Inlab 8 : Java

Refer to the general instructions and submission guidelines at the end of this document before submitting. All of the questions will be autograded. So be careful with your submission and output formats. (No request regarding wrong submission will be entertained.)

Q1- Let's start with a Welcome message. Write a program named **welcome.java** which outputs a message **"Welcome to the world of Java"** to the terminal. **(5 points)**

Q2- Write two programs which takes as input the first name and the last name and outputs if any or both of them are palindromes. (Case-insensitive) **(20 points)**

a) Input via console (**console_input.java**)

Sample test case:
Enter first name: **Elle**
Enter last name: **Weasley**

O/P: Elle is a palindrome

(Create the same interface, Words in bold are inputs.)
(O/P means output, don't print it!)

b) Input via command line arguments (**cmd_input.java**)

Sample test case:
$ javac cmd_input.java
$ java cmd_input **Elle Retter**
O/P: Elle is a palindrome
Retter is a palindrome

Q3- Write a program **search.java** which takes the following as command line arguments: **(25 points)**

1) number of elements 'n'
2) n-integers
3) An element 'x' to be searched

Prints 1 if the element exists, 0 otherwise. (Use **vectors** otherwise you will be awarded 0 marks)

Q4- Write a program **clock.java** which displays the current time (24 hr clock) and it should keep it updated every 1 second. You have to do it using a Thread by implementing a Runnable interface (otherwise you will be awarded 0 marks) **(25 points)**

You can find this link helpful to know about more about threads.

Sample output:
$ javac clock.java
$ java clock
01:06:58
01:06:59
01:07:00
01:07:01
01:07:02
01:07:03
01:07:04
01:07:05
01:07:06
01:07:07
01:07:08
01:07:09
^C$

Q5- Write a program **substrings.java** that given a string of digits, output all the contiguous substrings of length n in that string in the order that they appear. (Use **lists** otherwise you will be awarded 0 marks) (**25 points**)

For example, the string "49142" has the following 3-digit series:

- "491"
- "914"
- "142"

And the following 4-digit series:

- "4914"
- "9142"

0 < n <= length(string)

Input is taken as a command-line argument.

Sample test case:
$ javac substrings.java
$ java substrings **49142 3**

General Instructions

- Make sure you know what you write, you might be asked to explain your code at a later point in time
- Your code will be tested on hidden test cases
- Grading will be done automatically, so please make sure you stick to naming conventions
- The deadline for this lab is **Thursday, 10th October, 17:00.**

Submission Instructions

After creating your directory, package it into a tarball **`<rollno>_inlab8.tar.gz`**
The directory structure should be as follows (nothing more nothing less)

```
<rollno>_inlab8
      ├── welcome.java
      ├── console_input.java
      ├── cmd_input.java
      ├── search.java
      ├── clock.java
      └── substrings.java
```