

Quiz 5

CSCI 334: Spring 2024

Your name: _____

Implement the `map` function for lists in the space below. The first line is written for you.

Hint: use pattern matching.

There are many ways to solve this problem, but this first solution is probably the simplest approach.

```
let rec map (f: 'a -> 'b) (xs: 'a list) : 'b list =  
  match xs with  
  | [] -> []  
  | y::ys -> (f y)::(map f ys)
```

If you feel uncomfortable doing things all on one line, don't! Feel free to define variables to make your life easier.

```
let rec map (f: 'a -> 'b) (xs: 'a list) : 'b list =  
  match xs with  
  | [] -> []  
  | y::ys ->  
    let z = f y  
    let zs = map f ys  
    z::zs
```

How about with no pattern matching? That's fine too (it's just a little wordy).

```
let rec map (f: 'a -> 'b) (xs: 'a list) : 'b list =  
  if not (xs = []) then  
    let z = f (List.head xs)  
    let zs = map f (List.tail xs)  
    z::zs  
  else  
    []
```