

# CS 346 – Declarative Programming

## Assignment 2

### Due Date: April 12, 2022

**Q1.** a) Using the function *filter*, write an SML function that extracts from a list the elements that are prime.

b) Using the function *foldl* or *foldr*, write an SML function that calculates the product of the elements in a list.

**Q2.** Using higher order functions, write an SML function that compares two lists.

**Q3.** Write a function that takes a function  $f$  ( $\text{int} \rightarrow \text{int}$ ) and a list of integers and returns the maximum value of  $f$  over all the elements of the List.

**Q4.** a) Write a datatype *COORDS* that defines the coordinates of a point in 3D.

b) Write a function *distance* that computes the distance between two 3D points.