SOFTWARE ENGINEER TRAINING

Coding, Engineering and Specific Language

Summary

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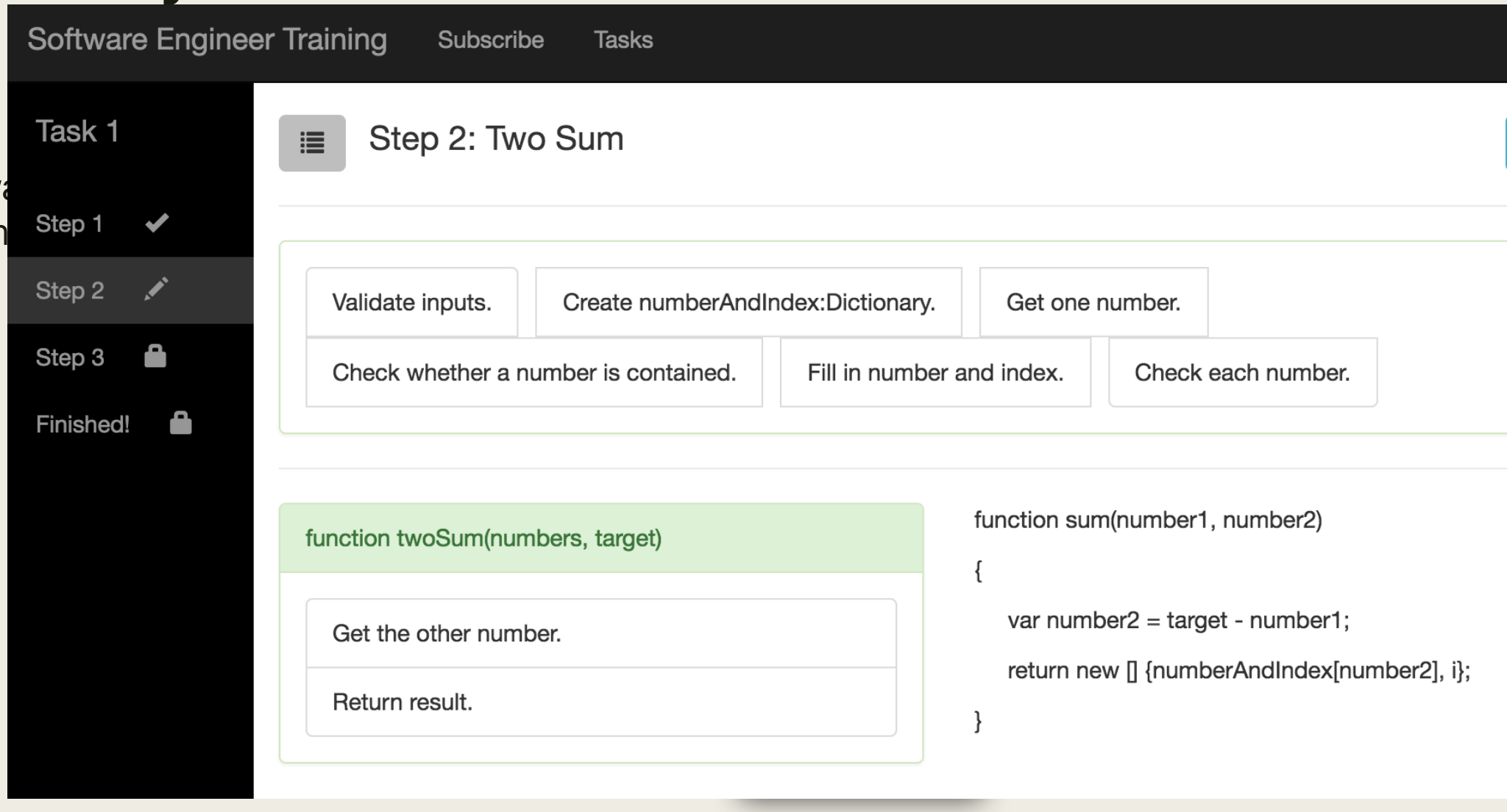
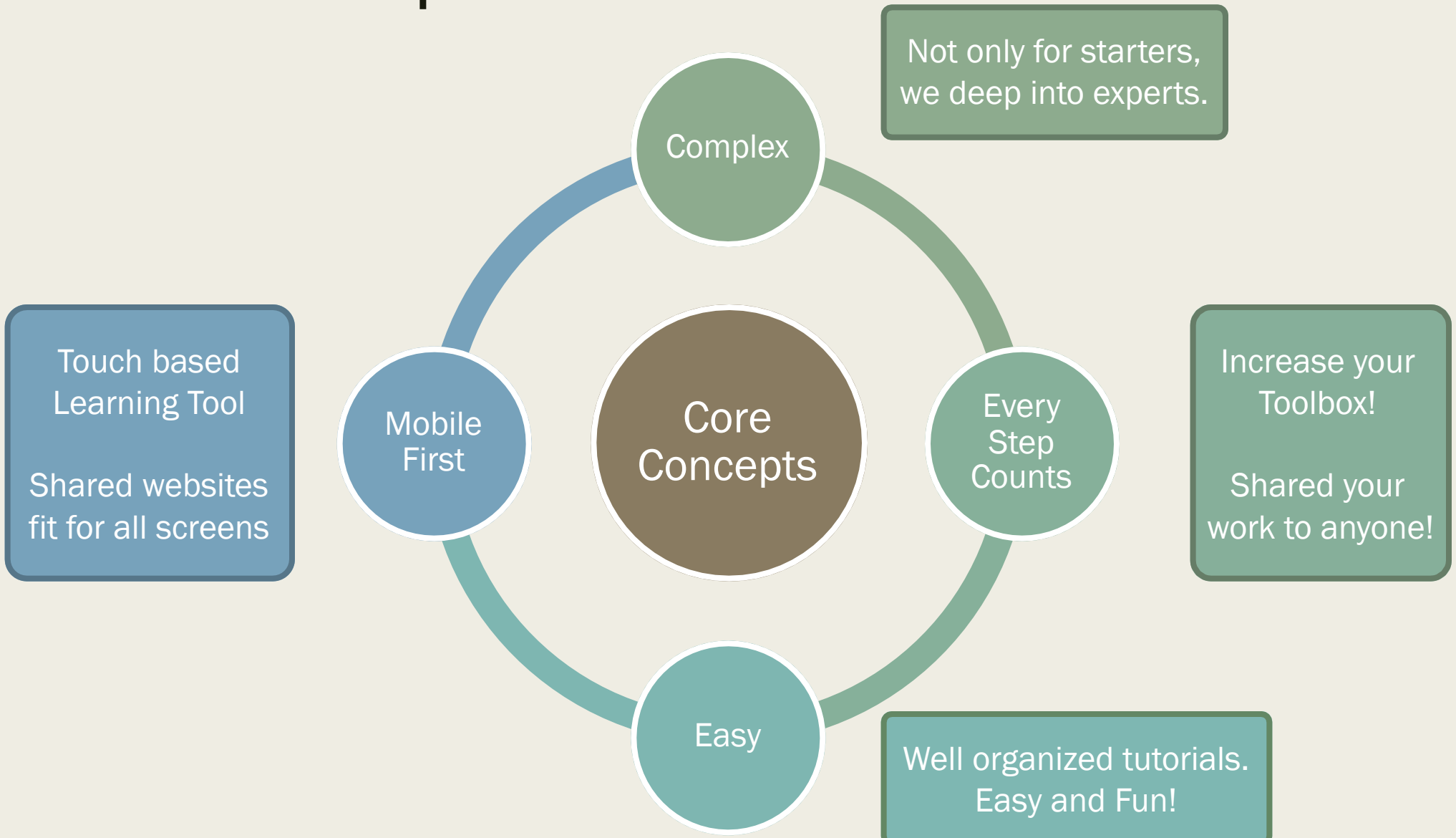


