Ira A. Fulton Schools of Engineering

school of computing, informatics, & decision systems engineering

CSE 110 – Assignment #3

Maximum points: 20 pts

Topics

- If statements (if-else, if-else if-else, nested-if statements)
- Expressions
- String methods: indexOf (String), substring(int, int), compareTo(String)

Use the following Guidelines:

- Give identifiers semantic meaning and make them easy to read (examples numStudents, grossPay, etc).
- Keep identifiers to a reasonably short length.
- User upper case for constants. Use title case (first letter is upper case) for classes. Use lower case with uppercase word separators for all other identifiers (variables, methods, objects).
- Use tabs or spaces to indent code within blocks (code surrounded by braces). This includes classes, methods, and code associated with ifs, switches and loops. Be consistent with the number of spaces or tabs that you use to indent.
- Use white space to make your program more readable.

Important Note:

All submitted assignments must begin with the descriptive comment block. To avoid losing trivial points, make sure this comment header is included in every assignment you submit, and that it is updated accordingly from assignment to assignment.

Your programming assignments require **individual** work and effort to be of any benefit. Every student must work independently on his or her assignments. This means that every student must ensure that neither a soft copy nor a hard copy of their work gets into the hands of another student. Sharing your assignments with others in any way is **NOT** permitted. Violations of the University Academic Integrity policy will not be ignored. The university academic integrity policy is found at http://www.asu.edu/studentlife/judicial/integrity.html

Part 1: Writing Exercise: (5 pts)

The following are the exercises about the expression/condition in Java.

a. Write an expression to check whether an integer variable named **num** is odd.
b. Write an expression to check whether a double-type variable named **total** is between 97 and 100.
c. Write an expression to check whether a String variable named **str** is equal to "ASU".
d. Consider the following code snippet.

```
if (!(!(a == 1) && (b == 0))) System.out.println("TRUE");
```

Describe what the values for **a** and **b** must be for the program to output "TRUE". In other words, list up all cases when the expression will be true such as (a, b) = (0, 0), (1, 0), etc. Assume that **a** and **b** can be either 0 or 1.

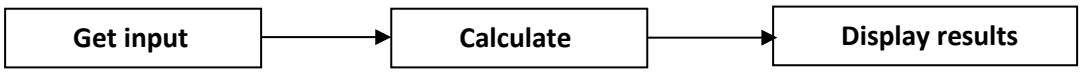
e. Assume you have two numbers, **x** and **y** (they can be take any values, positive as well as negative). Write an expression that return true if and only if one of the numbers is odd and the other even.

Note: The answers to the 5 questions (a through e) above should be typed in the block of comments in the java file such as;

```
/*
a) XXX != XXX …
…
d) (a, b) = (XXX, XXX) (XXX, XXX) …
…
*/
```

Part 2: Programming (15 pts)

Write a Java program called **Assignment3.java**. The program is to display questions and read user inputs, then calculate and print out the requested value with a proper format. This program will follow a very simple process.



- Task: Read three names one by one, and display the list in alphabetic/lexicographic order **(5 pts)**. For example, when the inputs are "Smith", "john", and "mike", it displays "John, Mike, and Smith". The first letter of output (displayed) name is always capital and the others are lower cases **(5 pts)**. If the name starts with non-

alphabetic letter, then display an error message **(5 pts)**. Look at the example execution for more details.
(*) Use the `compareTo(String)` method. (page 92)

Use only the Java statements that have been covered in class to date. **DO NOT** use any other statements (loop, array, break, sort, etc.) or topic. If in doubt, ask your TA or instructor. If you use them, then you lose the points of task.

Example Execution:
The following is an example input and output. The input is shown in red. Make your own questions rather than this example.

Example 1

```
*** TASK: Read names and display them in alphabetic order ***
Please input the first name:  Smith
     Smith is the first name.
Please input the second name: jOHN
     John is the second name.
Please input the third name: mike
     Mike is the third name
     The names are "John", "Mike", and "Smith".

*** END OF Assignment#3 ***
```

Example 2

```
*** TASK:  Read names and display them in alphabetic order ***
Please input the first name:  48AKB
     Error: The first name was not accepted.
Please input the second name: chris
     Chris is the second name.
Please input the third name: GEORGE
     George is the third name
     The names are "Chris" and "George".

*** END OF Assignment#3 ***
```

/
Submit your homework by following the instructions below:
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• Go to the course web site (my.asu.edu), and then click on the on-line Submission tab. Log in the site using the account, which was registered at the first Lab session. Make sure you use the correct email address for registration. This will allow you to submit assignments. Please use your ASU e-mail address.

• Submit your **Assignment3.java** file on-line. Make sure to choose **HW3** from drop-down box.

• The **Assignment3.java** should have the following, in order:

- In comments, the assignment Header described in "Important Note".
- In comments, the answers to questions a-e presented in Part#1.
- The working Java code requested in Part #2.
- The **Assignment3.java** file must compile and run as you submit it. You can confirm this by viewing your submission results.

Important Note: You may resubmit as many times as you like until the deadline, but we will only mark your last submission. **NO LATE ASSIGNMENTS WILL BE ACCEPTED.**