

This program repeatedly takes commands from the command line until one of those commands is exit. So for both programs I use a while loop with an always true condition and then break when the user input is exit or there is an error. For both of them I use fgets to get user input which also collects the '\n' at the end of the string so I set that to '\0' using strchr to find the '\n' char.

In the posix version I fork to create a new process. Then if the process id is 0 I tokenize the user input into the argv array and set the argv index after the last to null. I then use execvp with argv to run the command in the new process. If the process id is not zero, it is the parent process so I wait for the child to finish and then loop again

In the windows version I prepend 'cmd /C ' to the user input so the new process has access to cmd commands. I then use createProcess and WaitForSingleObject to create the new process and have the parent wait for the child to finish.

```
ALEXANDERs-MacBook-Air:hw3 alexanderryner$ gcc myShell.c
ALEXANDERs-MacBook-Air:hw3 alexanderryner$ ./a.out
myShell> ls
a.out      myShell.c
myShell> ls -a
.          ..          a.out      myShell.c
myShell> ls -a ../
.          .DS_Store  hw2       notes
..         hw1      hw3
myShell> exit
ALEXANDERs-MacBook-Air:hw3 alexanderryner$ ls
a.out      myShell.c
ALEXANDERs-MacBook-Air:hw3 alexanderryner$ ls -a
.          ..          a.out      myShell.c
ALEXANDERs-MacBook-Air:hw3 alexanderryner$ ls -a ../
.          .DS_Store  hw2       notes
..         hw1      hw3
ALEXANDERs-MacBook-Air:hw3 alexanderryner$
```

```
C:\Users\Alan\Desktop\415\hw3>cl winMyShell.c
Microsoft (R) C/C++ Optimizing Compiler Version 18.00.21005.1 for x86
Copyright (C) Microsoft Corporation. All rights reserved.
```

```
winMyShell.c
```

Microsoft (R) Incremental Linker Version 12.00.21005.1
Copyright (C) Microsoft Corporation. All rights reserved.

/out:winMyShell.exe
winMyShell.obj

C:\Users\Alan\Desktop\415\hw3>winMyShell
myShell> dir
Volume in drive C has no label.
Volume Serial Number is BCA8-CDA8

Directory of C:\Users\Alan\Desktop\415\hw3

```
02/27/2014 07:09 PM <DIR>      .
02/27/2014 07:09 PM <DIR>      ..
02/26/2014 11:29 PM          100 hello.c
02/26/2014 11:30 PM       73,216 hello.exe
02/26/2014 11:30 PM          683 hello.obj
02/27/2014 07:08 PM          927 winMyShell.c
02/27/2014 07:08 PM          954 winMyShell.c~
02/28/2014 05:58 PM     77,312 winMyShell.exe
02/28/2014 05:58 PM      1,759 winMyShell.obj
          7 File(s)      154,951 bytes
          2 Dir(s) 10,456,199,168 bytes free
```

myShell> dir /b

hello.c
hello.exe
hello.obj
winMyShell.c
winMyShell.c~
winMyShell.exe
winMyShell.obj

myShell> dir /s/w/o/p

Volume in drive C has no label.
Volume Serial Number is BCA8-CDA8

Directory of C:\Users\Alan\Desktop\415\hw3

```
[.]      [..]      hello.c      hello.exe
hello.obj      winMyShell.c  winMyShell.c~  winMyShell.exe
winMyShell.obj
          7 File(s)      154,951 bytes
```

Total Files Listed:

7 File(s) 154,951 bytes

2 Dir(s) 10,456,199,168 bytes free
myShell> exit

C:\Users\Alan\Desktop\415\hw3>dir
Volume in drive C has no label.
Volume Serial Number is BCA8-CDA8

Directory of C:\Users\Alan\Desktop\415\hw3

02/27/2014	07:09 PM	<DIR>	.
02/27/2014	07:09 PM	<DIR>	..
02/26/2014	11:29 PM		100 hello.c
02/26/2014	11:30 PM		73,216 hello.exe
02/26/2014	11:30 PM		683 hello.obj
02/27/2014	07:08 PM		927 winMyShell.c
02/27/2014	07:08 PM		954 winMyShell.c~
02/28/2014	05:58 PM		77,312 winMyShell.exe
02/28/2014	05:58 PM		1,759 winMyShell.obj
			7 File(s) 154,951 bytes
			2 Dir(s) 10,456,199,168 bytes free

C:\Users\Alan\Desktop\415\hw3>dir /b
hello.c
hello.exe
hello.obj
winMyShell.c
winMyShell.c~
winMyShell.exe
winMyShell.obj

C:\Users\Alan\Desktop\415\hw3>dir /s/w/o/p
Volume in drive C has no label.
Volume Serial Number is BCA8-CDA8

Directory of C:\Users\Alan\Desktop\415\hw3

[.]	[..]	hello.c	hello.exe	
hello.obj	winMyShell.c	winMyShell.c~	winMyShell.exe	
winMyShell.obj				
			7 File(s)	154,951 bytes

Total Files Listed:
7 File(s) 154,951 bytes
2 Dir(s) 10,456,199,168 bytes free

```
C:\Users\Alan\Desktop\415\hw3>
```