Core Concepts

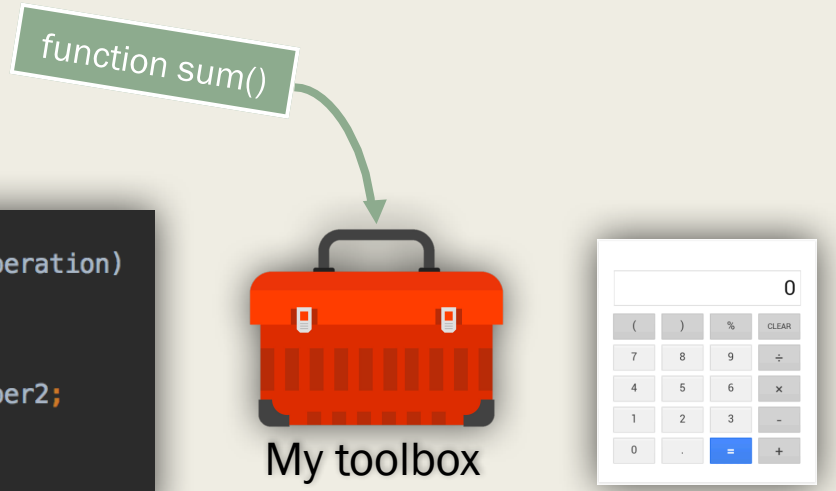


Example: Basic Calculator – Task 1

Make sure a task → Find a solution → Gain and share

```
describe("Test a basic calculator.", function()
{
    it("1 + 2 = 3", function()
    {
        var result = calculate(1, 2, "+");
        expect(result).toEqual(3);
    });
});
```

```
function calculate(number1, number2, operation)
{
    switch (operation)
    {
        case "+": return number1 + number2;
    }
}
```



Example: Basic Calculator – Task 2

New requirement → Refactor code → Gain and share

```
describe("Test a basic calculator.", function()
{
    it("1 + 2 = 3", function()
    {
        var result = calculate(1, 2, "+");
        expect(result).toEqual(3);
    });

    it("3 - 1 = 2", function()
    {
        var result = calculate(3, 1, "-");
        expect(result).toEqual(2);
    });
});
```

