Foundations of Computer Science

This question has been translated from Standard ML to OCaml

A permutation of a list is any list that can be derived from it by re-arranging the elements. Write an OCaml 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]