CS 103 Assignment 04

Question 1 (boolean methods):

Write a method called isBalanced which takes a String input and returns a Boolean result. This method checks if the number of left and right parenthesis are equal. In other words, a string is balanced if every opening parenthesis is followed by a respective closing parenthesis. In your main method create an infinite loop which takes input from console in each cycle. When the user press enter without any input program should end.

Example Output:

```
pakistan, (was born in 1947)
The parentheses are balanced.
Enter a string:
Pakistan (was(born(in)1947))
The parentheses are balanced.
Enter a string:
sjdhd(sjhjh(ahkskhd),
The parentheses are not balanced!
Enter a string:

The program ended.
```

Question2 (boolean methods):

Write a program which keeps reading numer from a user and than tells if the given number is "emirp" or not. If user enters 0, the progam shall terminate. If user enters a palindromic number, program shall print "Please enter a non-palindromic number" and continue.

Emirp Number: Emirp is "Prime" written/read from right to left. An emirp is a prime whose (base 10) reversal is also prime, but which is not a palindromic prime. For example,

17 is emirp since 17 is not palindrome, it is a prime and its reversal i.e. 71 is also prime.

Similarly, 13 is emirp as it is not a palindrom, it is prime and its reversal i.e. 31 is also prime.

Hoewever, 42 is not emirp as it is not a prime. 29 is not emirp because although it is prime and not a palindrom but its reversal i.e. 92 is not a prime. Also, 131 is not an emirp as it is a palindrome.

Link to read about emirp numbers: http://mathworld.wolfram.com/Emirp.html

Hint: For this question, you may need to parse strings to integers (parsing means converting). You may use Integer.parseInt(String number) for parsing string into integers integers. For example,

int number = Integer.parseInt("5"); //number =5

To read more about parsing, please follow this link:

https://www.oreilly.com/library/view/learning-java-4th/9781449372477/ch10s04.html

Example Output:

```
Enter a number 12
12 is not an emirp.
Enter Next number.
23
23 is not an emirp.
Enter Next number.
13
13 is an emirp.
Enter Next number.
71
71 is an emirp.
Enter Next number.
131
Please enter a non-palindromic number
42
42 is not an emirp.
Enter Next number.
0
Leaving the program
```

Question 3 (File Processing):

Write a simple note taking software which allows a user to

1) Take notes and Save Them
2) Show a given note on the screen
3) Delete a given note

You are provided with the code step 1 and step 3 above. You only need to write the code for step 2 i.e. showNote() method in Q3_Skeleton.java file.

Following is the example output.

Example Output:

```
Welcome to Simple note taker.Enter
NEW: to create a new file and save it
SHOW: to read content of a file
DELETE: to delete a file
Exit: to exit the program
> new
Enter non-empty note name: note1
Enter note: my name is naveed.
> new
Enter non-empty note name: note2
Enter note: I am an isntructpr at Ozyegin University.
> show
Enter note name: note1
my name is naveed.
> show
Enter note name: note2
I am an isntructpr at Ozyegin University.
> delete
Enter note name: note1
note1.txt is deleted!
> delete
Enter note name: note2
note2.txt is deleted!
> update
Unkown command.
> exit
The program ended.
```