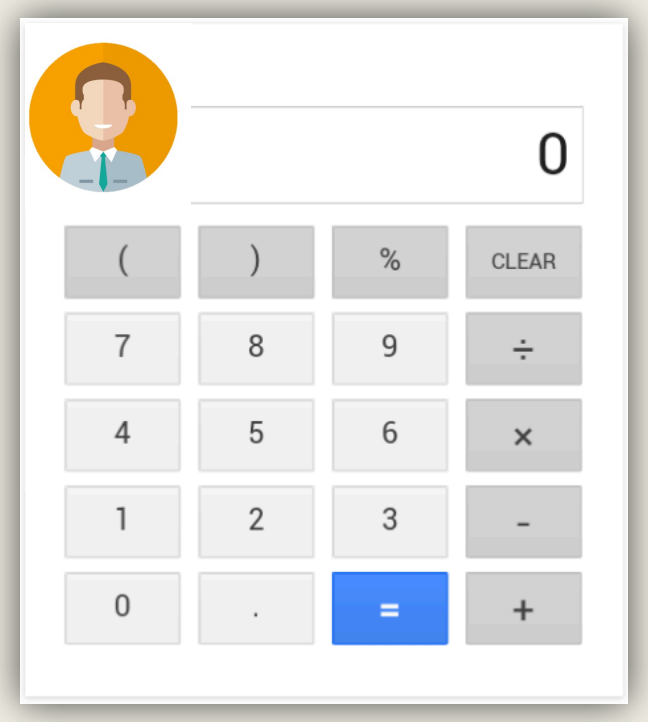
```
//Factory Pattern
abstract class Operation
{
    private _number1: number;
    private _number2: number;

    set number1(num: number)
    {
        this._number1 = num;
    }

    set number2(num: number)
    {
        this._number2 = num;
    }

    abstract getResult(): number;
}

class AddOperation extends Operation
{
     getResult():number
     {
         return this.number1 + this.number2;
     }
}
```

```
interface OperationFactory
{
    getOperation():Operation;
}

class AddOperationFactory implements  OperationFactory
{
    getOperation(): Operation
    {
        return new AddOperation();
    }
}
```

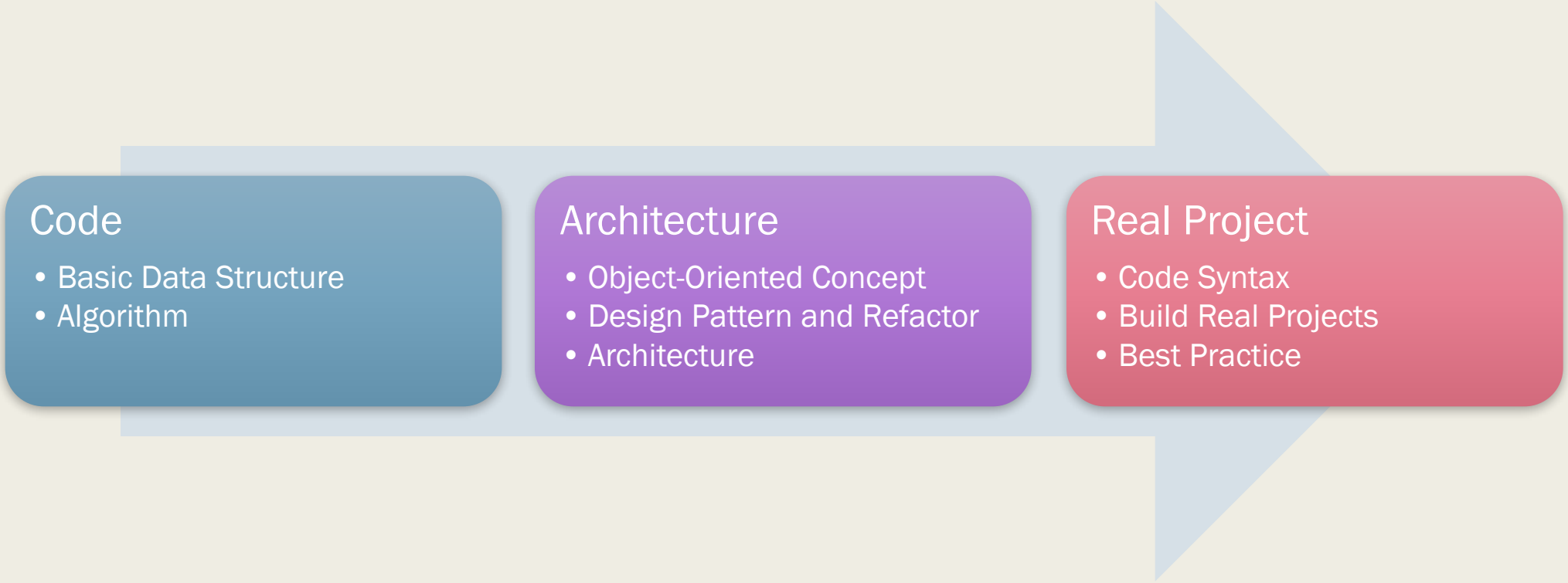
```
const operation = new AddOperationFactory();
operation.number1 = 1;
operation.number2 = 2;
var result = operation.getOperation().getResult();

bootstrap(AppComponent);
```

Example: Basic Calculator – Task 3

Decorate → Share your app



Learning Path



Marketing

Push Strategy

Training Schools
(Online and Physical)

Learners

Self-Learning website

Pull Strategy

Self-Learning website

Our Teaching System

Training Schools
(Online and Physical)

