ICS1015 – Logic Programming exercise #5

This is the fifth 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 5

5.1 System predicate sublist/2

A sublist is defined as a list that makes up a contiguous part of a larger list, eg, [3,4,5] is a sublist of [1,2,3,4,5,6], whereas [2,4,5] is not.

Provide a query that shows that Win-Prolog's system predicate sublist/2 correctly detects a *sequence* in another list rather than a sublist.

5.2 Explain the bug in sublist/2

Given the code for sublist_of/2 (below), which is the equivalent of the Win-prolog predicate sublist/2, explain in your own words why the behavior in 5.1 above occurs.

```
sublist_of(_,[]):-fail.
sublist_of([X],[X|_]).
sublist_of([H|T],[H|T2]):-sublist_of(T,T2).
sublist_of([X|Y],[_|T]):-sublist_of([X|Y],T).
```

5.3 Fix the predicate sublist_of/2

Fix the above code for sublist_of/2 to work as per the given definition for a sublist.

When you have finished testing your programs, open www.classtime.com and use the code 5P43E *to access ex 5.1.* ***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.