HOMEWORK 3

- **Notes:**

  – How to hand in the functions you have to write in this homework will be explained later on.

  – Before writing a function study its type.

  – You have to use the same names as given for the functions to write.

  – You may use some functions we define in class.

  – You may need to define auxiliary functions.

- **Write SML functions to do the following list manipulations**

  1. **duplicate(L)**: Duplicates each element of L. For example duplicate([1,2,3])=[1,1,2,2,3,3].

  2. **order(L):** Determines if there is any order between the elements in L and returns 1 if the elements are sorted in non decreasing order, 2 in the case of non increasing order and 3 otherwise. For example order([1,1,2,3])=1, order([3,2,2,1])=2 and order([1,2,1,3])=3.

  3. **flip(L)**: Flips alternate elements of L. For example flip([1,2,3,4])=[2,1,4,3].

  4. **split(L)**: splits the list L in half. For example split([1,2,3,4])=([1,2],[3,4]) and split([1,2,3])= ([1,2],[3]). Note that the first list must have one more element if the number of elements in L is not even.

Good work!