18.02 Assignment Instructions

Instructions: For this assignment, you are going to create some sorting methods that use insertion sort.

1. Create a folder called **18.02 Assignment** in your Module 18 assignments folder.
   a. Copy your movie class **Music.java** to your Module 18.02 Assignment folder. Rename the class **Music2.java**.
2. You are to create a class called **TestMusic2** and save it as **TestMusic2.java**.
   a. Make sure that you create an array called **myMusic**. Add the following CDs.

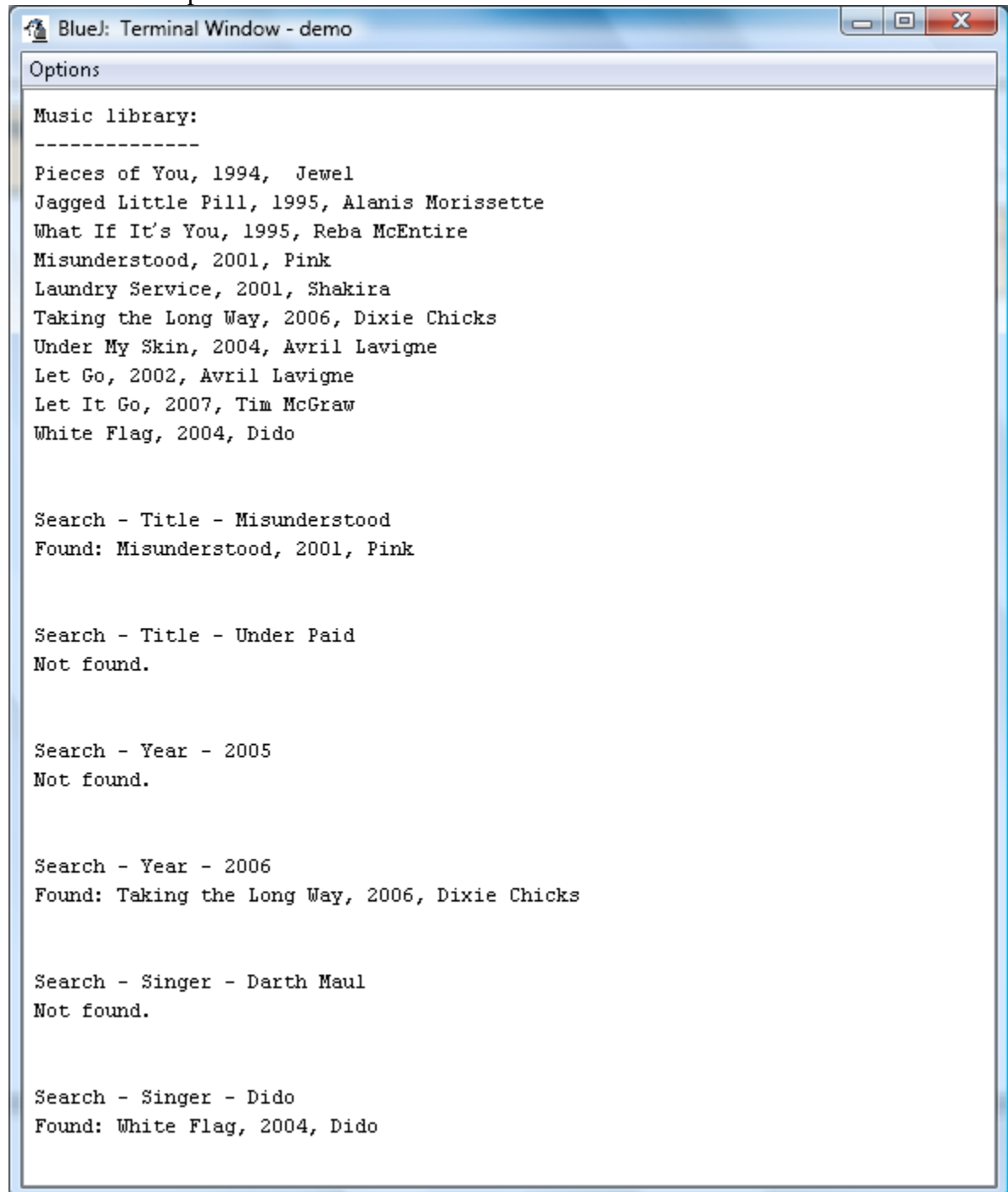| Title	Year	Singer
Pieces of You	1994	Jewel
Jagged Little Pill	1995	Alanis Morissette
What If It's You	1995	Reba McEntire
Misunderstood	2001	Pink
Laundry Service	2001	Shakira
Taking the Long Way	2006	Dixie Chicks
Under My Skin	2004	Avril Lavigne
Let Go	2002	Avril Lavigne
Let It Go	2007	Tim McGraw
White Flag	2004	Dido

   b. Create a method called **printMusic**() that traverses through the array and prints out each element.
   c. Remember that you will need to sort the data prior to conducting a binary search. You'll may use the Insertion, Selection, or Merge sort, but <u>not</u> a Bubble sort. Name the methods **insertionSort()**, **selectionSort()**, or **mergeSort()** depending on which sorting algorithm you choose to implement.
   d. Create a method called **searchTitle()** that binary searches to see if a particular title is in the list. It should have two arguments: the array and a title to find.
   e. Create a method called **searchYear()** that sequential searches to see if there are any CDs for a particular year. It should have two arguments: the array and the year you want to find.
   f. Create a method called **searchSinger()** that sequential searches for CDs belonging to a particular singer. It should have two arguments: the array and the singer's name you want to find.
   g. Test your methods, showing the results for the following searches:

Title – Misunderstood
Title – Under Paid
Year – 2005
Year – 2006

| Singer – Darth Maul |
| Singer – Dido |

Your output should be similar to that below:

```
BlueJ: Terminal Window - demo

Options

Music library:
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Pieces of You, 1994,  Jewel
Jagged Little Pill, 1995, Alanis Morissette
What If It's You, 1995, Reba McEntire
Misunderstood, 2001, Pink
Laundry Service, 2001, Shakira
Taking the Long Way, 2006, Dixie Chicks
Under My Skin, 2004, Avril Lavigne
Let Go, 2002, Avril Lavigne
Let It Go, 2007, Tim McGraw
White Flag, 2004, Dido


Search - Title - Misunderstood
Found: Misunderstood, 2001, Pink


Search - Title - Under Paid
Not found.


Search - Year - 2005
Not found.


Search - Year - 2006
Found: Taking the Long Way, 2006, Dixie Chicks


Search - Singer - Darth Maul
Not found.


Search - Singer - Dido
Found: White Flag, 2004, Dido
```