

Due: 9:00AM Tuesday, April 8, 2008**Submission instructions:**

Remember the rules that apply to all programs submitted for this course ([BasicRules.pdf](#)).

Program description:

One of the most popular programs accessed by users is iTunes. The iTunes application keeps a library of songs that its user imports from CDs, the iTunes Store, or other devices. iTunes has the capability of sorting the songs by several means, including song title, artist, album, genre, play count, the last time the song was played, etc. Additionally, iTunes can be used as a party Jukebox, with its Party Shuffle option, which randomly selects songs from the user's library.

For this project, you will need to write the function definitions to the supplied function prototypes given in order to mimic the iTunes application. The resulting program should be able to sort a library by the song name, artist, or play count. The program should also have a Party Shuffle option, which randomly selects 10 songs from the user library.

Rules/Ideas

You will be working with a newly-created class called Track. Its attributes include the name of a song, the name of the artist, and play count. You will need to complete the methods for the Track class; additionally, there are other functions that are to be included with this program. You may add more functions if you wish, but do not modify a given function's header (return type, name, and arguments). Do not add attributes to a class or change the type of the attributes of the class. See the p6.cpp file for more information on each method and function.

Your program will read from a file called library.txt. Three lines will make up the contents of one track. One line will have the title of a song, the second line will have the song's artist, and the third line will have the play count (the number of times the song has been played).

For sorting, review class 30 notes (Friday), and your textbook (page 416-420).

When reading from the library.txt file, you may notice that titles and artists may have underscores; these are used in lieu of spaces. You will need to convert these once you've read from the file.

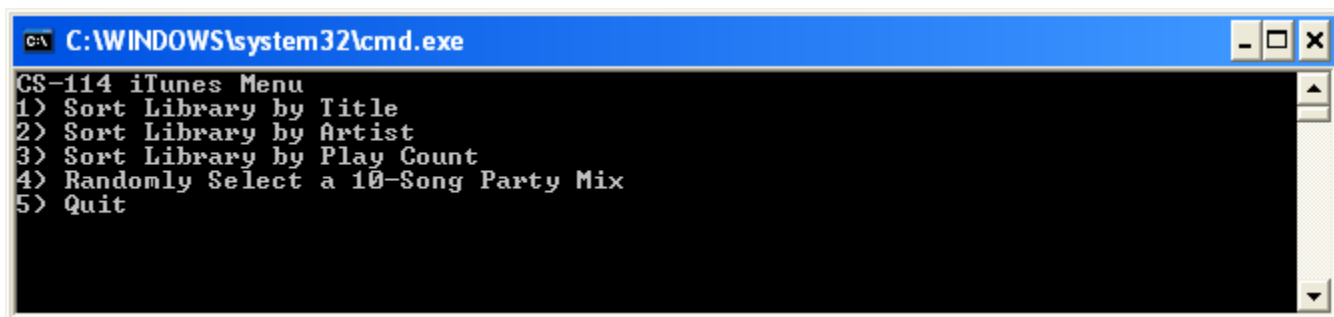
You can allow for repeats in the Party Mix.

Auxiliary Assignment

After you have turned in the project, you must submit a "Lessons Learned" document, due Wednesday at 9AM, April 9. See the "Homework #21" item on eLearning for details.

