

Introduction To Programming: Independent Investigative Effort 7

Due: See [Canvas→Assignments](#) for due dates, marks and submission link.

Obtaining help method 1: Create a post in the corresponding Canvas→[Discussions→IIE forum](#), post a screenshot of your preliminary/faulty [along with a brief explanation](#) and your tutor will help in a general way. Debugging will still need to be done by the student as it is an important aspect of programming.

Obtaining help method 2: Weekly tutor chats (not to be confused with ‘live lecture’) of this week will give directions (not solutions) on how to approach this IIE. [Check recordings](#) if you cannot attend.

Getting feedback: For specific questions asked, you will receive feedback via the forum within 1-2 working days by your group tutor. If you ask during a tutor chat, you would receive feedback immediately.

Late submissions: Accepted for up to 1 week with an automatic 10% penalty for each day late (unless special consideration received).

Solution: Solution, recommended approach, common mistakes to avoid, etc. for main tasks will be shown during the [weekly live lecture](#) that starts at the time of submission.

Marks: IIEs are not tests. Marks are given based on effort and not on correctness. Marks turnaround time is approx. 10 working days after submissions close.

Access issues: For non-programming technical issues (relating to infrastructure, passwords, 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.

Extensions: For all new extensions, [apply for special consideration online](#). Contacting your tutors, instructors first will lead to delays.

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

1. Check your [official @student.rmit.edu.au email account](#) for announcements and other communication from the university. If getting in touch with your instructors, please only use this account (not Canvas inbox, messages, personal email, phone, Microsoft Teams, etc.)

2. [Watch any unwatched recordings](#) of the **Weekly Live Lecture** and complete all missed tutorials **before going further**. For your convenience, the time stamps of recordings are sent via student email/Canvas→Announcements.

3. Is there something that you have not fully grasped from what has been covered so far? Please have your doubts clarified via one of the relevant forums under [Canvas→Discussions](#). Leaving gaps has shown to be severely detrimental to learning.

4. Did you want to make any additions to the previous IIE? Please do by replying to your original post. i.e. do not edit, change the images of existing posts as it affects submission timing.

5. This week’s programming task will cover concepts required by Assignment 2. 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→"IIE07"):

Complete the 11/Jan/2021 solution first as this extends upon that work. Next follow Canvas→[Modules→Week 7](#) where the topics of creating non-static methods is explained. **Your tutors will provide further explanations on these general topics and how they relate to this IIE during their weekly “tutor chats”.** Please also follow the announcement ‘[How to debug large programs and get help on debugging...](#)’

a) In this week’s IIE, modify [your own adaptation](#) of the IIE06 student manager (which has to be different to the student manager) so that it has a console-based interface as well as a GTerm-based user interface within the same program (all within one class for now).

The constructor must now take an `int` parameter named `userInterfaceMode` which when assigned an argument of:

0: Allows the same functionality (adding and displaying of records) from IIE06 to be performed exclusively via the console (using Scanner for inputs and System.out for outputs)

1: Allows the same functionality (adding and displaying of records) from IIE06 to be performed exclusively via the GTerm. You can reuse most of the GTerm code from your adaptation of IIE06.

b) Refactor/re-organise your code so that:

1. All GTerm-based method and object member variable names start with the prefix “gui”

2. All console-based method and object member variable names start with the prefix “console”

3. Whichever code that is somewhat common to both GTerm and console approaches must be put in to common methods and object member variables. These must not have “gui” or “console” in their names. You will likely need to some create methods that accept parameters and ones that return values (sometimes both).

Tip: In IIE08, we will refactor the GUI/GTerm to one class, the console-code to another class and have the common code in yet another class to be used by the first two classes. As IIE07 is the last step before multi-class programs, it is expected it will be harder to maintain (which is what will be addressed by multi-classes in IIE08+).

An important note about Assignment 2: In Assignment 2, there must be only one interface (GTerm). It is expected that students realise that there would be a better way to implement the ability to switch between different types of user interfaces and the concepts relevant to

this will be covered when we cover multi-class programming in IIE08 (relevant to Assignment 3).

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 dummy submission for Assignment 2 by submitting **your .java file to Canvas→Assignments→Assignment 2**. Do the same for Assignments 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 embed the **screenshots in a post under Canvas→Discussions→Independent Investigative Exercise 6**. If you are unable to embed screenshots, please follow the announcement [‘Having issues embedding images? Here's the alternative...’](#) The mark for this week’s work will be given based on this submission.
- e. Download your own file(s) from the discussion forum and ensure that it is correct. If it is not, you can edit/delete your post and retry.