1. (8 marks) Create a file **unionAll.pl**.

Write predicate

**union(List,List2,Result)**. This predicate union **List1** (input) and **List2** (input) to form **Result** (output). You must write this predicate from scratch. No pre-built **union** is allowed.

Test cases (1 mark each) are (**we do not type “;” in the queries**):

The order of numbers does not have to be the same as in the tests below.

|  |  |
| --- | --- |
| ?- union([],[1,2,3],R).  R = [1, 2, 3] .  ?- union([2,11,7,9,1],[2,3,9],R).  R = [11, 7, 1, 2, 3, 9] . | ?- union([1,4,2,5,6,3],[4,1,5,2,6,3],L).  L = [4, 1, 5, 2, 6, 3] .  ?- union([6,1,4,2],[7,5,2,6,0],L).  L = [1, 4, 7, 5, 2, 6, 0] . |

**unionAll(List of Lists, Result)**. This predicate union all lists from **List of Lists** (input) together to form **Result** (output).

Test cases (1 mark each) are (**we do not type “;” in the queries**):

The order of numbers does not have to be the same as in the tests below.

|  |  |
| --- | --- |
| ?- unionAll([[]],R).  R = [] .  ?- unionAll([[1,2,3],[],[2,3,4],[]],R).  R = [1, 2, 3, 4] .  ?- unionAll([[5,1,2],[6,2,3],[2,3,4,5]],R).  R = [1, 6, 2, 3, 4, 5] ;  false. | ?- unionAll([[3,1],[6,2,88],[2,3,4,11],[7,6,5]],R).  R = [1, 88, 2, 3, 4, 11, 7, 6, 5] . |

**How to submit**

Submit **unionAll.pl** in MyCourseville**.**