Foundations of Computer Science

A permutation of a list is any list that can be derived from it by re-arranging the elements. Write an ML function that returns the list of all the permutations of its argument. Explain your code clearly and carefully.

For example, applied to the list [1,2,3], your function should return the list whose elements are [1,2,3], [2,1,3], [2,3,1], [1,3,2], [3,1,2] and [3,2,1].

You may assume that the elements of the argument are distinct. The elements of the result may appear in any order.

[10 marks]