LECTURE 5 27/11

List memory

```
val a = listOf(...) // this never changes
val a = mutableListOf(...) // we can modify the list
var a = listOf(...) // we can reassign a to another fixed list
var a = mutableListOf(...) // we can modify the list and reassign it
```

Maps

```
val grades =
  mapOf(
    Pair("A", 41),
    Pair("B", 88)
  )

grades["A"] // 41
grade.get("A") // 41

val grades =
  mutableMapOf(
    Pair("A", 41),
    Pair("B", 88)
  )

grades.put("D", 9)
```

💡 Set<Map.Entry<String,Int>>

Nulls

```
fun uppercase(str: String?): String = str?.toUpperCase() ?: ""
```

💡 str?.toUpperCase(): will only try to apply function if str is not null

💡 ?: is the return if it is null

filterNotNull()/mapNotNull()

```
listOf("Hello", null, "bye").filterNotNull() //returns ["Hello","bye"]: List<String>
```

Hints for lab

- map