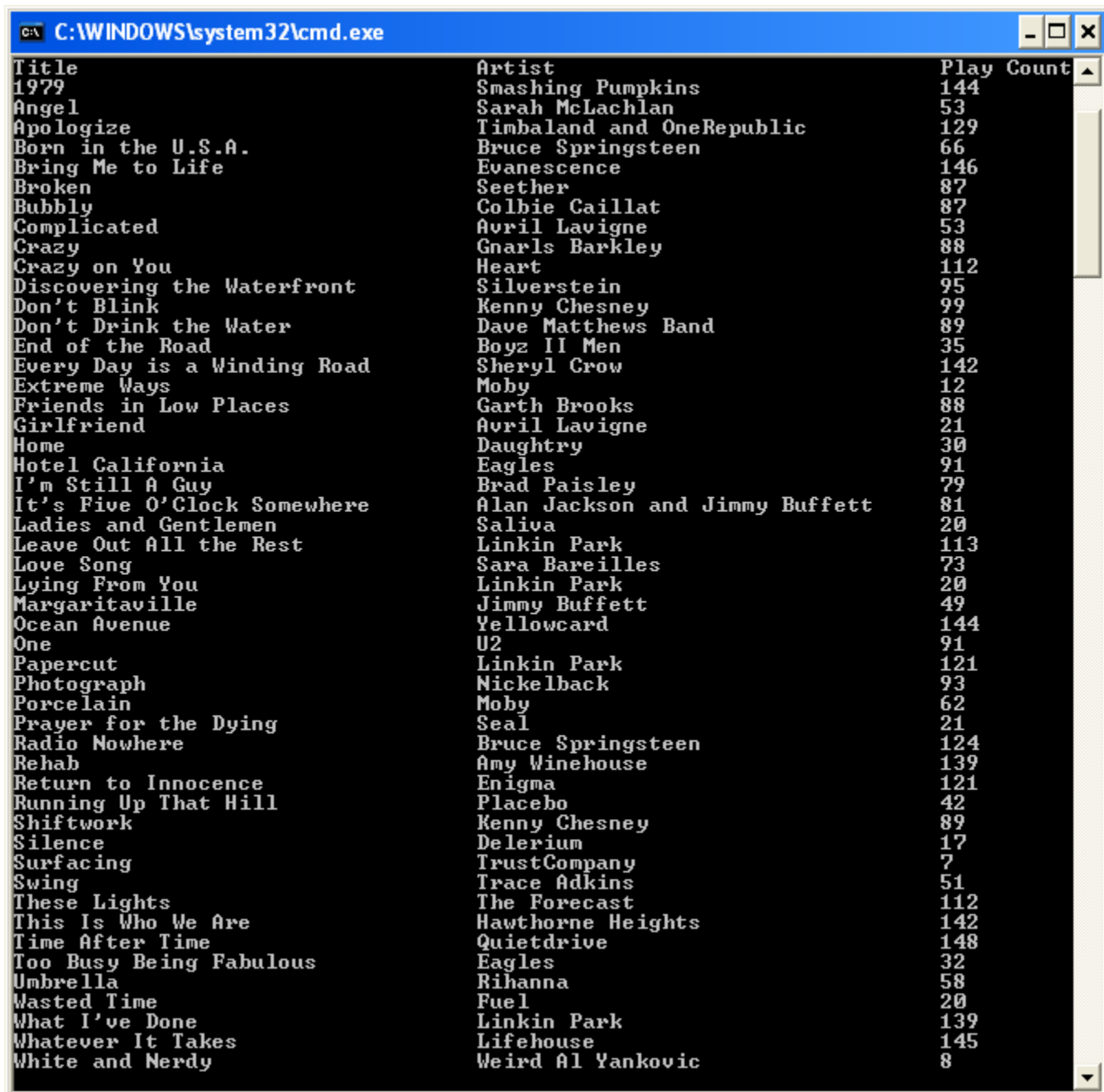
Sample Runs

Menu:



```
C:\WINDOWS\system32\cmd.exe
CS-114 iTunes Menu
1) Sort Library by Title
2) Sort Library by Artist
3) Sort Library by Play Count
4) Randomly Select a 10-Song Party Mix
5) Quit
```

Selecting Option 1:



```
C:\WINDOWS\system32\cmd.exe
Title Artist Play Count
1979 Smashing Pumpkins 144
Angel Sarah McLachlan 53
Apologize Timbaland and OneRepublic 129
Born in the U.S.A. Bruce Springsteen 66
Bring Me to Life Evanescence 146
Broken Seether 87
Bubbly Colbie Caillat 87
Complicated Avril Lavigne 53
Crazy Gnarlz Barkley 88
Crazy on You Heart 112
Discovering the Waterfront Silverstein 95
Don't Blink Kenny Chesney 99
Don't Drink the Water Dave Matthews Band 89
End of the Road Boyz II Men 35
Every Day is a Winding Road Sheryl Crow 142
Extreme Ways Moby 12
Friends in Low Places Garth Brooks 88
Girlfriend Avril Lavigne 21
Home Daughtry 30
Hotel California Eagles 91
I'm Still A Guy Brad Paisley 79
It's Five O'Clock Somewhere Alan Jackson and Jimmy Buffett 81
Ladies and Gentlemen Saliva 20
Leave Out All the Rest Linkin Park 113
Love Song Sara Bareilles 73
Lying From You Linkin Park 20
Margaritaville Jimmy Buffett 49
Ocean Avenue Yellowcard 144
One U2 91
Papercut Linkin Park 121
Photograph Nickelback 93
Porcelain Moby 62
Prayer for the Dying Seal 21
Radio Nowhere Bruce Springsteen 124
Rehab Amy Winehouse 139
Return to Innocence Enigma 121
Running Up That Hill Placebo 42
Shiftwork Kenny Chesney 89
Silence Delerium 17
Surfacing TrustCompany 7
Swing Trace Adkins 51
These Lights The Forecast 112
This Is Who We Are Hawthorne Heights 142
Time After Time Quietdrive 148
Too Busy Being Fabulous Eagles 32
Umbrella Rihanna 58
Wasted Time Fuel 20
What I've Done Linkin Park 139
Whatever It Takes Lifehouse 145
White and Nerdy Weird Al Yankovic 8
```

Selecting Option 2:

