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На C# и F#

DOTNEXT

Марк Шевченко

Тридцать лет программирования

Московский Клуб Программистов
CraftTalk

[@markshevchenko](https://markshevchenko.pro)

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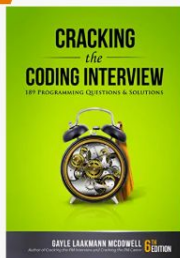
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RESULTS

Best Seller



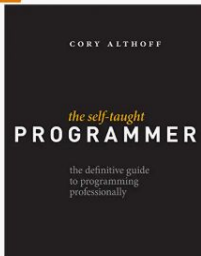
Cracking the Coding Interview: 189 Programming Questions and Solutions

by Gayle Laakmann McDowell | Jul 1, 2015

★★★★★ ~ 7,681

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The Self-Taught Programmer: The Definitive Guide to Programming Professionally

by Cory Althoff | Dec 26, 2016

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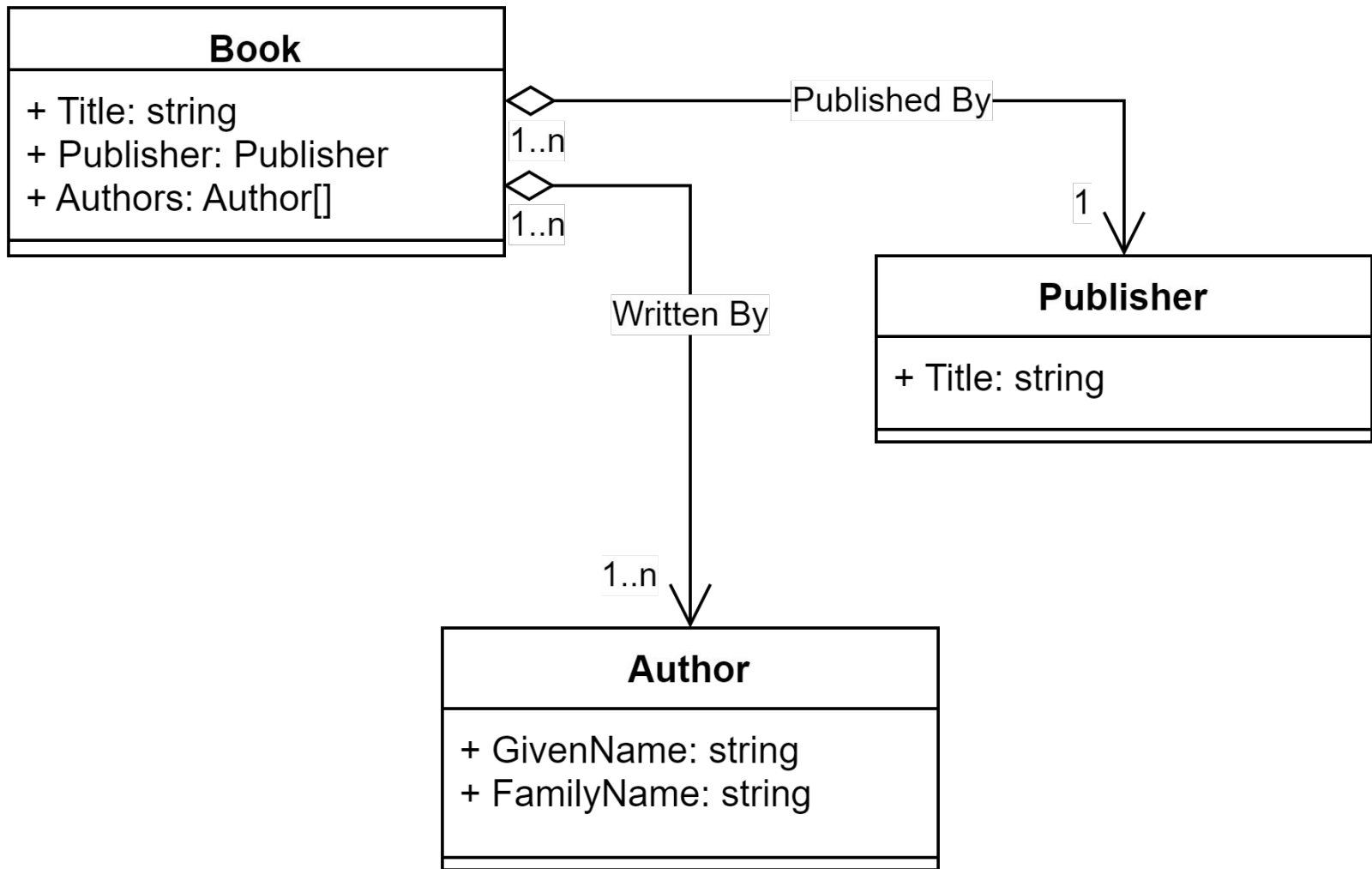
Code: The Hidden Language of Computer Hardware and Software

