Problem 1: Filter (20 min.)

- Assume there’s a function $p : A \rightarrow \text{Bool}$.
- Your job is to define a function \texttt{filter} which takes a \texttt{list} of $A$, and returns a list of those elements which satisfy $p$ (i.e., $p(A)$ is \texttt{True}).
- Define a similar function that works on \texttt{strings} instead of lists.
- If you finish early, help your classmates.
Problem 2: Fold (20 min.)

• Assume there’s a value $z : B$ and a function $f : (B, A) \rightarrow B$.

• Your job is to define a function $foldl$ which takes a list of $A$, and returns a value of type $B$ constructed by applying $f$ iteratively. For example, $foldl([1, 2, 3]) \equiv f(f(f(z, 1), 2), 3)$.

• Define a similar function that works on strings instead of lists.

• If you finish early, help your classmates. Or, define a function $foldr$ which uses a function $g : (A, B) \rightarrow B$ and associates to the right; i.e., $foldr([1, 2, 3]) \equiv g(1, g(2, g(3, z)))$. 
