Introduction To Programming: Independent Investigative Effort 4

(See Canvas→Assignments for due dates and marks. Late submissions incur a 10% penalty on the full mark for each working date late; submission cut-off is 5 working days late. Marks turnaround time is approx. 10 working days after submissions close.)

Having trouble with watching recordings, usernames, passwords, access, etc.? Please call the RMIT IT Service and Support Centre for quick help on 03-9925 8888 and remember to ask for a reference number and pass it on to your instructor.

Need extensions or special consideration? Please apply for special consideration online.

Please follow/complete all steps below in the given sequence:

1. Please check your official RMIT Student email account for important course communication.

2.a. Watch any unwatched recordings of the **Weekly Live Lecture** and do all missed tutorials before going further. Gaps in programming concepts will lead to difficulties. If you need further help, please also watch your Group's chat recordings.

2.b. If you need help in addition to what has been shown in the compulsory weekly live lecture, you are also expected to speak to your **group tutor via discussion forums** and attend/watch their live sessions. Please note that group tutors cannot debug your assessment code on your behalf as debugging is a part of every programming assessment.

3. Check any available feedback of your previous submissions and if you have any unresolved questions or if you need further feedback, post the relevant parts of your submitted work in a new post under Canvas→Discussions→Independent Investigative Effort and ask from your instructor. E.g. you can ask "*Gayan showed _____ but I did mine like _____, so which is the better approach and why?*", etc. Please note that the university requires teaching to be conducted in an equitable manner so please only use email for matters such as special consideration.

4. How did you go during the past week? Please give feedback to Gayan so he can improve your learning experience, before it's too late, during this study period itself!

5. This week's programming task will cover some concepts required by Assignment 2 and 3. You should aim to get the help of your tutors and make further revisions.

Coding exercise steps (Hint: Need help? Ask your tutor via Canvas→Discussions→"IIE04"):
Follow Canvas→Modules→Week 4 first. We will focus exclusively on while-loops which will be necessary for upcoming Assignments. If you did not complete your IIE03, please complete it now by following the 21/Sep/2020 live lecture (without doing so, you would be missing important steps and requirements of this IIE).

Make a copy of the Week 1 Template project that uses GTerm (ensure GTerm is updated to 2020.08.25 or newer as shown during the 7/Sep weekly live lecture) and rename it to IIE04. Implement the rest of the steps in your .java file. You may need to rename the .java file to suit your application's behaviour before submission. Include justification comments as required by the assignments (refer to assignment specifications). **Your code <u>must not</u> be about student records** to obtain full marks for this; user your imagination and adapt the program.

a. Similar to IIE03, take a single input for a record (must <u>not</u> be a student record; yours must be different) with at least one sequence of characters, one character, a whole number, a number with decimal point and a true/false value. Split the input and store the individual values in to separate variables of suitable data types. Now display the contents of these variables on a single line, with the values separated by commas. (If done correctly, the output would look just like the input). Are you stuck? Please ask your friendly tutor by creating a post in the relevant IIE forum.

b. Using a while-loop in the style of "scenario 1", repeat the code from 5a. The number of times to repeat (the number of records to process) would need to be entered by the user at the start of the program. Are you stuck? Please ask your friendly tutor by creating a post in the relevant IIE forum.

c. Using while-loops in the style of "scenario 2", validate the values in the variables that were split independently. Note that you can always expect the user to enter data in the expected data type, however, the values may still be unacceptable for the logic of the program. E.g. if there is such an unacceptable value in the integer variable, the validation loop should ask the user to re-enter only that value until they enter an acceptable one. Are you stuck? Please ask your friendly tutor by creating a post in the relevant IIE forum.

d. Add justifications for your conditions. Are you stuck? Please ask your friendly tutor by creating a post in the relevant IIE forum.

e. Investigative exercise: Calculate the average of one of one or more of the numerical values and display this value on its own line. Are you stuck? Please ask your friendly tutor by creating a post in the relevant IIE forum.

f. Investigative exercise: Now modify the code (and remove relevant old code; there is no need to show the previous version separately) so that instead of using gt.println, the values are added to a table using GTerm. Independently investigate in the GTerm documentation (Javadoc) on how to <u>add a table</u> to the GTerm window and how to <u>add a row to a table</u> for each record. Are you stuck? Please ask your friendly tutor by creating a post in the relevant IIE forum.

Submission Checklist for Step 5:
a. Ensure steps above have been followed in sequence.
b. Ensure that there are no red dots (compilation errors) in your code. Code with red dots are not valid Java and cannot be marked.
c. If you have not made a final submission for your Assignment 2, make a progress/dummy submission for Assignment 2 by submitting **your .java file to** Canvas→**Assignments→Assignment 2.** Do the same for Assignment 3 as well. Remember, you can overwrite this submission any time when you have a proper submission for your assignment.
d. Take screenshots of the code and the running program (as you did for IIE01) and **only embed screenshots** in a post **under** Canvas→**Discussions→Independent Investigative Exercise 4**. Please <u>do not attach the images</u> or post your answers in any other format as this would make the submission invalid. The mark for this week's work will be given based on this submission.
e. Ensure that your files are correct. If they are not, you can edit/delete your post and retry.

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6. Optional: Make another copy of the program from #5 to perform the same via the console. All inputs must be taken via Scanner's .nextLine method and outputs must be via System.out.print or System.out.println methods. Note: This approach must not be used in major Assignments. Embed screenshots of this version of the program as a reply to your original post. **Are you stuck? Please ask your friendly tutor by creating a post in the relevant IIE forum.**