

## COM 102 – OBJECT ORIENTED PROGRAMMING POSTLAB #5

**Academic Year:** Spring 2016

**Due Date and Hour:** April 26, 2016 - Tuesday , 11.59pm (Submission)

**Course Instructor:** Assoc. Prof. Dr. I.Furkan INCE

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### 1- Create a Java Program (82 points)

Flash cards is one of the good ways to teach a foreign language words for kids. In this hoework, you are asked for developing a flash card application. That’s why, first, write a class named “FlashCard”. Each flashcard has a word in English, its correspondent in Turkish, category, definition, synonyms and its picture. (10 points)

A **category** can be *NOUN, VERB, and ADJECTIVE*.

After writing FlashCard class, write a class named as “CardCatalog” that contains FlashCard objects. It can perform a card search based on the following criteria.

**(40 points)**

- word in English
- category
- synonyms

Then, write a GUI application for producing the following output. ( 25points)

Please, before coding, draw a UML class diagram for the classes. (7 points)

**Note that** we assume that words have only one meaning just for the sake of simplicity.

Initially, inform user about the program and ask her/him asearch criteria like WORD, CATEGORY,SYNONYM.

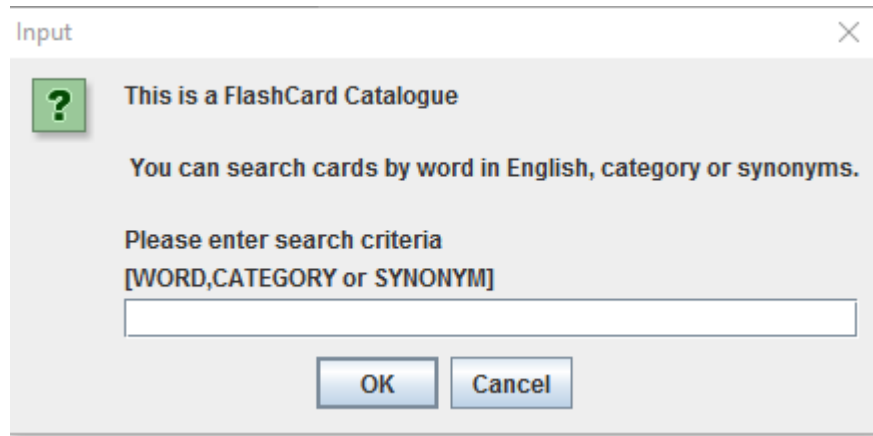


Figure 1: User information and obtaining search parameter

Then, user should enter the search parameter by using capital letters.

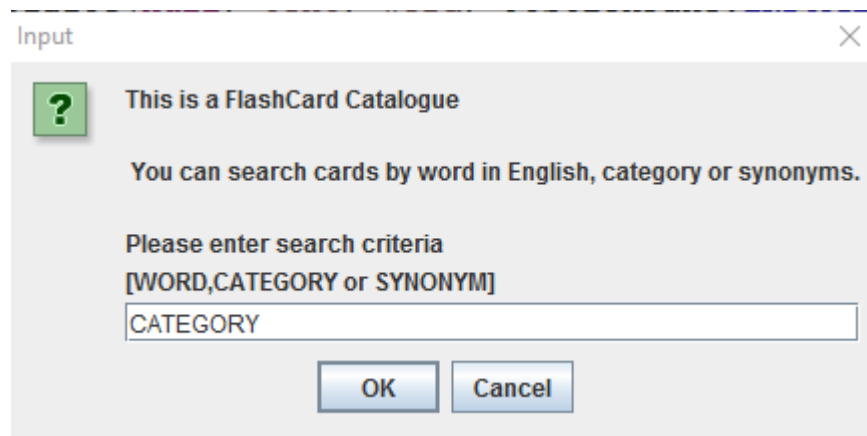


Figure 2: Obtaining parameter from user

If the user want to search category, you should ask the category type.

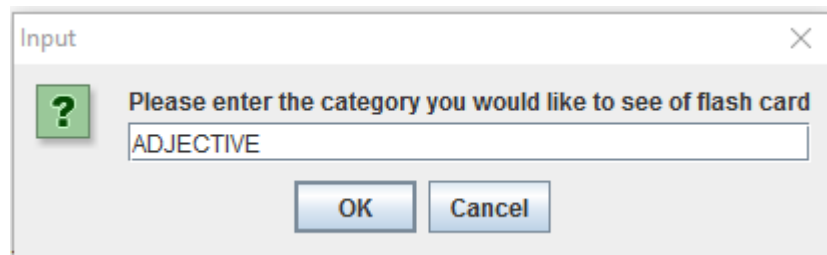


Figure 3: Asking for Category Type

Then, you should do search flash cards according to the user choice. Then, show the whole results one by one.

Let's assume that in your flash card collection contains angry, happy and sad for adjectives. You should bring all three one by one to the screen as below.