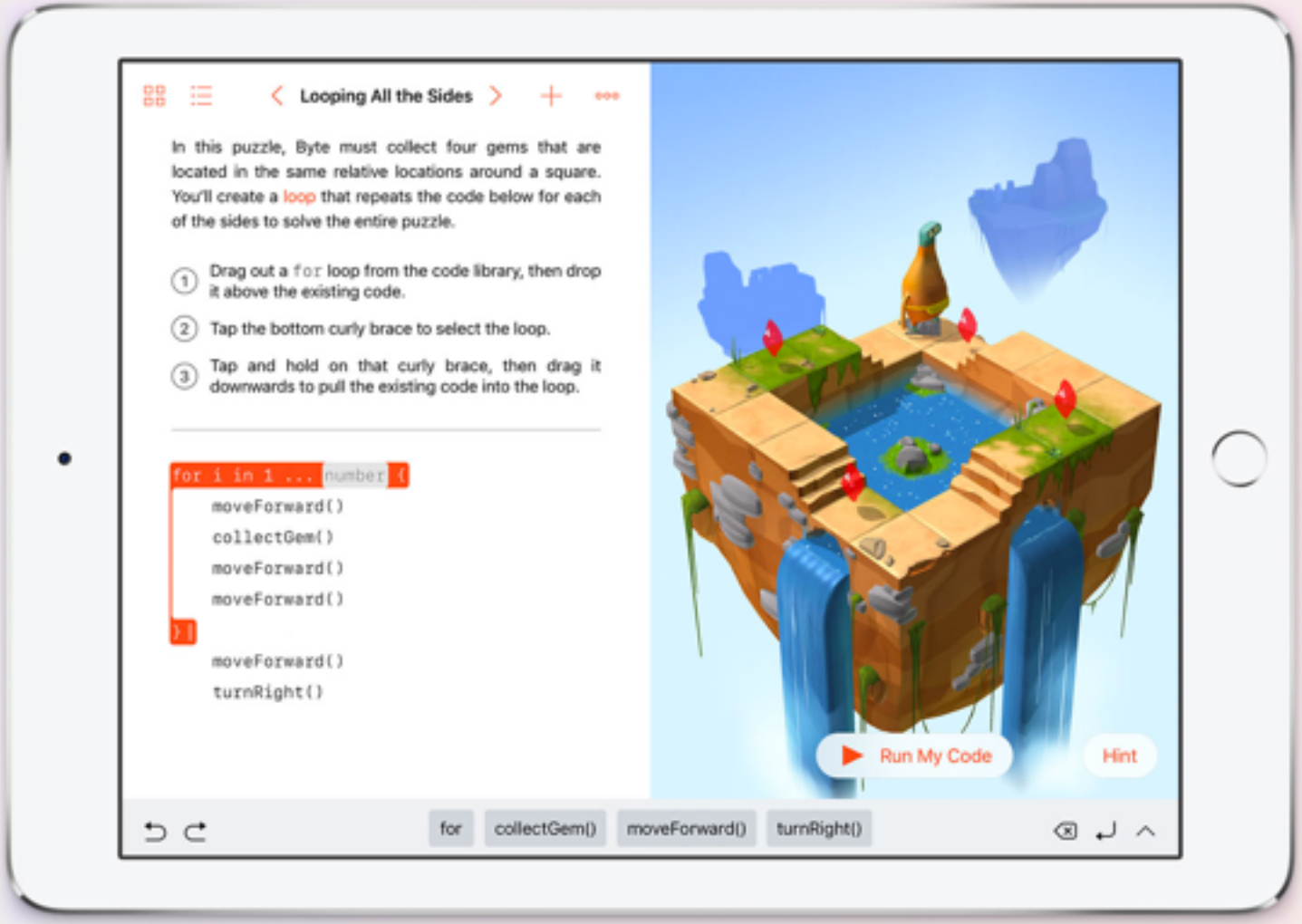
Learners

Competitor

By 2020, 1.4 million jobs for computer scientists will exist, but right now, there are only 400,000 people who will be trained to fill those roles, according to the U.S. Bureau of Labor Statistics.

- Apple - Swift Playgrounds
- Language-oriented learning websites
- Videos and books learning

