

A thick black L-shaped frame is positioned on the left and bottom edges of the slide, framing the central text.

SOFTWARE ENGINEER TRAINING

Coding, Engineering and Specific Language

Summary

- Software Engineer Training
a complete course

Software Engineer Training

Subscribe

Tasks

Task 1

Step 1 ✓

Step 2 ✎

Step 3 🔒

Finished! 🔒

☰ Step 2: Two Sum

Validate inputs.

Create numberAndIndex:Dictionary.

Get one number.

Check whether a number is contained.

Fill in number and index.

Check each number.

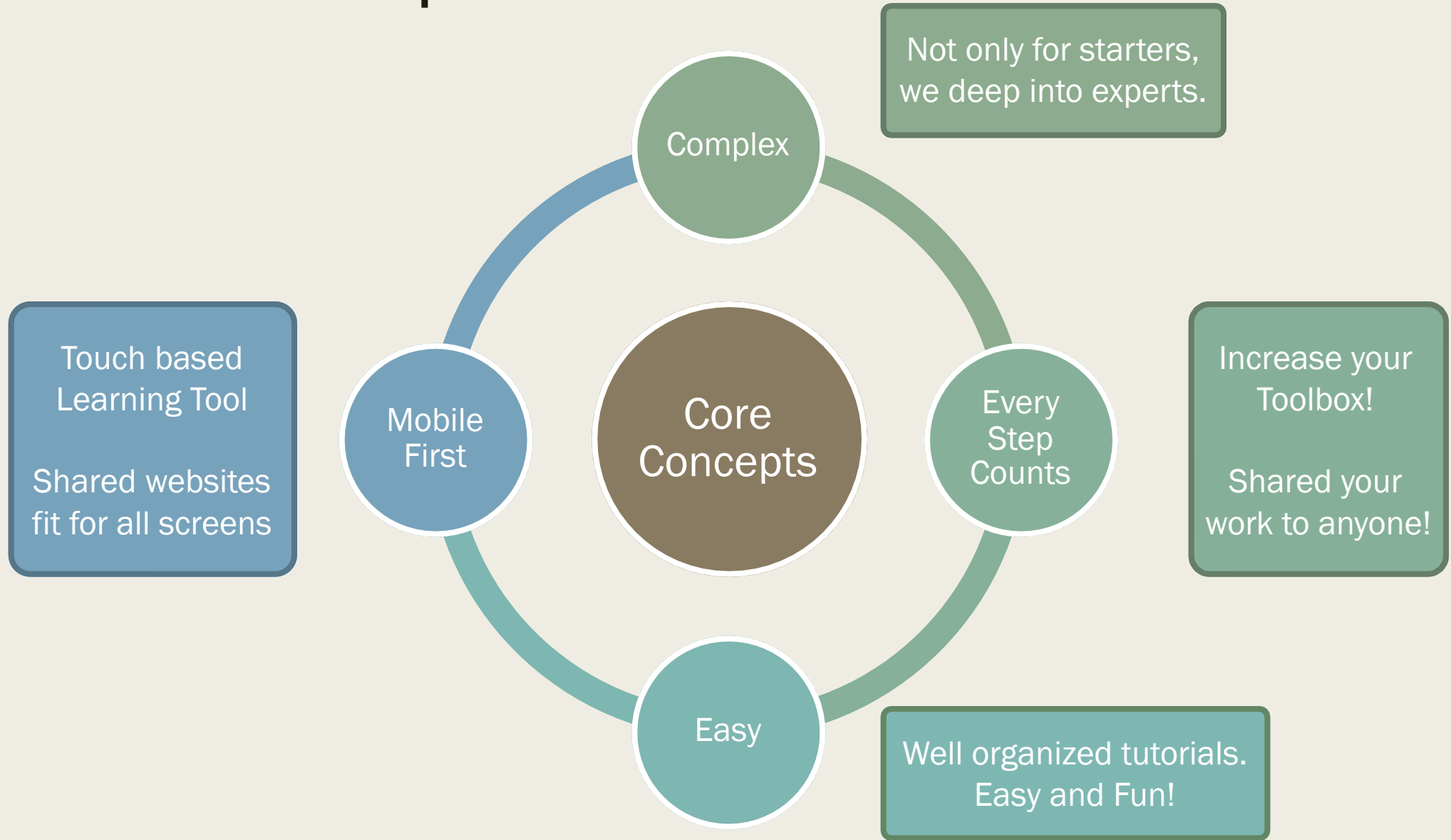
function twoSum(numbers, target)

Get the other number.