by Charles Petzold | Aug 7, 2022

★★★★★ ~ 30

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```
class Book
{
    public string Title { get; init; }

    public Publisher Publisher { get; init; }

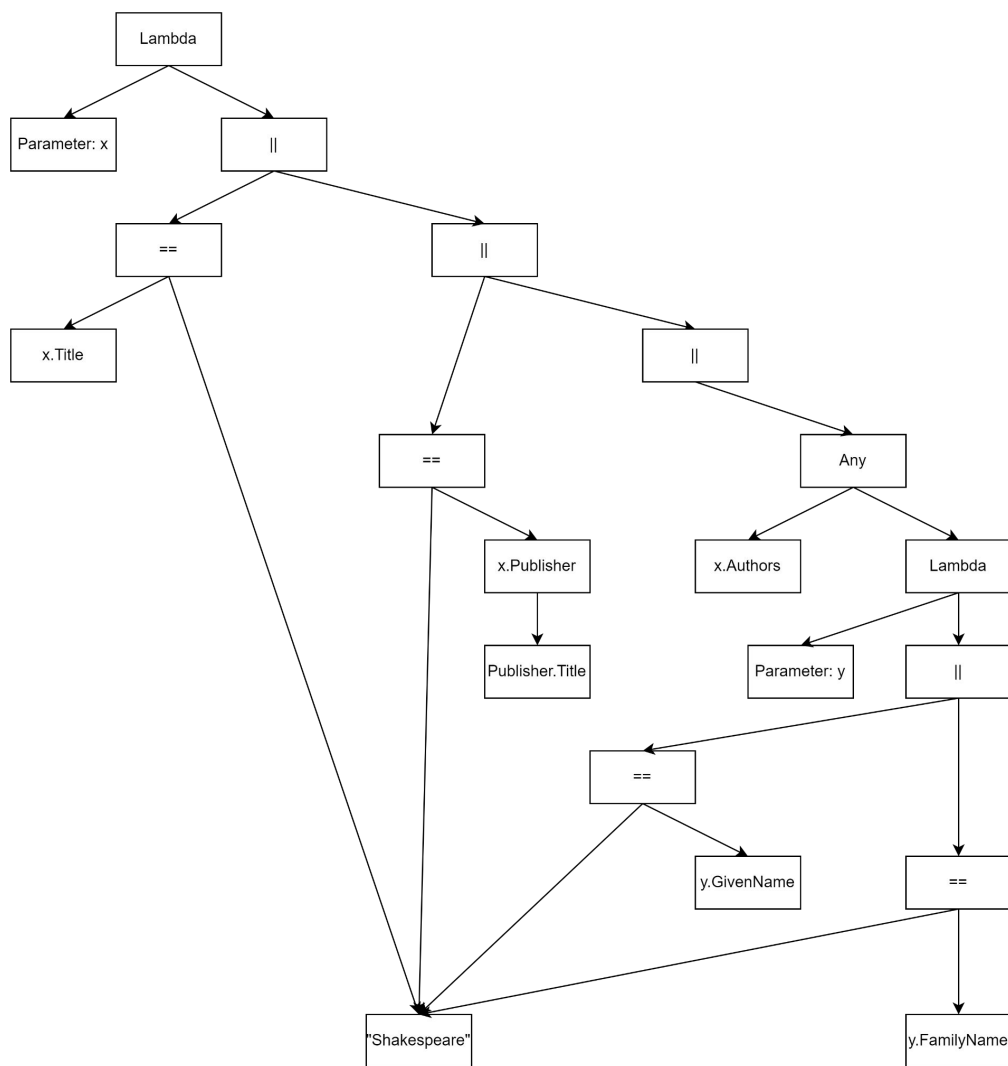
    public Author[] Authors { get; init; }
}
```