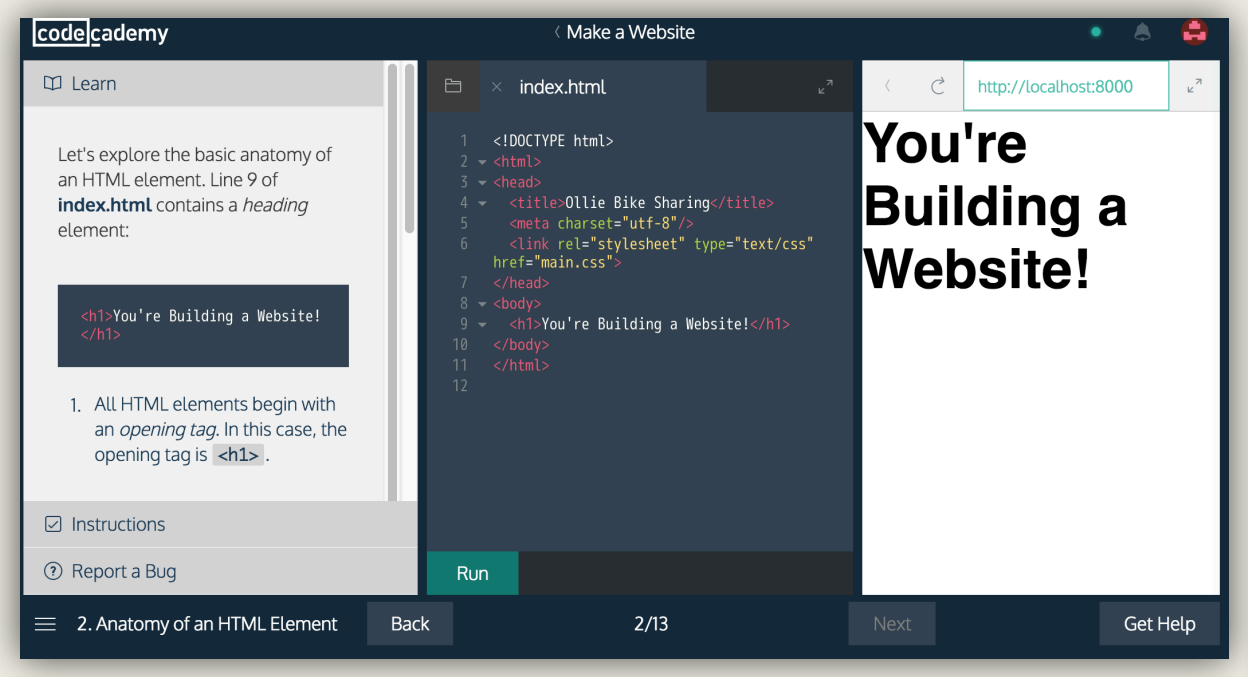
Game Learning

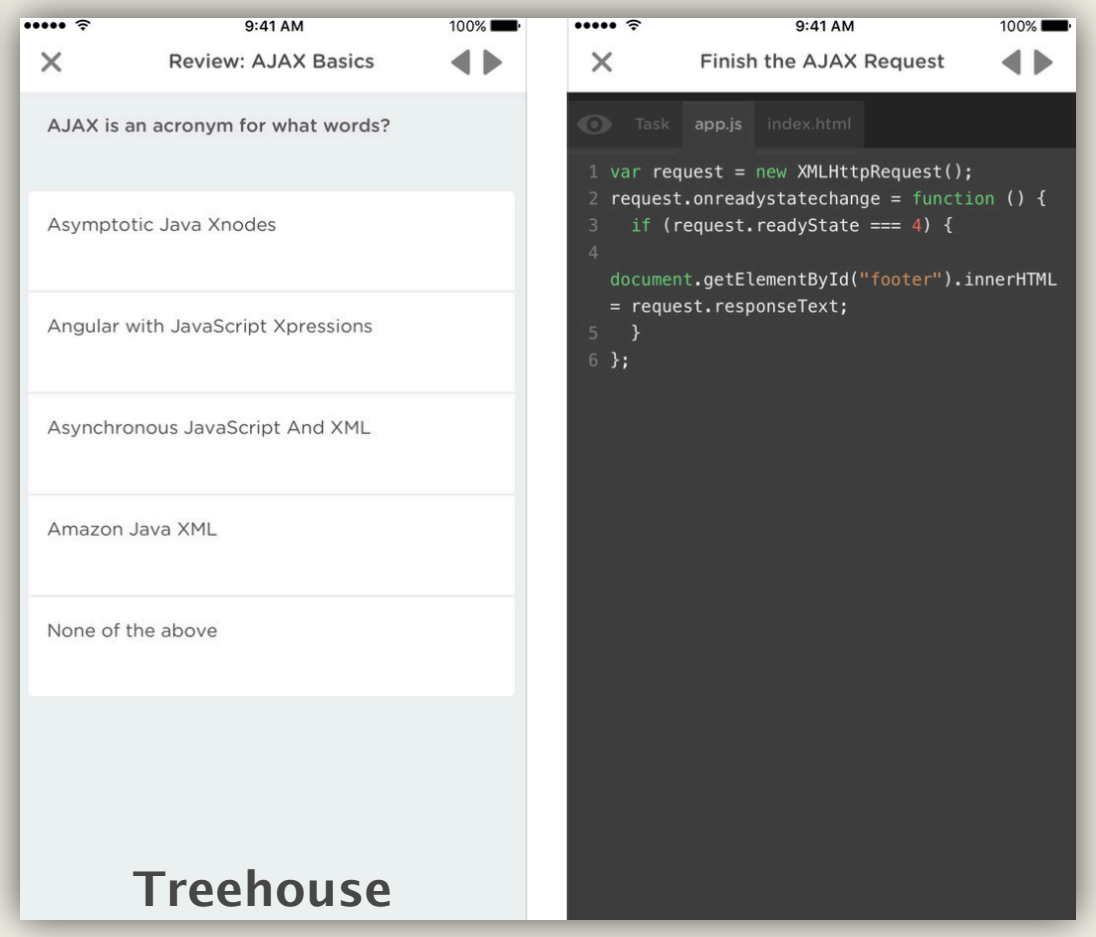


Good for starters

Hard to deep in

Language-Oriented Learning Website

