

Lecture 8: Maybe Monad

*Exercise 8.1

Implement the following function in terms of `map` and `mapMaybe`:

```
mapListMaybe :: (a -> b) -> [Maybe a] -> [Maybe b]
```

Exercise 8.2

Implement the following function in terms of `map` and `mapMaybe`:

```
mapMaybeList :: (a -> b) -> Maybe [a] -> Maybe [b]
```

*Exercise 8.3

Implement the following function in terms of `andThenMaybe`; you may not use pattern matching directly:

```
joinMaybe :: Maybe (Maybe a) -> Maybe a
```

Exercise 8.4

Re-implement the following function directly (using pattern matching, not using `andThenMaybe`):

```
joinMaybe :: Maybe (Maybe a) -> Maybe a
```

And then implement `andThenMaybe` in terms of `joinMaybe` and other `*Maybe` functions (you may not use pattern matching directly).