```
class Publisher
{
    public string Title { get; init; }
}
```

```
class Author
{
    public string GivenName { get; init; }

    public string FamilyName { get; init; }
}
```

```
books.Where(x => x.Title == "Shakespeare"  
            || x.Publisher.Title == "Shakespeare"  
            || x.Authors.Any(y => y.GivenName == "Shakespeare"  
                                || y.FamilyName == "Shakespeare"))
```



Практика...

$$(ax(x+3))' = a(x+3) + ax$$

$$(f(x) + g(x))' = f'(x) + g'(x)$$
$$(f(x)g(x))' = f'(x)g(x) + f(x)g'(x)$$

Практика...



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Бесконечные последовательности

```
> fibonacci = 0 : 1 : zipWith (+) fibonacci (tail fibonacci)
> take 20 fibonacci
[0,1,1,2,3,5,8,13,21,34,55,89,144,233,377,610,987,1597,2584,4181]
```

```
> fibonacci = 0 : 1 : zipWith (+) fibonacci (tail fibonacci)
```

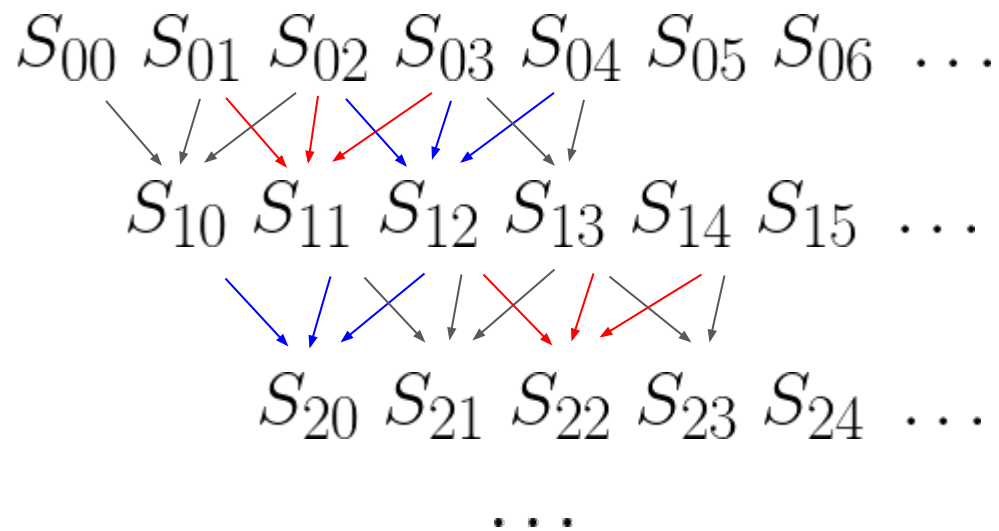
~~1~~ 1 1 2 3 5 8 13 ...
0 1 1 2 3 5 8 13 ...



Практика...

$$\frac{\pi}{4} = 1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \frac{1}{9} - \dots$$

$$T_n = S_{n+2} - \frac{(S_{n+2} - S_{n+1})^2}{S_n - 2S_{n+1} + S_{n+2}}$$



