CS_205 Declarative Programming
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Lab Week 9 - Lists and Arithmetic

1. Some important predicates we discussed on in the lectures were the predicatesand `member/2` and `append/3`.
a) Write a query that lists all the members of the list `[2,7,10,13,15]`.
b) Using append, write a query that lists all sublists of the list `[2,7,10,13,15]`.

Hint for 1b) First create a query that produces all initial segments of the given list. For instance, [2,7,10] is an initial segment of the above list.

2. Define a predicate `betweenLR/3` such that `betweenLR(Left,X,Right)` holds iff (that is, if and only if) `Left, X, Right` are integers such that `Left < X` and `X =< Right`. Morevoer, `X` should be searchable, which means that, for example, the query

```
?- betweenLR(3,X,6).
```

should yield the answers

```
X = 4 ;
X = 5 ;
X = 6 ;
false.
```

3. Write a predicate

`mem_rem(X,L,R)`,

that for each member `X` of a list `L` also computes the list consisting of the remaining elements. i.e. if you ask the query `mem_rem(X, [2,7,10,13,15], R)`, then `X = 7, R = [2,10,13,15]` would be one of the solutions.