Example evaluations of `allR` and `allL`

Contents

All

The function `all :: [Bool] -> Bool` returns `True` if all values in a list are `True`, and `False` otherwise

```
1   -- all computer from the right
2   allR :: [Bool] -> Bool
3   allR list = case list of
4     []   -> True
5     x:xs -> x && (allR xs)
6
7   -- acronym with an accumulator
8   allL :: [Bool] -> Bool
9   allL = allAcc True
10
11  allAcc :: Bool -> [Bool] -> Bool
12  allAcc acc list = case list of
13    []   -> acc
14    x:xs -> allAcc (acc && x) xs
```

All evaluation from the right

Example of evaluation of `allR`

```
allR [True, False, True, True]
```

All evaluation from the right

Example of evaluation of `allR`

```
allR [True, False, True, True]
= True && (allR [False, True, True])
```

All evaluation from the right

Example of evaluation of `allR`

```
allR [True, False, True, True]
= True && (allR [False, True, True])
```

All evaluation from the right

Example of evaluation of `allR`

```
allR [True, False, True, True]
= True && (allR [False, True, True])
= True && (False && (allR [True, True]))
```

All evaluation from the right

Example of evaluation of `allR`

```
allR [True, False, True, True]
= True && (allR [False, True, True])
= True && (False && (allR [True, True]))
```

All evaluation from the right

Example of evaluation of `allR`

```
allR [True, False, True, True]
= True && (allR [False, True, True])
= True && (False && (allR [True, True]))
= True && (False && (True && (allR [True])))
```

All evaluation from the right

Example of evaluation of `allR`

```
allR [True, False, True, True]
= True && (allR [False, True, True])
= True && (False && (allR [True, True]))
= True && (False && (True && (allR [True])))
```

All evaluation from the right

Example of evaluation of `allR`

```
allR [True, False, True, True]
= True && (allR [False, True, True])
= True && (False && (allR [True, True]))
= True && (False && (True && (allR [True])))
= True && (False && (True && (True && (allR []))))
```

All evaluation from the right

Example of evaluation of `allR`

```
allR [True, False, True, True]
= True && (allR [False, True, True])
= True && (False && (allR [True, True]))
= True && (False && (True && (allR [True])))
= True && (False && (True && (True && (allR []))))
```

All evaluation from the right

Example of evaluation of `allR`

```
allR [True, False, True, True]
= True && (allR [False, True, True])
= True && (False && (allR [True, True]))
= True && (False && (True && (allR [True])))
= True && (False && (True && (True && (allR []))))
= True && (False && (True && (True && True)))
```

All evaluation from the right

Example of evaluation of `allR`

```
allR [True, False, True, True]
= True && (allR [False, True, True])
= True && (False && (allR [True, True]))
= True && (False && (True && (allR [True])))
= True && (False && (True && (True && (allR []))))
= True && (False && (True && (True && True)))
```

All evaluation from the right

Example of evaluation of `allR`

```
allR [True, False, True, True]
= True && (allR [False, True, True])
= True && (False && (allR [True, True]))
= True && (False && (True && (allR [True])))
= True && (False && (True && (True && (allR []))))
= True && (False && (True && (True && True)))
= True && (False && (True &&  True))
```

All evaluation from the right

Example of evaluation of `allR`

```
allR [True, False, True, True]
= True && (allR [False, True, True])
= True && (False && (allR [True, True]))
= True && (False && (True && (allR [True])))
= True && (False && (True && (True && (allR []))))
= True && (False && (True && (True && True)))
= True && (False && (True &&  True))
= True && (False &&  True)
```

All evaluation from the right

Example of evaluation of `allR`

```
allR [True, False, True, True]
= True && (allR [False, True, True])
= True && (False && (allR [True, True]))
= True && (False && (True && (allR [True])))
= True && (False && (True && (True && (allR []))))
= True && (False && (True && (True && True)))
= True && (False && (True &&  True))
= True && (False &&  True)
```

All evaluation from the right

Example of evaluation of `allR`

```
allR [True, False, True, True]
= True && (allR [False, True, True])
= True && (False && (allR [True, True]))
= True && (False && (True && (allR [True])))
= True && (False && (True && (True && (allR []))))
= True && (False && (True && (True && True)))
= True && (False && (True &&  True))
= True && (False &&  True)
= True &&  False
```

All evaluation from the right

Example of evaluation of `allR`

```
allR [True, False, True, True]
= True && (allR [False, True, True])
= True && (False && (allR [True, True]))
= True && (False && (True && (allR [True])))
= True && (False && (True && (True && (allR []))))
= True && (False && (True && (True && True)))
= True && (False && (True &&  True))
= True && (False &&  True)
= True &&  False
= False
```

All evaluation from the left

Example of evaluation of `allL`

```
allR [True, False, True, True]
```

All evaluation from the left

Example of evaluation of `allL`

```
allR [True, False, True, True]
= allAcc True [True, False, True, True]
```