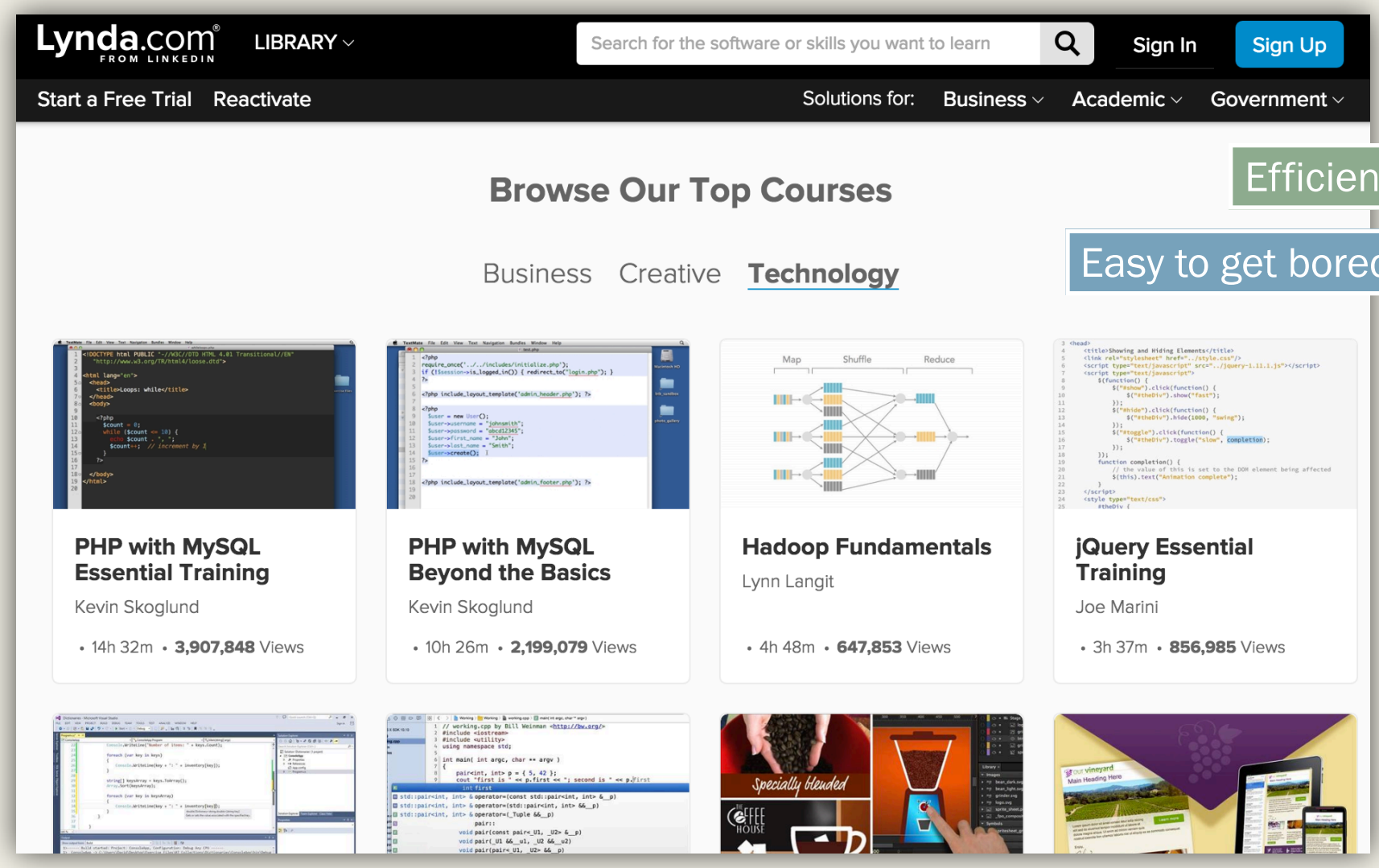




Good to master a language

It is weak to learn core knowledge for all languages because they combine basic concepts into specific languages.