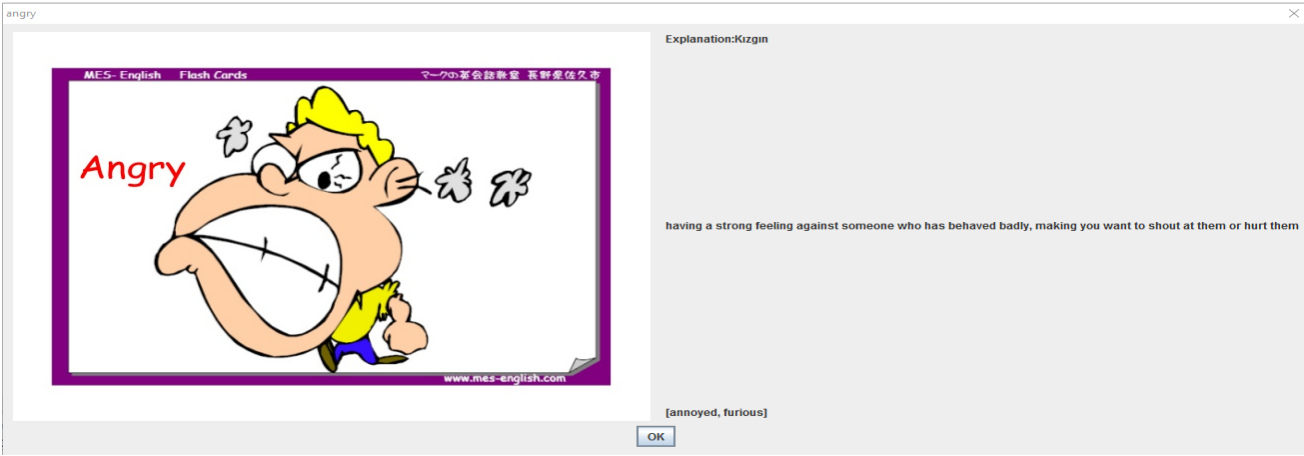


Figure 4: Adjective search results

In similar to the above, **user should be able to do word search and synonym search**. Also, you should regard the case if the search cannot find the word entered by user(eg., **you should give a meaningful message to the user saying that you cannot find such a word yet!**)

## 2- CORRECT THE CODE (6x3p = 18 points)

Please , correct the following code in terms of good programming practices and any kind of errors so that you can see the following output and just send a text file(.txt , .doc, .docx or .pdf) explaining errors and corrected versions.

```
package PostLab;

public class BubbleSortExample {

    public static void main(String args){

        int[] array = { 7; 3; 11; 4; 20; 12; 98; 78; 45; 36 };

        String output = "Array items in original order\n";

        output += arrElements(array);

        bubbleSort(array);

        output += "\n\nData items in ascending order\n";

        output += arrElements(array[]);

        System.out.println(output);
    }

    public static void bubbleSort( int arr[]){
        for ( char i = 1; i < arr.length; i++ ) {
            for ( long j = 0; j < arr.length - i; j++ ) {
                if ( arr[ j ] > arr[ j + 1 ] )
                    swap( arr, j, j + 1 );
            }
        }
    }

    public static void swap( int arr, int first, int end ){
        int temp;
        temp = arr[ first ];
        arr[ first ] = arr[ end ];
        arr[ end ] = temp;
    }

    public static String arrElements(int arr[]){
        String elements = " ";
    }
}
```

```

    for ( int i = 0; i <= arr.length; i++ )
        elements += " " + arr[ i ];

    return elements;
}

```

At the end of your correction output should be :

```

<terminated> ErroredBubbleSortExample [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (24 Mar 2014 09:58:38)
Array items in original order
 7 3 11 4 20 12 98 78 45 36

Data items in ascending order|
 3 4 7 11 12 20 36 45 78 98

```

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### **NOTES & SUBMISSION RULES :**

1. You are **required to add comment properly.**(It will be graded)
2. You are **strongly advised** to obey the good programming practices ( like naming conventions, indentations, commenting your codes and so on.) Using good programming practices is graded.
3. You are **required** to send your source code within a zipped file named :  
**COM102\_StudentNumber\_YourName\_PostLabX.zip**  
 (e.g., COM102\_011XXXX\_ArzumKarataş\_PostLab5.zip  
 COM102\_011XXXX\_FeyzaGalip\_PostLab5.zip)
4. **Be sure whether you attached your work to the e-mail or not**, because it is your responsibility to sending the work on time and in proper format.
5. You are required to **work alone**. Teamwork is **NOT** allowed and **cheating is strictly punished!**
6. You should **submit** your homework to the address following by **e-mail** on time.  
 (to [com102.2016gediz@gmail.com](mailto:com102.2016gediz@gmail.com))
7. **Late submissions** will be graded by using the formula **100 - 10\*d<sup>2</sup>** where **d** is the number of **late** submission **days**.