Due: Monday, March 9th, 11:59 PM.
Filenames (case sensitive): authors.txt, main.cpp, song.cpp, song.h, Makefile
New concepts: string, iterators, vector.   Executable name: songs.out

For this assignment, you will write a complete program to read in the file songs.txt, and provided sorted answers to a user's requests. A user can request four types of searches: 1) by song title, sorted by artist; 2) by artist, sorted by song title; 3) by album name, sorted by song title; and 4) by song titles containing a word or phrase, sorted by artist. You will find songs.txt and, my executable in ~ssdavis/40/p7.
Further specifications:

1. Song class must contain 3 STL strings for title, artist, and album.
    1.1. An overloaded >> operator must be used to read in the values of song. You should use getline() and ignore() to read in the elements of each song. Each song is guaranteed to have four fields in songs.txt separated by 3 underscores. You should eliminate the code field.
    1.2. An overloaded << operator must be used to write the songs. The format should match mine.
    1.3. Song titles that begin with "A" or "THE" should have those words moved to their end, and prefixed by a comma. You should use string methods to accomplish this.
    1.4. Artist names should be converted to mixed case with only the first letter of each name in uppercase.
    1.5. The CD+G should be removed from albums.
    1.6. All implementation code for the Song class should be in song.cpp.
2. You will have a vector of Song that will hold all of the songs in songs.txt that is declared in main.
    2.1. You should used push_back to insert the song.
3. Found vector will hold all of the Songs that match the specified criteria.
    3.1. Fill this by traversing the Song vector, and adding matching songs to it.
4. Sorting must be done using the insertion sort taught in class, but using iterators, and the string::swap() method.
5. You may not use the [] operator, nor the at() method. Therefore, you cannot have any arrays, and all vector access will have to be done using iterators.
6. You may not use iterator pointer type arithmetic like *(itr +2), though itr++, --itr, and *itr are fine.
7. You may not use the string::c_str() method anywhere.
8. The Makefile should use the –ansi –Wall flags.

```
[ssdavis@lect1 p7]$ head songs.txt
(YOU DRIVE ME) CRAZY___SPEARS, BRITNEY___JTG0173___MILLENIUM HITS CD+G
33 ANOS___IGLESIAS, JULIO___PSG1426___LO MEJOR DE JULIO V.4 CD+G
A COUNTRY BOY CAN SURVIVE___WILLIAMS JR., HANK___PDKCO-203___CLASSIC COUNTRY V.3 DVD
A KISS TO BUILD A DREAM ON___ARMSTRONG, LOUIS___MAG6037___BEST LOVED BALLADS CD+G
A MAN WITHOUT LOVE___HUMPERDINCK, ENGELBERT___JTG0131___TOM JONES & HUMPERDNCK CD+G
A SHOULDER TO CRY ON___PAGE, TOMMY___PST0503___80'S V.37
A WINK AND A SMILE___CONNICK JR., HARRY___PRD1191___SLEEPLESS IN SEATTLE V.1
ADALIDA___STRAIT, GEORGE___PST2332___SUMMER SONGS ARE COMIN'
AFTER THE LOVIN'___HUMPERDINCK, ENGELBERT___PSG1065___ENGELBERT HUMPERDINCK CD+G
AIN'T MISBEHAVIN'___WALLER, FATS___PST0542___20'S
[ssdavis@lect1 p6]$
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```
ssdavis@lect1 p7]$ songs.out

Song Menu
0. Done.
1. Search for Artist
2. Search for Title.
3. Search for Album.
4. Search for title phrase.

Your choice: 5
Your choice must be between 0 and 4.
Please try again.


Song Menu
0. Done.
1. Search for Artist
2. Search for Title.
3. Search for Album.
4. Search for title phrase.

Your choice: 1
Please enter the artist's name: Waller, Fats
AIN'T MISBEHAVIN':Waller, Fats:20'S
IT'S A SIN TO TELL A LIE:Waller, Fats:FATS WALLER V.2

Song Menu
0. Done.
1. Search for Artist
2. Search for Title.
3. Search for Album.
4. Search for title phrase.

Your choice: 2
Please enter the title: MAN WITHOUT LOVE, A
MAN WITHOUT LOVE, A:Humperdinck, Engelbert:TOM JONES & HUMPERDNCK

Song Menu
0. Done.
1. Search for Artist
2. Search for Title.
3. Search for Album.
4. Search for title phrase.

Your choice: 3
Please enter the album: BEST LOVED BALLADS
KISS TO BUILD A DREAM ON, A:Armstrong, Louis:BEST LOVED BALLADS

Song Menu
0. Done.
1. Search for Artist
2. Search for Title.
3. Search for Album.
4. Search for title phrase.

Your choice: 4
Please enter the phrase: YOUR LOVE
THAT'S WHAT YOUR LOVE DOES TO ME:Dunn, Holly:NEW COUNTRY FEMALES V.1
WITHOUT YOUR LOVE:Tippin, Aaron:90'S COUNTRY V.34
FOR YOUR LOVE:Wonder, Stevie:1995 MALES V.2

Song Menu
0. Done.
1. Search for Artist
2. Search for Title.
3. Search for Album.
4. Search for title phrase.

Your choice: 0
[ssdavis@lect1 p7]$
```