Videos and Books Learning



Efficient

Easy to get bored

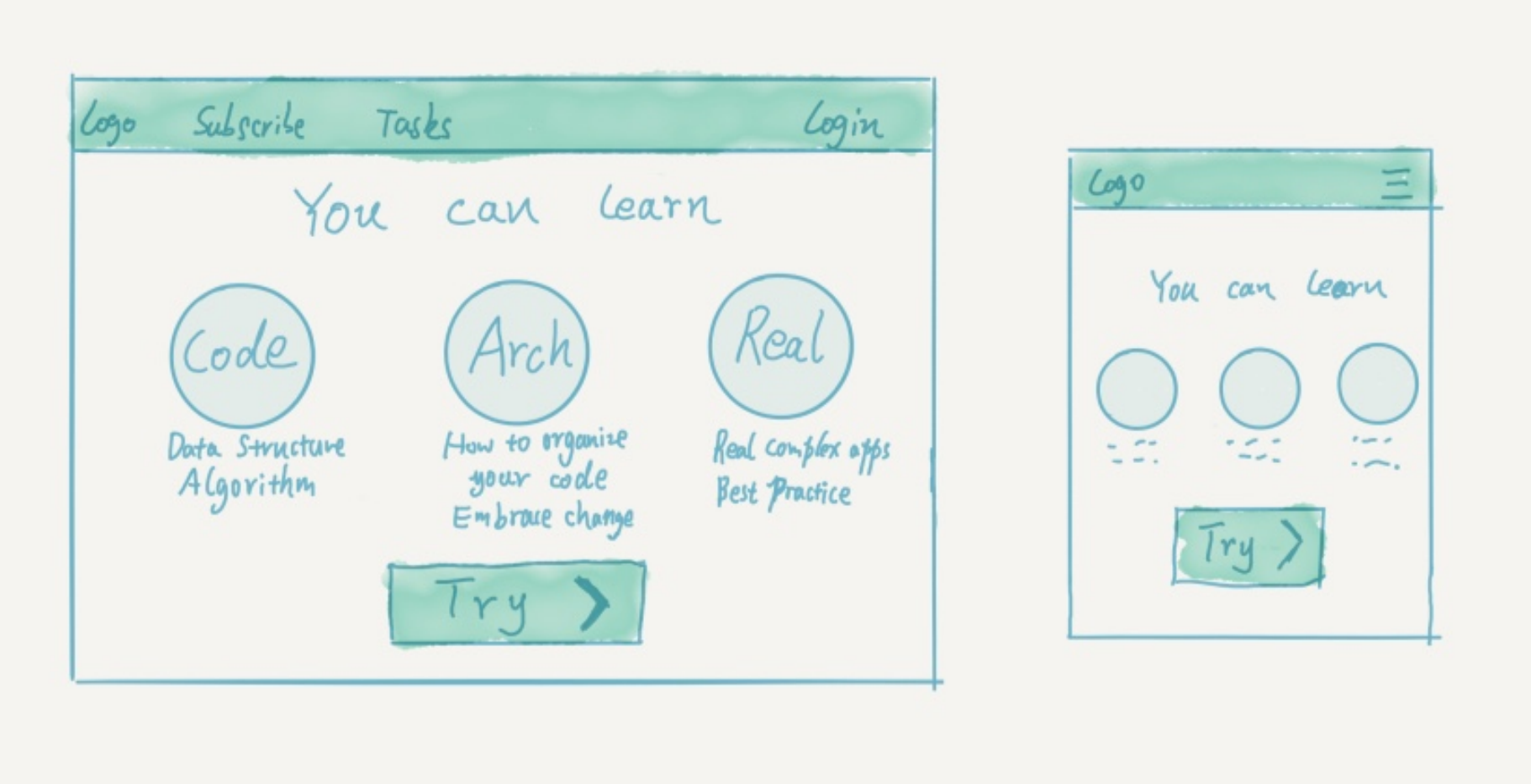
Revenue Stream

- Subscription fee for individuals.
- Free to use for training schools.
- Development fee for customized requirements from training schools.
- Advertising revenue from training schools.

Three Years Plan

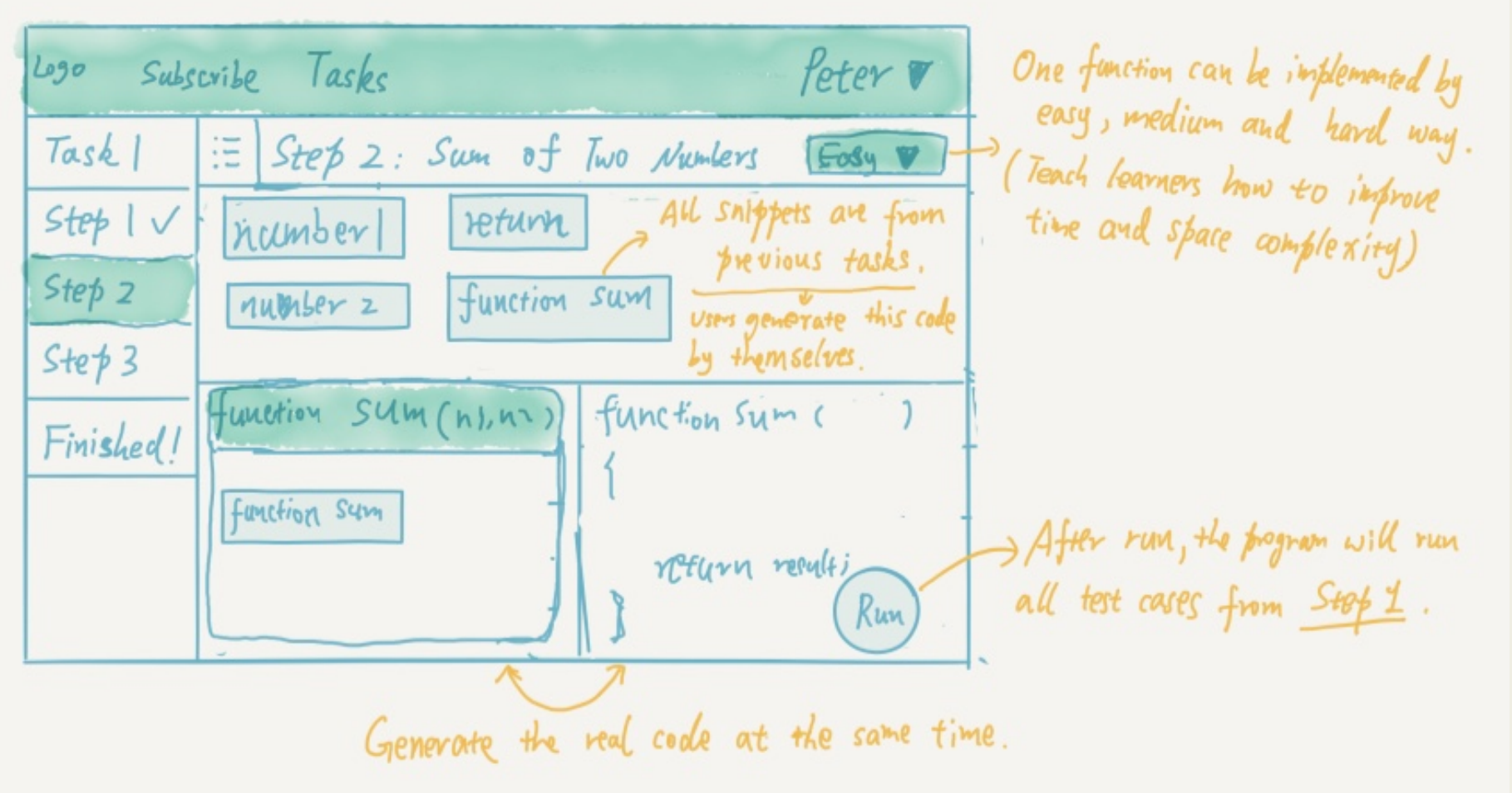
- Add complex algorithms like KMP, Union-Find etc.
- Cooperate with companies to help them hire people.
  - *Provide training hours on the platform.*
  - *Detect coding style to avoid cheating based on data mining.*
- Help large companies work on open source projects.
  - *Companies publish tasks and unit tests to the website.*
  - *The website finds suitable learners to work on the tasks.*
  - *The companies receive the code and comment.*
  - *Good learners may increase the possibility to get hired by the companies.*

Wireframes – Homepage



Have not finished mock-up yet.

