

ICS1015 – Logic Programming exercise #4

This is the fourth of a series of exercises you will have to complete as part of your project (worth 50% of your final mark) for this study unit. These exercises will generally be focused on (though not limited to) the material covered in the previous lecture. They are not optional, so please ensure that you do them, as otherwise this will affect your final mark.

Preparation

You will be using the Classtime online assessment tool for these exercises (instructions for this will follow). It is important you ensure that you are logged in to the university website prior to starting the exercise, and that, when Classtime asks you to log in using a Google ID, you use your @um.edu.mt ID so that you can be identified correctly. Logging in with your Google ID (ie, your @um.edu.mt ID) will also enable you to interrupt your session and log in later to complete it if this is necessary – although I would recommend that you complete the exercise all at once.

VERY IMPORTANT: You should **develop your answers using the prolog interpreter** and, **only when sure of them, copy and paste them** into the Classtime answer fields, as you will not be able to change your answers once you have submitted them.

Exercise 4

4.1 Delete an element from a list

Write clauses to implement a function, `del/3`, that takes a value and a list, and returns a list with a single occurrence of that value removed (ie, define it as `del(X,List,ResultList)`).

Now change one of the clauses so as to return a list with all occurrences of that value deleted from the list.

4.2 A Calculations on lists

Write Prolog programs to perform the following:

- 1) Find the number of items in a list.
- 2) Find the sum of a list of numbers.
- 3) Find the average of the numbers in a list (of numbers).
- 4) Find the maximum number in a list (of numbers).

When you have finished testing your programs, open www.classtime.com and use the code **7P29D** to access ex 4.1 and the code **W7K3J** to access ex 4.2. **Answer all questions.**

VERY IMPORTANT: Retain copies of your answers in case there should be any issue with the Classtime system and you should need to input them again, or I should need to see evidence of the work you have done.

Please write to me at peter.xuereb@um.edu.mt should you have any questions.