All evaluation from the left

Example of evaluation of `allL`

```
allR [True, False, True, True]
= allAcc True [True, False, True, True]
= allAcc (True && True) [False, True, True]
```

All evaluation from the left

Example of evaluation of `allL`

```
allR [True, False, True, True]
= allAcc True [True, False, True, True]
= allAcc (True && True) [False, True, True]
= allAcc ((True && True) && False) [True, True]
```

All evaluation from the left

Example of evaluation of `allL`

```
allR [True, False, True, True]
= allAcc True [True, False, True, True]
= allAcc (True && True) [False, True, True]
= allAcc ((True && True) && False) [True, True]
= allAcc (((True && True) && False) && True) [True]
```

All evaluation from the left

Example of evaluation of `allL`

```
allR [True, False, True, True]
= allAcc True [True, False, True, True]
= allAcc (True && True) [False, True, True]
= allAcc ((True && True) && False) [True, True]
= allAcc (((True && True) && False) && True) [True]
= allAcc ((((True && True) && False) && True) && True) []
```

All evaluation from the left

Example of evaluation of `allL`

```
allR [True, False, True, True]
= allAcc True [True, False, True, True]
= allAcc (True && True) [False, True, True]
= allAcc ((True && True) && False) [True, True]
= allAcc (((True && True) && False) && True) [True]
= allAcc ((((True && True) && False) && True) && True) []
= (((True && True) && False) && True) && True
```

All evaluation from the left

Example of evaluation of `allL`

```
allR [True, False, True, True]
= allAcc True [True, False, True, True]
= allAcc (True && True) [False, True, True]
= allAcc ((True && True) && False) [True, True]
= allAcc (((True && True) && False) && True) [True]
= allAcc ((((True && True) && False) && True) && True) []
= (((True && True) && False) && True) && True
```

All evaluation from the left

Example of evaluation of `allL`

```
allR [True, False, True, True]
= allAcc True [True, False, True, True]
= allAcc (True && True) [False, True, True]
= allAcc ((True && True) && False) [True, True]
= allAcc (((True && True) && False) && True) [True]
= allAcc ((((True && True) && False) && True) && True) []
= (((True && True) && False) && True) && True
= ((True && False) && True) && True
```

All evaluation from the left

Example of evaluation of `allL`

```
allR [True, False, True, True]
= allAcc True [True, False, True, True]
= allAcc (True && True) [False, True, True]
= allAcc ((True && True) && False) [True, True]
= allAcc (((True && True) && False) && True) [True]
= allAcc ((((True && True) && False) && True) && True) []
= (((True && True) && False) && True) && True
= ((True && False) && True) && True
```

All evaluation from the left

Example of evaluation of `allL`

```
allR [True, False, True, True]
= allAcc True [True, False, True, True]
= allAcc (True && True) [False, True, True]
= allAcc ((True && True) && False) [True, True]
= allAcc (((True && True) && False) && True) [True]
= allAcc ((((True && True) && False) && True) && True) []
= (((True && True) && False) && True) && True
= ((True && False) && True) && True
= (False && True) && True
```

All evaluation from the left

Example of evaluation of `allL`

```
allR [True, False, True, True]
= allAcc True [True, False, True, True]
= allAcc (True && True) [False, True, True]
= allAcc ((True && True) && False) [True, True]
= allAcc (((True && True) && False) && True) [True]
= allAcc ((((True && True) && False) && True) && True) []
= (((True && True) && False) && True) && True
= ((True && False) && True) && True
= (False && True) && True
```

All evaluation from the left

Example of evaluation of `allL`

```
allR [True, False, True, True]
= allAcc True [True, False, True, True]
= allAcc (True && True) [False, True, True]
= allAcc ((True && True) && False) [True, True]
= allAcc (((True && True) && False) && True) [True]
= allAcc ((((True && True) && False) && True) && True) []
= (((True && True) && False) && True) && True
= ((True && False) && True) && True
= (False && True) && True
= False && True
```

All evaluation from the left

Example of evaluation of `allL`

```
allR [True, False, True, True]
= allAcc True [True, False, True, True]
= allAcc (True && True) [False, True, True]
= allAcc ((True && True) && False) [True, True]
= allAcc (((True && True) && False) && True) [True]
= allAcc ((((True && True) && False) && True) && True) []
= (((True && True) && False) && True) && True
= ((True && False) && True) && True
= (False && True) && True
= False && True
```

All evaluation from the left

Example of evaluation of `allL`

```
allR [True, False, True, True]
= allAcc True [True, False, True, True]
= allAcc (True && True) [False, True, True]
= allAcc ((True && True) && False) [True, True]
= allAcc (((True && True) && False) && True) [True]
= allAcc ((((True && True) && False) && True) && True) []
= (((True && True) && False) && True) && True
= ((True && False) && True) && True
= (False && True) && True
= False && True
= False
```