CS 1050 Homework Assignment 1
Digital Music Information
Fall 2019

Due: **Friday, September 13, 2019 at 9:00 PM (No Extension). Submission system shuts off at 9pm.**

Directions
Complete the following homework assignment using the description given in each section.

Purpose
- Perform basic I/O operations using scanf and printf functions.
- Use conditional statements.
- Perform simple mathematical calculations.
- Use loops.
- Use integer and floating point data types.

Submission information:
Submit this assignment by following the instructions given below. SUBMIT ONLY the .c file (no a.out or executable file is required). Use the following submit command.

Filename must be: *sectionletter-hw1.c* (Include your respective lab section)
e.g.: c-hw1.c
$ mucs submit <class> <assignment_type> <filename>
e.g.: $ mucs submit 1050 hw c-hw1.c

Description
Your customer (we'll call him "JimR") has quite a bit of digital music. Even though this is sort of ridiculously old-school ("Who actually buys music today", says my 15-year-old daughter), you have been asked to create a music catalog system for your customer. For your first engagement with this customer, he would like to have a system that calculates the average "star rating" for sets of albums in his collection. Star ratings range from 0 stars (awful) up to 5 stars (life-changing).

You must create a system that allows a customer to choose an artist and then an album by that artist. The system should then display the average star rating for the selected album.

For the purposes of this assignment, you can assume the following data:

Artist	Album	Category	Stars
Bruce Springsteen	Greetings from Asbury Park	Rock	3
Bruce Springsteen	The Wild, The Innocent, and The E-Street Shuffle	Rock	3.5
Bruce Springsteen	Born To Run	Rock	4.5
Bruce Springsteen	Darkness On The Edge Of Town	Rock	5
Bruce Springsteen	The River	Rock	4.5
Bruce Springsteen	Nebraska	Rock	5
Steve Earle	Copperhead Road	Rock	4
Steve Earle	I Feel Alright	Rock	5
Steve Earle	El Corazon	Rock	4.5
Steve Earle	Transcendental Blues	Rock	4
The Clash	The Clash	Punk	5
The Clash	London Calling	Punk	5
The Clash	Sandinista	Punk	4
The Clash	Combat Rock	Punk	3.5
The Sex Pistols	Never Mind The Bollocks, Here's The Sex Pistols	Punk	5
P.J. Harvey	Dry	Punk	3
P.J. Harvey	Rid of Me	Punk	3
P.J. Harvey	Stories From the City, Stories From the Sea	Punk	5

The system should start with a menu showing all possible artists and ask the user to select an artist. Depending on the artist selected, the system should show a list of albums by that artist and ask the user to select one of these albums. Based on the last selection, the system should display the star rating for the album.

For example, if the user selects “P.J. Harvey” the system should display “Dry”, “Rid of Me”, and “Stories From the City, Stories From the Sea” as albums. If the user then selects “Dry”, the system should display that this is a 3-star album. Finally, the system should ask if the user wishes to continue. If so, it should go back to the main menu so the user can select another artist.

Hint: If you feel comfortable writing functions, you may certainly do that. However, we have not discussed functions in detail yet, so this assignment may be implemented with only main() if you prefer (which is how I implemented it, to make sure it wasn’t too difficult).

Bonus: In addition to showing the list of albums for each artist, add a menu item called “All Albums by this Artist”. If that option is selected, display the average star rating for all of the selected artist’s albums.

Sample Output (without bonus)

Character in **bold highlights** are inputs from the user

```
JimR@JimRArea51:~/CS1050/FS2019/Labs/HW1$ compile c-hw1.c
JimR@JimRArea51:~/CS1050/FS2019/Labs/HW1$ ./a.out
**** Digital Music Info ****


Select an artist:
1. Bruce Springsteen
2. Steve Earle
3. The Clash
4. The Sex Pistols
5. P.J. Harvey
0

** Please enter a selection from 1 to 5 **


Select an artist:
1. Bruce Springsteen
2. Steve Earle
3. The Clash
4. The Sex Pistols
5. P.J. Harvey
6

** Please enter a selection from 1 to 5 **


Select an artist:
1. Bruce Springsteen
2. Steve Earle
3. The Clash
4. The Sex Pistols
5. P.J. Harvey
1

Select an album:
1. Greetings from Asbury Park
2. The Wild, The Innocent, and The E-Street Shuffle
3. Born To Run
4. Darkness On The Edge of Town
5. The River
6. Nebraska
```

4

*** Stars = 5.0 ***

Enter 0 to exit or any other number to continue...
-3

Select an artist:
1. Bruce Springsteen
2. Steve Earle
3. The Clash
4. The Sex Pistols
5. P.J. Harvey
2

Select an album:
1. Copperhead Road
2. I Feel Alright
3. El Corazon
4. Transcendental Blues
4

*** Stars = 4.0 ***

Enter 0 to exit or any other number to continue...
0

Sample Output (with bonus)

Character in **bold highlights** are inputs from the user

```
JimR@JimRArea51:~/CS1050/FS2019/Labs/HW1$ compile c-hw1.c
JimR@JimRArea51:~/CS1050/FS2019/Labs/HW1$ ./a.out
**** Digital Music Info ****


Select an artist:
1. Bruce Springsteen
2. Steve Earle
3. The Clash
4. The Sex Pistols
5. P.J. Harvey
-5

** Please enter a selection from 1 to 5 **


Select an artist:
1. Bruce Springsteen
2. Steve Earle
3. The Clash
4. The Sex Pistols
5. P.J. Harvey
23

** Please enter a selection from 1 to 5 **


Select an artist:
1. Bruce Springsteen
2. Steve Earle
3. The Clash
4. The Sex Pistols
5. P.J. Harvey
4

Select an album:
1. Never Mind The Bollocks, Here's The Sec Pistols
2. All Albums by this Artist
3
** Please enter a selection from 1 to 2 **

Select an album:
```

```
1. Never Mind The Bollocks, Here's The Sec Pistols
2. All Albums by this Artist
0
** Please enter a selection from 1 to 2 **

Select an album:
1. Never Mind The Bollocks, Here's The Sec Pistols
2. All Albums by this Artist
2


*** Stars = 5.0 ***


Enter 0 to exit or any other number to continue...
1

Select an artist:
1. Bruce Springsteen
2. Steve Earle
3. The Clash
4. The Sex Pistols
5. P.J. Harvey
2

Select an album:
1. Copperhead Road
2. I Feel Alright
3. El Corazon
4. Transcendental Blues
5. All Albums by this Artist
5


*** Stars = 4.4 ***


Enter 0 to exit or any other number to continue...
0
```

Guidelines for Grading Homework-1
60 Points Possible (+5 bonus)

10 points – Displaying the artist menu properly, accepting input properly for this menu, and error-checking that values are within range.
10 points – Displaying the album menu properly, accepting input properly for this menu, and error-checking that values are within range.
15 points – Displaying the correct star rating, based on menu selections
10 points – Looping correctly if the user enters a non-zero value to continue
10 points – General comments, well-organized and indented code, good variable names, generally good coding style, etc.
5 points – All output formatted as shown