$$\ln(1+x) = x - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} + \frac{x^5}{5} - \dots$$

$$|x| \leq 1, x \neq -1$$

$$\ln x = (x-1) - \frac{(x-1)^2}{2} + \frac{(x-1)^3}{3} - \frac{(x-1)^4}{4} + \frac{(x-1)^5}{5} - \dots$$

$$|x-1| \leq 1, x \neq 0$$

Полноправные граждане

$$\sqrt{a}$$

$$x_1 = 1$$

$$x_{n+1} = \frac{x_n + \frac{a}{x_n}}{2}$$

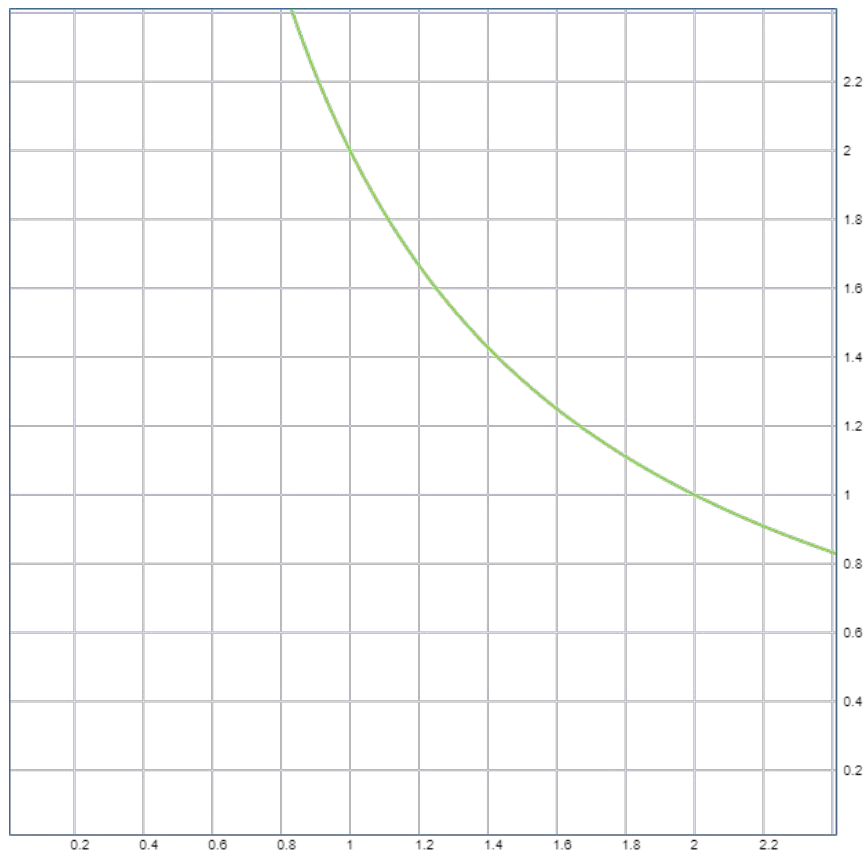
$$|a - x_{n+1}^2| \leq 0.001a$$

Практика...

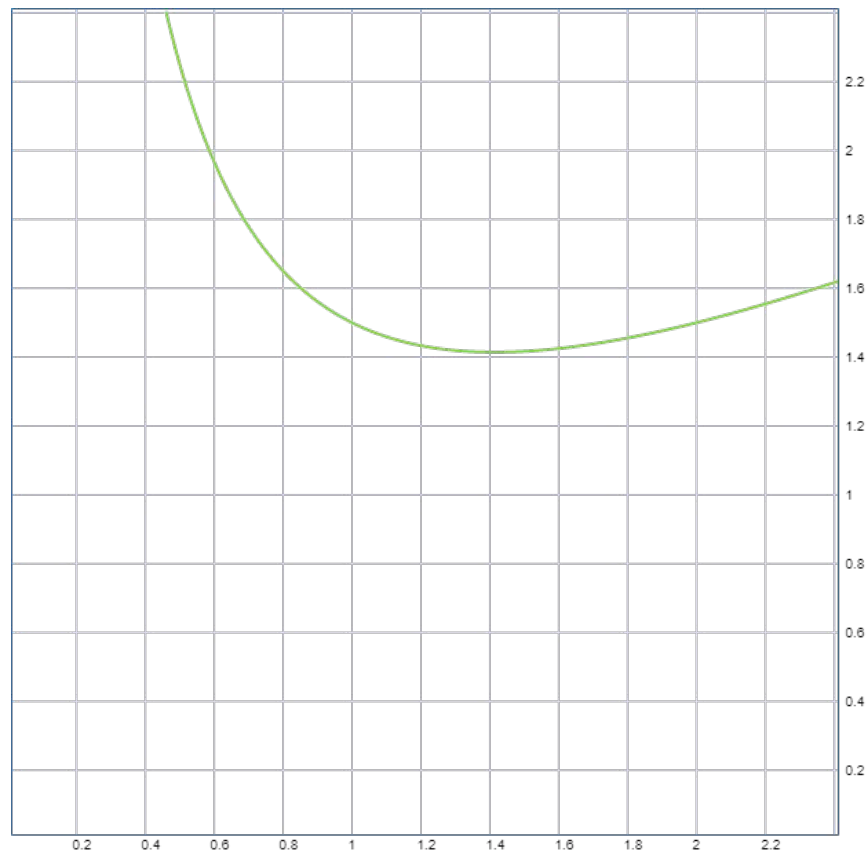
$$f(x) == x$$

