

Lab 5 – Assigned Feb. 26, due on Friday ~~March 9 at 11:59 pm~~ moved to March 16 at 11:59pm

First, some ground rules for this and all future labs. You have achieved a level of expertise that will allow you to understand the extent and reason for these rules. The problem is that people have been using non-standard C++ (i.e. DevC++) to create their labs, and it makes it difficult for the graders to find a compiler version that accommodates these oddities. So any program that cannot be compiled on the lab computers will receive a zero grade.

Rule 1: You CANNOT use DevC++, you must use JGrasp. In fact, you should attend lab and try your program on the lab computers. If you can't, then Rules 2 thru 6 should take care of all the known issues.

Rule 2: You must put `"using namespace std;"` after the include statements in your program. You cannot simply put the command

```
std;
```

In your code, you must use

```
using namespace std;
```

Rule 3: You are not allowed to use `endl;` outside of `cout <<`. That is,

```
endl;
```

is not allowed, but

```
cout << endl;
```

is fine.

Rule 4: You cannot use any `system(" ");` command such as `system("pause");` JGrasp handles the need to pause your program automatically.

Rule 5: You cannot define your main as `void`. Your main must be:

```
int main( )
```

```
{
```

Rule 6: You cannot use an `exit;` command. To end your program, you must use `return 0;`

Objective of Lab 5: *Working with Arrays...*construct an iTunes-like database to hold at least 10 song/artist/album records.



	✓	Name	Artist	Album
1	✓	Dogsong a.k.a. Sleep Dog Lullaby	The Be Good Tanyas	Blue Horse
2	✓	Big Yellow Taxi (without Vanessa Carlton)	Counting Crows	Hard Candy
3	✓	I Will Follow You Into the Dark	Death Cab for Cutie	Plans
4	✓	If Ever There's a Reason	Derby	Posters Fade
5	✓	Days Go By (7" Mix)	Dirty Vegas	Days Go By
6	✓	How Long	The Eagles	Long Road Out Of Eden [Disc 1]
7	✓	Superman (It's Not Easy)	Five For Fighting	American Town
8	✓	100 Years	Five for Fighting	100 Years - Single
9	✓	Chariot	Gavin DeGraw	Chariot
10	✓	Wave Bye Bye	Gin Blossoms	No Chocolate Cake (Bonus Track Version)

Part 1: Create three string arrays: Song, Artist, Album. The arrays should hold 10 elements. Note that the items for each index 0-9 are correlated. That is, Song[6] goes with Artist[6] and Album[6]. You can preload the fields if you like:

```
Song[0] = "I'll Find My Way";
```

```
Artist [0] = "Derek Trucks Band";
```

```
Album[0] = "Songlines";
```

...etc.

Also, this will allow us to judge your musical taste. Don't forget to **#include <string>**

Part 2: Allow the user to enter or change any field in any record. You must create a suitable user entry menu that redispays after an operation. FOR NOW, YOU'LL EITHER HAVE TO STICK TO ONE-WORD SONGS, ARTISTS, AND ALBUMS (Spaces freak the computer out), or use the following as a substitute for the usual `cin >> variable`:

Instead of:

```
cin >> newSongName; // which can't handle strings with spaces
```

use:

```
cin.ignore( ); // calls a new cin-based FUNCTION
```

```
getline( cin, newSongName ); // will take input including spaces
```

Part 3: One of your menu items should be to print the 10 records so that all Song/Artist/Album combinations are displayed together in a nice and orderly display.

Hint 1: Read the lecture notes on Arrays and look at the sample code Arrays.cpp. DO NOT leave this lab until the last day. Working with Arrays can be tricky.

Hint 2: If you choose to use functions (which will make your program easier to write and read), you might need the following functions:

```
int printMenu( );
void printDatabase( );
void changeSong( );
void changeArtist( );
void changeAlbum( );
```

Hint 3: the following function might prove useful:

```
// function to print a menu and get the user choice
```

```
int printMenu( )
{
int choice;
cout << " _____ " << endl;
cout << " | " << endl;
cout << "|| 0. Exit Program |" << endl;
cout << "|| 1. Print Entire Database |" << endl;
cout << "|| 2. Change Song |" << endl;
cout << "|| 3. Change Artist |" << endl;
cout << "|| 4. Change Album |" << endl;
cout << "|| _____ |" << endl;
cout << "||||| " << endl;
cout << endl;
cout << "Please enter choice: ";
cin >> choice;
return choice;
}
```

Hint 4: If you use the above function, you should call it from main with an assignment statement, and then a simple series of if...else or a new "switch" statement can use the result to call the next correct function (a switch statement is equivalent to a group of if...else statements):

```
int x;
while (true)
{
x = printMenu();
switch ( x )
{
case( 0 ): return 0;
case( 1 ):
{
printDatabase();
break;
}
case( 2 ):
{
changeSong();
break;
}
}
```

.... etc

Hint 5: All of the change functions will have to first ask the user which record index to change.

Hint 6: Test your program with one-word songs, artists, and albums. Spaces sometimes freak the computer out.