

prog func

Higher order functions (HOF)

function that takes as an argument another function or that returns another function. currying

```
def sum(f: Int => Int)(a: Int, b: Int): Int =  
    if (a > b) 0 else f(a) + sum(f)(a + 1, b)  
// sum of squares between a and b  
sum(x => x * x)(2,3)  
// sum of cubes between a and b  
sum(x => x * x * x)(2,3)
```

tips and tricks

- use `require` like python `assert`
- there is only one true constructor

```
class Rational(x: Int, y: Int)  
    require(y > 0, "denominator must be positive")  
    val num = x / gcd(abs(x), y);  
    val den = y / gcd(abs(x), y);  
    def this(x: Int) = this(x,1)
```