
- Group exam grades to be posted
- PA 1D Chess due tomorrow

Opening a file

- To open a file in a python program:

```
my_file = open(file_name, mode)
```

- **file_name** should be the name of the file to open
 - It can also be a path
- **mode** should be the mode in which to open in
 - 'a' 'r' 'w'
- After opening, use the **my_file** object to read from or write to the file

Reading a file

- Two functions
 - **file.readline()** reads one line from a file, returns a string.
Calling it repeatedly will read a sequence of lines.
 - Returns an empty string if it has reached the end of the content
 - **file.readlines()** reads all of the lines, returns a list of strings

Write the program

- Create a file named numbers.txt with the contents to the right in it
- Create a new program that
 - Reads a file named numbers.txt
 - Sums all of the numbers in the whole file
 - Prints out the final sum
- Given the input shown on this slide, the program should print: **15**

numbers.txt:

1

0

5

7

2

Write the program

```
def main():  
    number_file = open('numbers.txt', 'r')  
    value = 0  
    for line in number_file:  
        value += int(line)  
    print(value)
```

```
main()
```

numbers.txt:

1

0

5

7

2

Write the program

- Create a file named numbers.txt with the contents to the right in it
- Create a new program that
 - Reads a file named numbers.txt
 - Sums all of the numbers in the whole file
 - Prints out the final sum
- Given the input shown on this slide, the program should print:
24

numbers.txt:

1,2,1

0,4,1

5,5,5

```
def main():  
    number_file = open('numbers.txt', 'r')  
    value = 0  
    for line in number_file:  
        value += int(line)  
    print(value)
```

```
main()
```

Write the program

```
def main():  
    number_file = open('numbers.txt', 'r')  
    value = 0  
    for line in number_file:  
        columns = line.split(',')  
        for i in columns:  
            value += int(i)  
    print(value)  
main()
```

numbers.txt:

1,2,1

0,4,1

5,5,5

Write the program

- Read in the contents of `dialogue.txt`
- Print out every-other line

dialogue.txt:

Joker: Its simple, we kill the Batman.

Maroni: If its so simple, why haven't you done it yet?

Joker: If your good at something never do it for free.

Chechen: How much you want?

Joker: Half.

output:

Joker: Its simple, we kill the Batman.

Joker: If your good at something never do it for free.

Joker: Half.

Write the program

```
def main():  
    number_file = open('dialogue.txt', 'r')  
    lines = number_file.readlines()  
    for i in range(0, len(lines), 2):  
        to_print = lines[i].strip('\n')  
        print(to_print)
```

```
main()
```

dialogue.txt:

Joker: Its simple, we kill the Batman.
Maroni: If its so simple, why haven't you done it yet?
Joker: If your good at something never do it for free.
Chechen: How much you want?
Joker: Half.

output:

Joker: Its simple, we kill the Batman.
Joker: If your good at something never do it for free.
Joker: Half.

Modes

- To read a file:
 - Use '**r**' for reading the contents of a file
- To write to a file: use
 - Use '**a**' to append to the existing file content
 - Use '**w**' to write to a file, and replace existing content

Writing to a file

- After you have opened the file in either the read or append mode

```
a_file = open(file_name, mode)
```

- Use the **write** function to write text content to the file

```
a_file.write('put this content in a file')
```

- When finished writing, **close** the file **a_file.close()**

What would the contents of words.txt be?

words.txt:

The lion
jumped over
the bear

```
words = open('words.txt', 'w')  
words.write('The slow wolf')  
words.write('jumped over')  
words.write('the bear')  
words.close()
```

What would the contents of words.txt be?

words.txt:

The lion
jumped over
the bear

```
words = open('words.txt', 'w')  
words.write('The slow wolf\n')  
words.write('jumped over\n')  
words.write('the bear\n')  
words.close()
```

What would the contents of words.txt be?

words.txt:

The lion
jumped over
the bear

```
words = open('words.txt', 'a')  
words.write('The slow wolf\n')  
words.write('jumped over\n')  
words.write('the bear\n')  
words.close()
```

What would
it print?

dictionary.txt:

aardvark

abacus

acorn

advil

aerodynamic

```
word_file = open('dictionary.txt', 'a')
word_file.write('after\n')
word_file.write('affiliate\n')
word_file.write('aggregate\n')
word_file.close()
word_file = open('dictionary.txt', 'r')
lines = word_file.readlines()
i = 0
for line in lines:
    if i % 2 == 0:
        print(line)
    i += 1
```