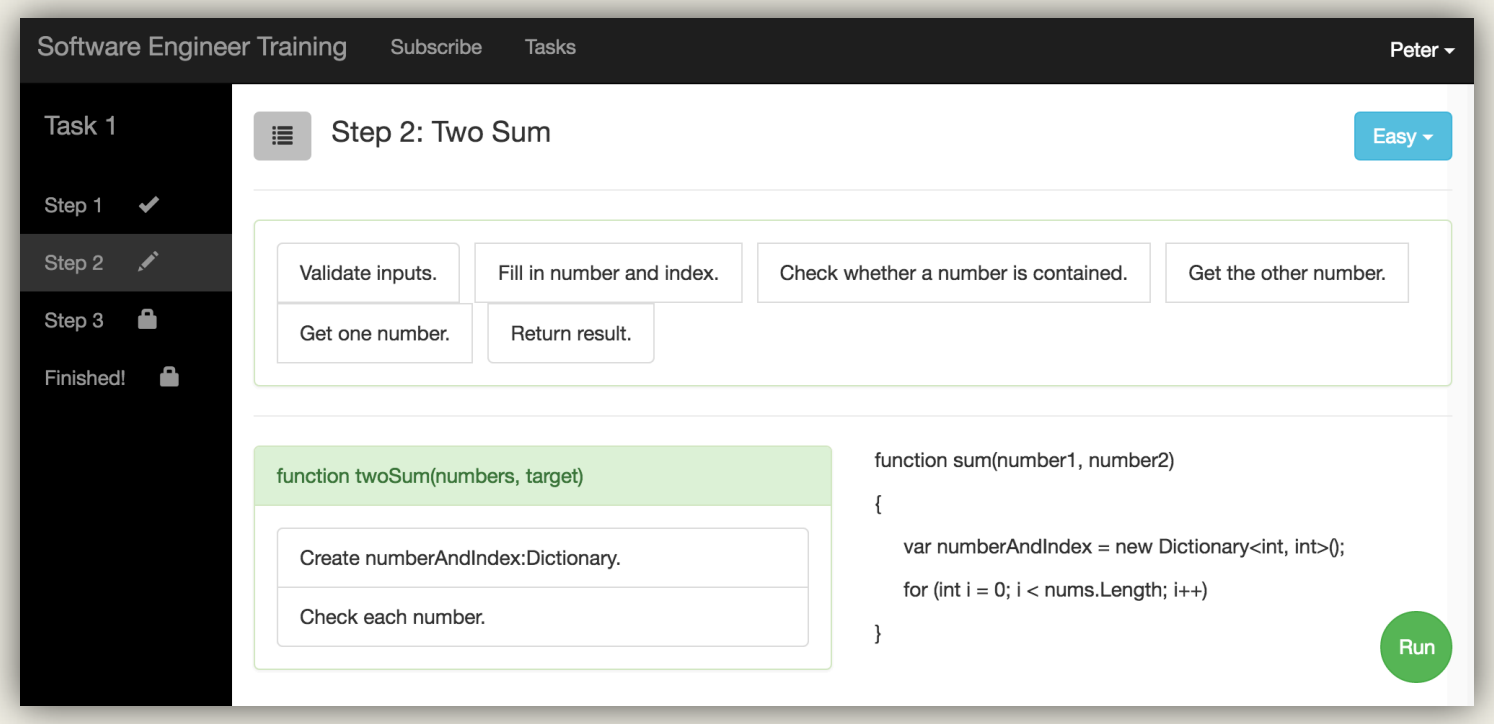
Wireframes – Finish Tasks

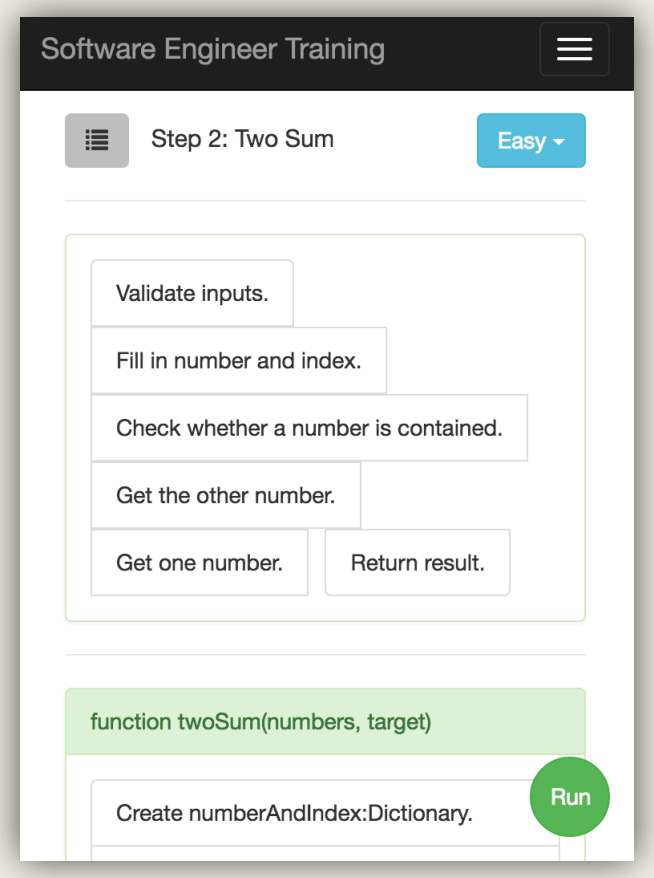


Mock-up

Please visit: http://40.117.32.22/softwareengineertraining/

Github: https://github.com/PeikangHu/SoftwareEngineerTraining





THANKS