$$x_{n+1} = f(x_n) \quad |f'(x)| < 1$$

$$|x_{n+1} - x_n| < |0.001x_n|$$



$$y = \frac{2}{x}$$



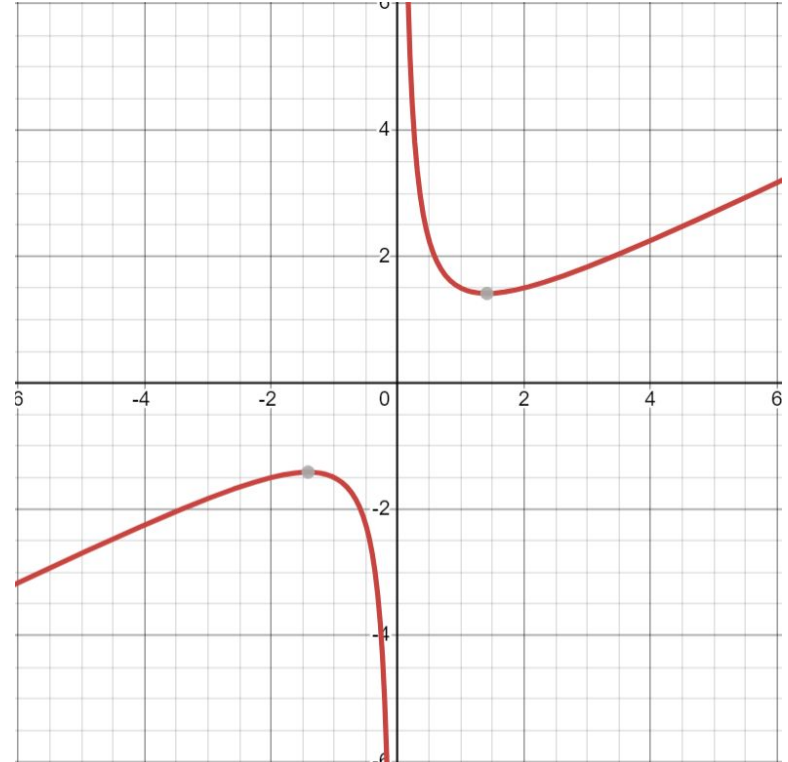
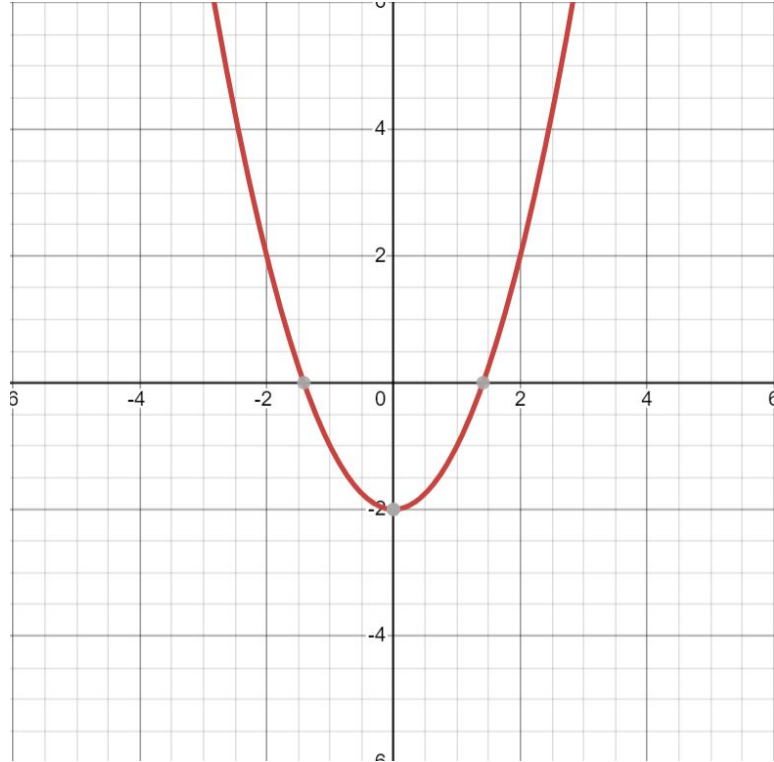
$$y = \frac{x^2 + 2}{2x}$$

Практика...

$$g(x) == 0$$

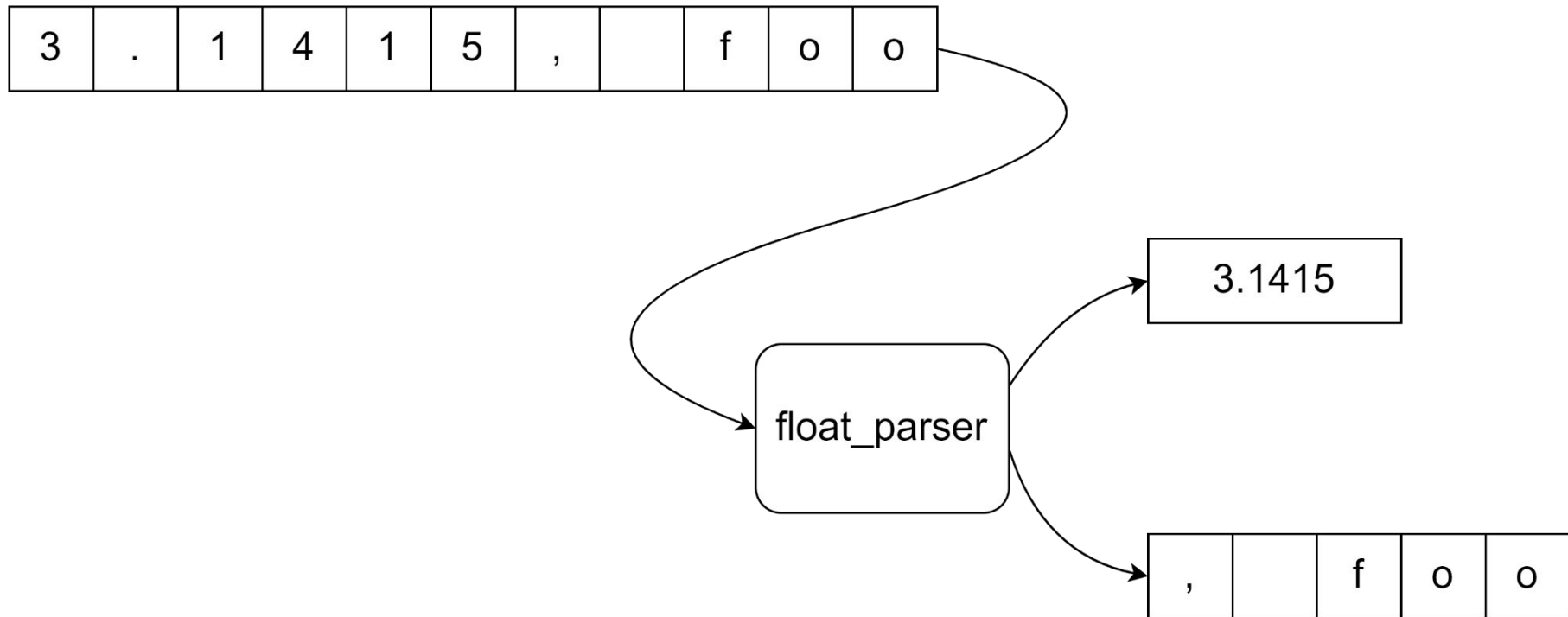
$$f(x) = x - \frac{g(x)}{g'(x)}$$

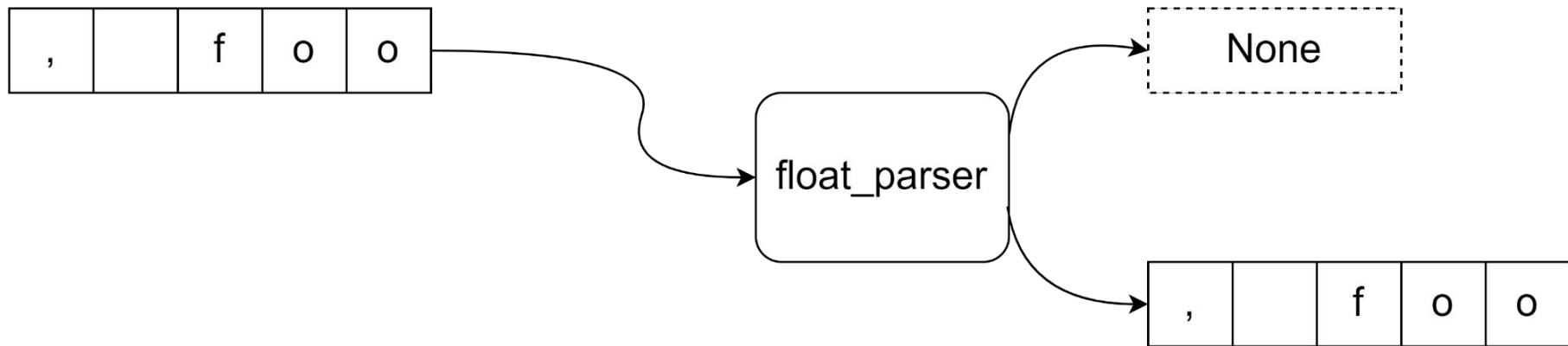
$$g(x) = x^2 - a$$



Практика...

Лексический и синтаксический разбор





Практика...

```
value = number  
      | (expression)  
      | "sin" value
```

```
star = "*" value  
slash = "/" value  
term = value (star | slash)*
```

```
plus = "+" term  
minus = "-" term  
expression = term (plus | minus)*
```



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Ссылки

- [Структура и интерпретация компьютерных программ](#)
- <https://github.com/markshevchenko/sysharp>
<https://www.nuget.org/packages/SySharp/>
- <https://github.com/stephan-tolksdorf/fparsec>
- <https://github.com/markshevchenko/dotnext-2022-autumn>

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Марк Шевченко

@markshevchenko

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