

TEJ20 - Text Files

A text file is a file that contains text like alphabetic characters, digits, punctuation, and special characters. A text file usually has a file name that ends in a **.txt** extension.

Text files are used to store information and is available to a program when the program is run.

In Python we can:

- create text files
- write data to text files
- read data from text files
- add data to an existing text file
- rename and delete text files
- make a copy of a file

In Python there are 4 modes for dealing with files. You must **open** your file in that mode.

“**r**” - read mode

“**w**” – write mode

“**a**” – append mode (for adding to an existing file)

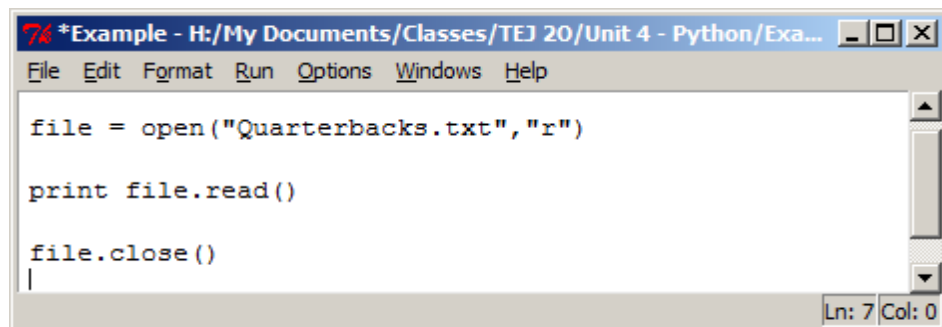
“**r+**” – opens the file for both reading and writing

Reading Text Files

The file “*Quarterbacks.txt*” contains names of the top 10 quarterbacks of all time (as shown) :

Fran Tarkenton
Jim Kelly
Peyton Manning
Johnny Unitas
Steve Young
Brett Favre
Tom Brady
Dan Marino
John Elway
Joe Montana

Reading the File :



```
*Example - H:/My Documents/Classes/TEJ 20/Unit 4 - Python/Exa...
File Edit Format Run Options Windows Help

file = open("Quarterbacks.txt", "r")

print file.read()

file.close()
|
Ln: 7 Col: 0
```

file = open("Quarterbacks.txt","r") → the variable “**file**” is used to represent the text file, “**Quarterback.txt**”. The statement **opens** the file for reading “**r**”

file.read() → reads the entire file and prints all its contents

file.close() → closes the file. If a text file is not closed, any information that was in the file or that was changed in the file, may be lost

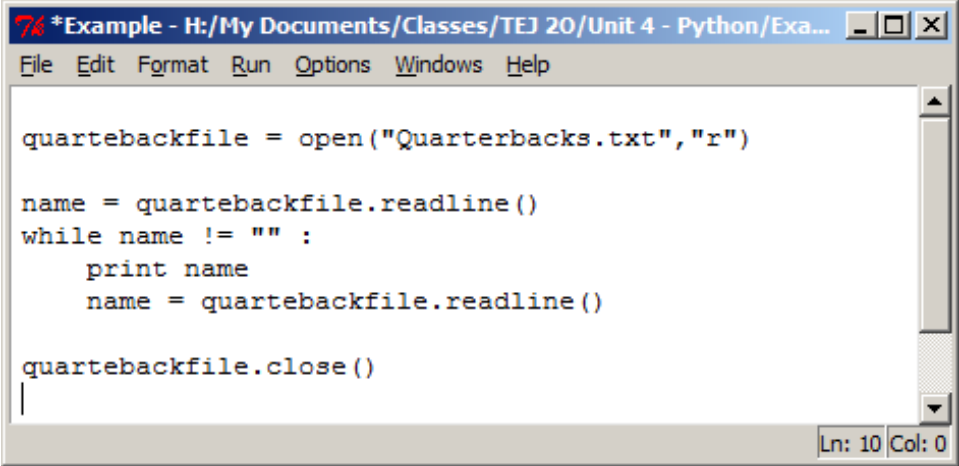
Print `file.read(20)` → will read the first 20 characters of the file