C:\WINDOWS\system32\cmd.exe			
Title	Artist	Play Count	
It's Five O'Clock Somewhere	Alan Jackson and Jimmy Buffett	81	
Rehab	Amy Winehouse	139	
Complicated	Avril Lavigne	53	
Girlfriend	Avril Lavigne	21	
End of the Road	Boyz II Men	35	
I'm Still A Guy	Brad Paisley	79	
Radio Nowhere	Bruce Springsteen	124	
Born in the U.S.A.	Bruce Springsteen	66	
Bubbly	Colbie Caillat	87	
Home	Daughtry	30	
Don't Drink the Water	Dave Matthews Band	89	
Silence	Delerium	17	
Hotel California	Eagles	91	
Too Busy Being Fabulous	Eagles	32	
Return to Innocence	Enigma	121	
Bring Me to Life	Evanescence	146	
Wasted Time	Fuel	20	
Friends in Low Places	Garth Brooks	88	
Crazy	Gnarls Barkley	88	
This Is Who We Are	Hawthorne Heights	142	
Crazy on You	Heart	112	
Margaritaville	Jimmy Buffett	49	
Don't Blink	Kenny Chesney	99	
Shiftwork	Kenny Chesney	89	
Whatever It Takes	Lifhouse	145	
Lying From You	Linkin Park	20	
Leave Out All the Rest	Linkin Park	113	
What I've Done	Linkin Park	139	
Papercut	Linkin Park	121	
Extreme Ways	Moby	12	
Porcelain	Moby	62	
Photograph	Nickelback	93	
Running Up That Hill	Placebo	42	
Time After Time	Quietdrive	148	
Umbrella	Rihanna	58	
Ladies and Gentlemen	Saliva	20	
Love Song	Sara Bareilles	73	
Angel	Sarah McLachlan	53	
Prayer for the Dying	Seal	21	
Broken	Seether	87	
Every Day is a Winding Road	Sheryl Crow	142	
Discovering the Waterfront	Silverstein	95	
1979	Smashing Pumpkins	144	
These Lights	The Forecast	112	
Apologize	Timbaland and OneRepublic	129	
Swing	Trace Adkins	51	
Surfacing	TrustCompany	7	
One	U2	91	
White and Nerdy	Weird Al Yankovic	8	
Ocean Avenue	Yellowcard	144	

Selecting Option 3:

C:\WINDOWS\system32\cmd.exe		
Rehab	Amy Winehouse	139
What I've Done	Linkin Park	139
Apologize	Timbaland and OneRepublic	129
Radio Nowhere	Bruce Springsteen	124
Papercut	Linkin Park	121
Return to Innocence	Enigma	121
Leave Out All the Rest	Linkin Park	113
Crazy on You	Heart	112
These Lights	The Forecast	112
Don't Blink	Kenny Chesney	99
Discovering the Waterfront	Silverstein	95
Photograph	Nickelback	93
One	U2	91
Hotel California	Eagles	91
Shiftwork	Kenny Chesney	89
Don't Drink the Water	Dave Matthews Band	89
Crazy	Gnarls Barkley	88
Friends in Low Places	Garth Brooks	88
Broken	Seether	87
Bubbly	Colbie Caillat	87
It's Five O'Clock Somewhere	Alan Jackson and Jimmy Buffett	81
I'm Still A Guy	Brad Paisley	79
Love Song	Sara Bareilles	73
Born in the U.S.A.	Bruce Springsteen	66
Porcelain	Moby	62
Umbrella	Rihanna	58
Complicated	Avril Lavigne	53
Angel	Sarah McLachlan	53
Swing	Trace Adkins	51
Margaritaville	Jimmy Buffett	49
Running Up That Hill	Placebo	42
End of the Road	Boyz II Men	35
Too Busy Being Fabulous	Eagles	32
Home	Daughtry	30
Prayer for the Dying	Seal	21
Girlfriend	Avril Lavigne	21
Wasted Time	Fuel	20
Lying From You	Linkin Park	20
Ladies and Gentlemen	Saliva	20
Silence	Delerium	17
Extreme Ways	Moby	12
White and Nerdy	Weird Al Yankovic	8
Surfacing	TrustCompany	7
CS-114 iTunes Menu		
1) Sort Library by Title		
2) Sort Library by Artist		
3) Sort Library by Play Count		
4) Randomly Select a 10-Song Party Mix		
5) Quit		

Selecting Option 4:

C:\WINDOWS\system32\cmd.exe		
Title	Artist	Play Count
Umbrella	Rihanna	58
Papercut	Linkin Park	121
Complicated	Avril Lavigne	53
Every Day is a Winding Road	Sheryl Crow	142
Don't Drink the Water	Dave Matthews Band	89
Don't Blink	Kenny Chesney	99
Umbrella	Rihanna	58
Whatever It Takes	Lifeshouse	145
Papercut	Linkin Park	121
Ladies and Gentlemen	Saliva	20