

CSC301 Assignment #6

Due Tuesday 10/24 in Sakai.

To receive credit for these exercises you have to use **pattern matching** in your function definitions. Submit your source code and proof that your code works via Sakai.

Exercise

Write a function *more* of type $\text{int} * (\text{int list}) \rightarrow \text{int list}$ so that *more*(*e*,*L*) returns a list of elements of *L* that are strictly larger than *e*.

Exercise

Write a *quicksort* function of type $\text{int list} \rightarrow \text{int list}$. Quicksort works very similar to the mergesort but instead of halving lists the lists are split according to a pivot element. Here is a review of the quicksort algorithm: First pick an element on the input list and call it the pivot (the first element of the list is usually a good choice). Partition the rest of the list into two sublists: one with all the elements less than the pivot and one with all the elements not less than the pivot. Recursively sort the sublists. Combine the sorted sublists and the pivot into the final sorted list.