Currying

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Currying is a mechanism where we can translate the evaluation of a function that takes multiple arguments into evaluating a sequence of functions that take a single argument.

one function taking multiple arguments → transform to → multiple functions taking one argument each

```
function add(a,b){
    return a+b
}
```

```
function addNum1(a){
return function addNum2(b){
        return a+b
    }
}
```

** The reason why we're able to achieve this is because function addNum2 has access to variable a due to closures

So now, how do we use this function?

- addNum1(5)(3) and not addNum1(5,3)
  because addNum1 only takes one argument and it returns a function so result of addNum1(5) is a function (addNum2) and we want to pass the second argument to addNum2

Alright, why would someone even do this in the first place??

Let's say we just call

→ addNum1(3)(5)

this will return us a function, so let's store it for future use

→ const addToNum5 = addNum1(5)

// sometime in future

→ addToNum5(3)

→ addToNum5(4)

we're trying to run less code in future by storing ~~addNumTo~~ addToNum5 for future and not running it everytime

Compose

* The data processing that we do should be obvious

Example:

Let's say we want to make a paste from 5 ingredients mixed together.

item1 —add→ item2 —blend→ newItem —add→ item3

Final Product ← blend ┘

So final product is made from item1, item2, item3 and the order doesn't matter

What compose says is we should be able to do the following

item2 —add→ item3 —blend→ newItem —add→ item1

Final Product ← blend ┘

* Composability is a system design principle

A highly composable environment components can be assembled in various combinations and still get the right output

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Code example :-

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Let's say we have a negative number, we want to multiply it with another number and return the absolute value

-2 * 3 → -6 absolute 6

Let's compose these together

1) const composedResult =

compose(multiplyBy3, returnAbsolute)

↓

we need to define our own compose func.

~~const compose = (f, g) =>~~

2) const compose = function(funcA, funB) {
3) return function (data) {
4) return funcB(funcA(data))
}

↘ we can also do funcA (funcB(data))

>> composedResult(-2)

→ 6

Let's assume multiplyBy3 and returnAbsolute are defined.

On line one we're calling compose function that takes 2 functions as arguments and returns a function (line 3), this function is stored in composedResult. We can now call composedResult with any data (-2) and it applies funcB on result of funcA