

Info2

Andrey Rybalchenko, Ruslán Ledesma Garza

FP in der Küche

```
print( "Nehmen Sie Nudeln und Tomatensauce" );  
print( "Nudeln aufwärmen" );  
print( "Tomatensauce aufwärmen" );  
  
print( "Nehmen Sie Zwiebeln und Kartoffeln" );  
print( "Zwiebeln braten" );  
print( "Kartoffeln braten" );
```

```
print( "Nehmen Sie X und Y" );  
print( "X Aktion" );  
print( "Y Axtion" );
```

```
function cook( i1, i2, f ) {  
    print("Nehmen Sie " + i1 + " und " + i2);  
    f(i1);  
    f(i2);  
}  
  
function warmup(x) { print( x + " aufwärmen" ); }  
function fry(x)    { print( x + " braten" ); }  
  
cook( "Nudeln", "Tomatensauce", warmup );  
cook( "Zwiebeln", "Kartoffeln", fry );
```

```
cook( "Nudeln",  
      "Tomatensauce",  
      function(x) { print(x + "aufwärmen"); } );
```

```
cook( "Zwiebel",  
      "Kartoffeln",  
      function(x) { print(x + "braten"); } );
```

FP im Büro

```
function power2print() {  
    var a = [1,2,3];  
  
    for (i=0; i<a.length; i++)  
        a[i] = a[i] * 2;  
  
    for (i=0; i<a.length; i++)  
        print(a[i]);  
}
```

Abbilden: MAP

```
function map(fn, a) {  
    for (i = 0; i < a.length; i++)  
        a[i] = fn(a[i]);  
}  
  
map( function(x){return x*2;}, a );  
  
map( print, a );
```

```
function sum(a) {  
    var s = 0;  
    for (i = 0; i < a.length; i++)  
        s += a[i];  
    return s;  
}
```

```
function concat(a) {  
    var s = "";  
    for (i = 0; i < a.length; i++)  
        s += a[i];  
    return s;  
}
```

```
print( sum([1,2,3]) );
```

```
print( concat(["a","b","c"]) );
```

Zusammenfügen: REDUCE

```
function reduce(fn, a, init) {  
  var s = init;  
  for (i = 0; i < a.length; i++)  
    s = fn( s, a[i] );  
  return s;  
}
```

```
function sum(a) {  
  return reduce( function(a, b){ return a + b; },  
                a, 0 );  
}
```

```
function join(a) {  
  return reduce( function(a, b){ return a + b; },  
                a, "" );  
}
```

FP in verteilten Systemen

At Google, [MapReduce](#) was used to completely regenerate Google's index of the World Wide Web.

<http://en.wikipedia.org/wiki/MapReduce#Uses>

FP in der Wissenschaft

The Isabelle theorem prover is an interactive theorem prover, [...]. It is an LCF-style theorem prover (written in [Standard ML](#)), so it is based on a small logical core guaranteeing logical correctness.

[http://en.wikipedia.org/wiki/Isabelle_\(proof_assistant\)](http://en.wikipedia.org/wiki/Isabelle_(proof_assistant))

FP in Finanzmärkten

Software development candidates should have:

+ Top-notch programming skills, with an interest in (but not necessarily experience with) [functional programming languages](#).

<http://janestreet.com/apply/software.php>

FP in Software-Industrie

F# is a type safe, succinct, efficient and expressive **functional programming language**, targeting .NET and other Common Language Infrastructure (CLI) platforms. [...] F# is now a first class language in Visual Studio 2010

<http://www.tryfsharp.org/About.aspx>