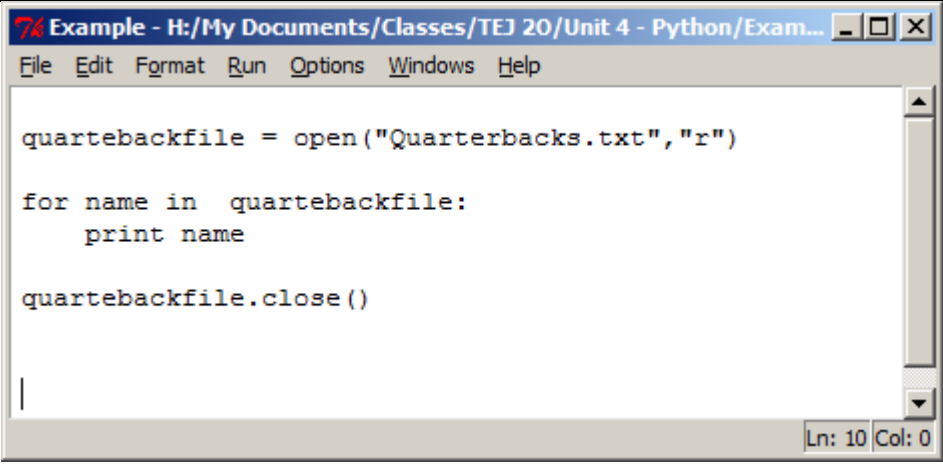
Fran Tarkenton
Jim K

Reading One Line at a Time :

A text file that needs to be read a single line at a time can be read using the **readline()** instead of **read()**. To read the entire contents of the file a loop will be required.

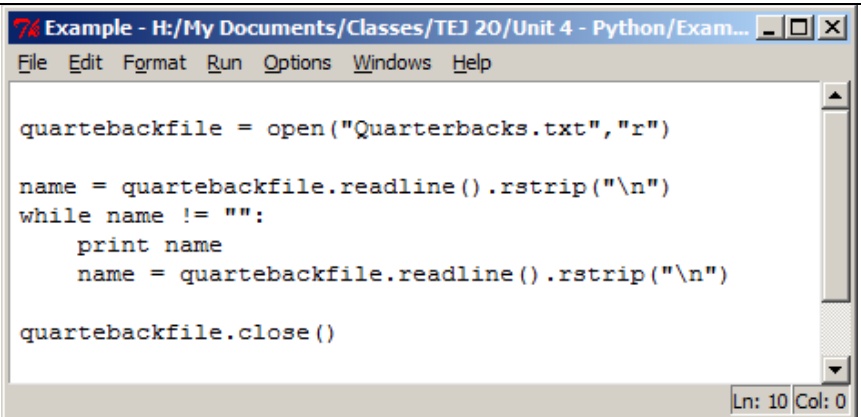
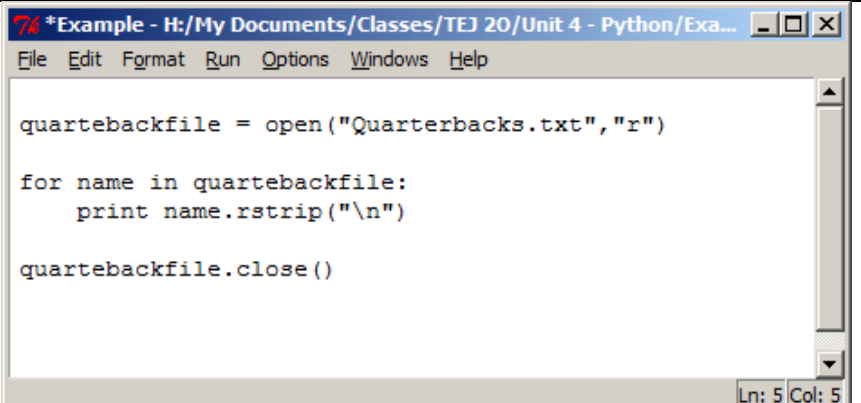
** The variable **quarterbackfile** is used to represent the file

