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COP4020

APPLY TO LOCKHEED CWEP

- All “variables” and functions are immutable.
- `++` \leftarrow concatenation operator
- `:` \leftarrow cons operator, faster than `++` for prepending single values to the front of lists
- `!!` \leftarrow index operator to get element from a list

```
1 = [1,2,3,4]
1 !! 2 -- returns 3
```

- `/=` is the operator for not equal
- `drop n` \leftarrow drops `n` number of elements from the head of the list
- since lists are immutable an easy way to change indexes of an array
 - `xs` is just documentation shorthand for “list of elements”

```
changeSubscriptValue xs index newValue = take index xs ++ [newValue] ++ drop (index+1) xs
```

- `let` can simplify list comprehensions

```
-- equivalent statements
-- ANDing is just adding more statements with a comma
-- ORing requires `||`
[x*3 | x<-[1..10], x*3 >= 12, x*3 == 9]
[t3 | x<-[1..10], let t3 = x*3, t3 >= 12, t3 == 9]
```

- usage of backtick turns functions into infix operators

```
-- equivalent statments
mod 19 3 -- returns 1
19 `mod` 3
```