While Loop :	Output :
	Fran Tarkenton Jim Kelly Peyton Manning Johnny Unitas Steve Young Brett Favre Tom Brady Dan Marino John Elway Joe Montana
*** Note the spaces between output lines ***	

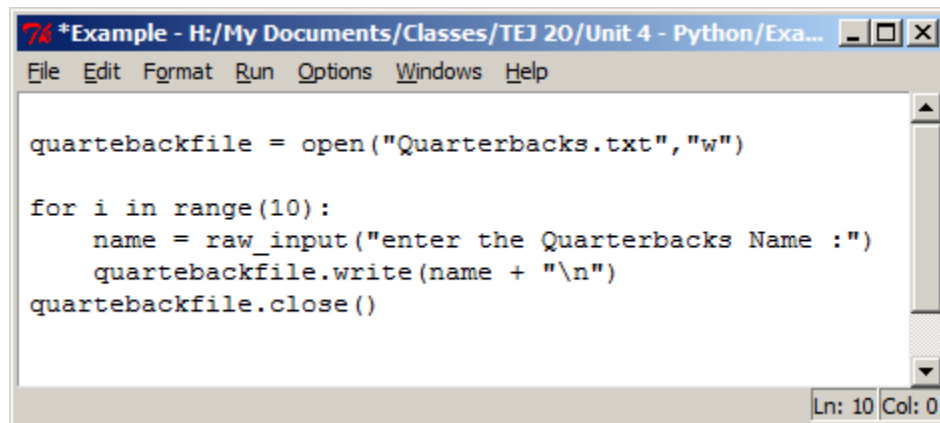
For Loop :	Output :
 <pre> quartebackfile = open("Quarterbacks.txt", "r") for name in quartebackfile: print name quartebackfile.close() </pre> <p>*** Note the spaces between output lines ***</p>	<pre> Fran Tarkenton Jim Kelly Peyton Manning Johnny Unitas Steve Young Brett Favre Tom Brady Dan Marino John Elway Joe Montana </pre>

The blank line between each line of output is because each line has, at the end of it, the end-of-line character (**\n**). This can be removed using the **rstrip()** method.

rstrip() will strip characters off of the right side of a string, so to eliminate the (**\n**), we would use **rstrip("\n")**

While Loop :	Output :
 <pre> quartebackfile = open("Quarterbacks.txt", "r") name = quartebackfile.readline().rstrip("\n") while name != "": print name name = quartebackfile.readline().rstrip("\n") quartebackfile.close() </pre>	<pre> Fran Tarkenton Jim Kelly Peyton Manning Johnny Unitas Steve Young Brett Favre Tom Brady Dan Marino John Elway Joe Montana </pre>
 <pre> quartebackfile = open("Quarterbacks.txt", "r") for name in quartebackfile: print name.rstrip("\n") quartebackfile.close() </pre>	<pre> Fran Tarkenton Jim Kelly Peyton Manning Johnny Unitas Steve Young Brett Favre Tom Brady Dan Marino John Elway Joe Montana </pre>

Creating Text Files

A screenshot of a Python IDE window titled '*Example - H:/My Documents/Classes/TEJ 20/Unit 4 - Python/Exa...'. The window has a menu bar with 'File', 'Edit', 'Format', 'Run', 'Options', 'Windows', and 'Help'. The main text area contains the following Python code:

```
quarterbackfile = open("Quarterbacks.txt","w")

for i in range(10):
    name = raw_input("enter the Quarterbacks Name :")
    quarterbackfile.write(name + "\n")
quarterbackfile.close()
```

The status bar at the bottom right shows 'Ln: 10 Col: 0'.

quarterbackfile = open("Quarterbacks.txt","W") → **opens** the file for writing, “**w**”

Loops 10 times and has the user input a Quarterback name

quarterbackfile file.write(name + “\n”) → writes the inputted name and adds the newline character (**\n**), so that the next name will be on a separate line

quarterbackfile file.close() → closes the file. If a text file is not closed, any information that was in the file or that was changed in the file, may be lost

Appending (Adding) Data to an Existing Text File

The file is to be opened using “**a**”. All data writing to the file will be appended (added) to the end.