Return result.

```
function sum(number1, number2)
{
    var number2 = target - number1;
    return new [] {numberAndIndex[number2], i};
}
```

Core Concepts



Example: Basic Calculator – Task 1

Make sure a task



Find a solution



Gain and share

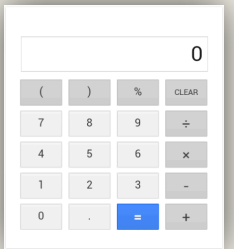
```
describe("Test a basic calculator.", function()
{
  it("1 + 2 = 3", function()
  {
    var result = calculate(1, 2, "+");
    expect(result).toEqual(3);
  });
});
```

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

function sum()



My toolbox



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();

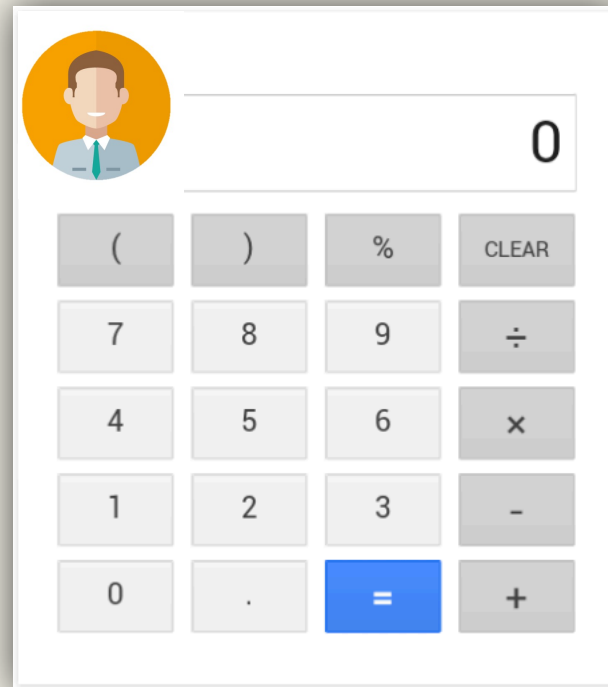
bootstrap(AppComponent);
```

Example: Basic Calculator – Task 3

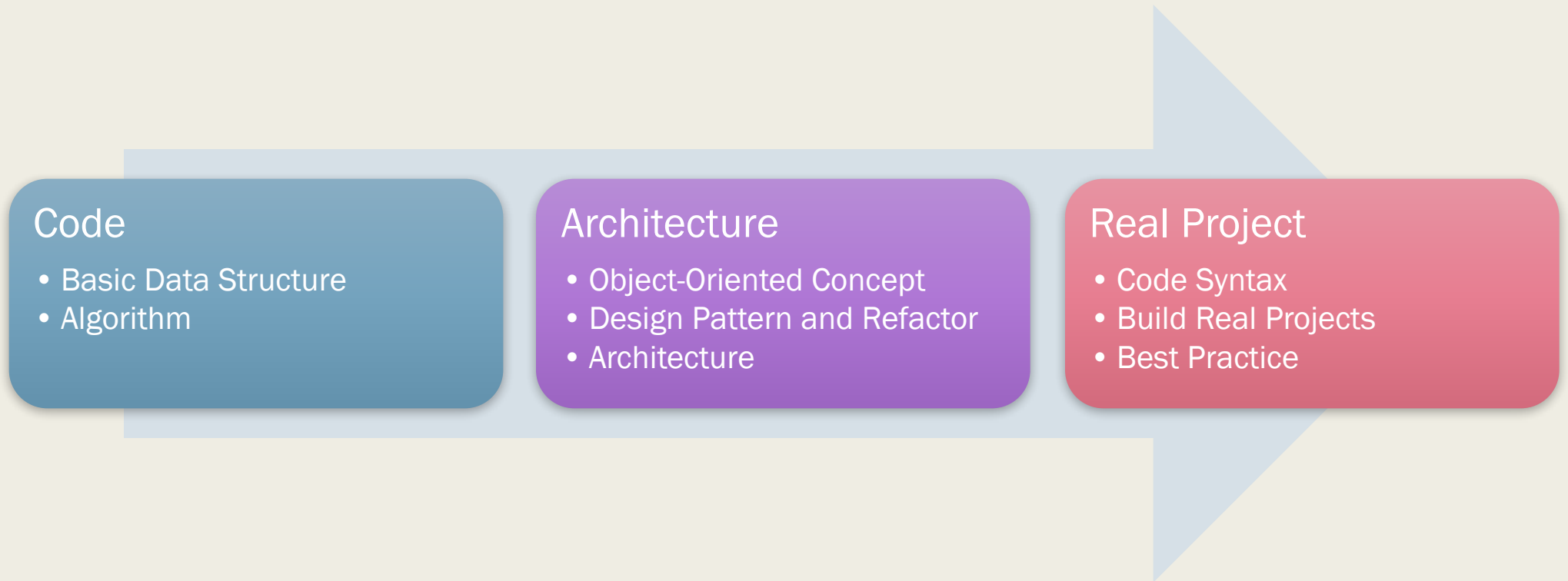
Decorate



Share your app

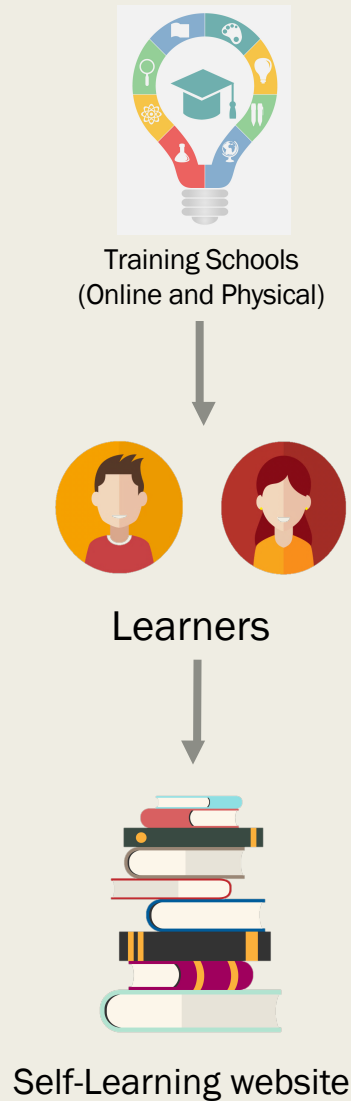


Learning Path

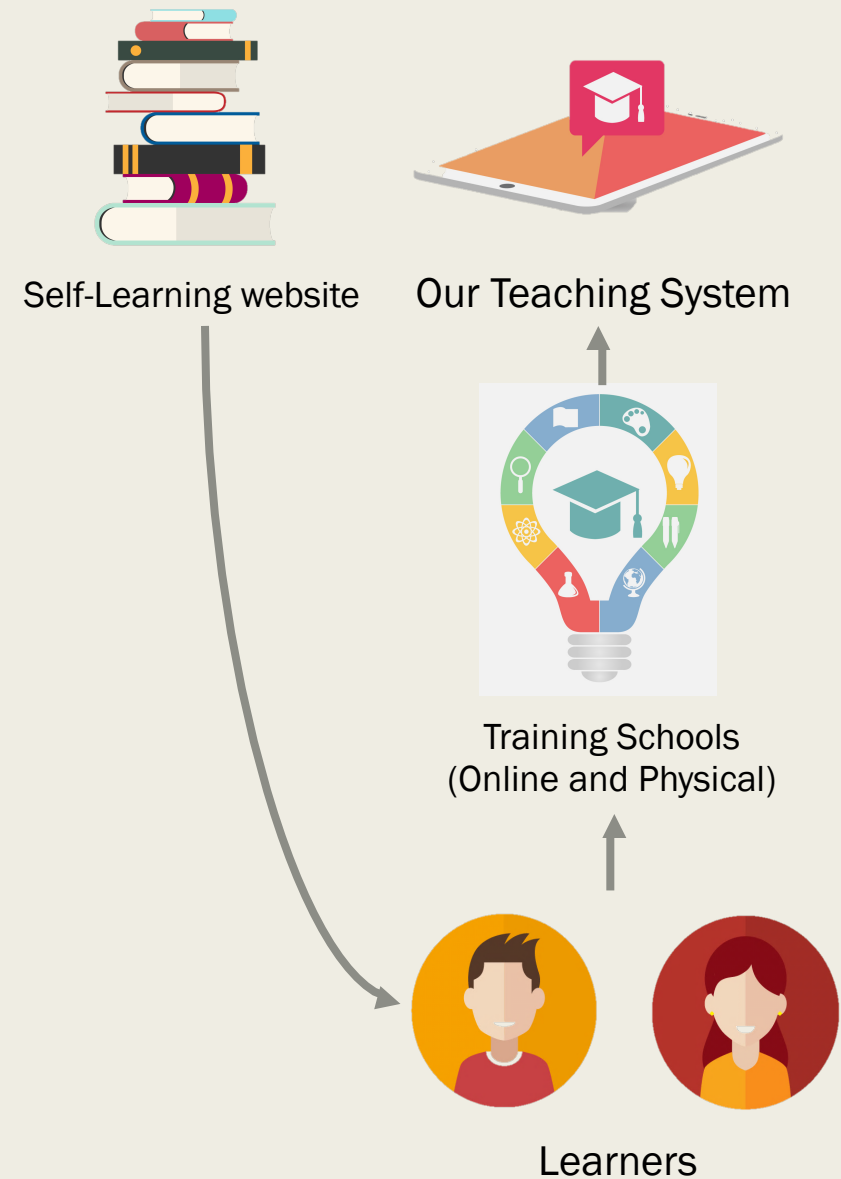


Marketing

Push Strategy



Pull Strategy



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

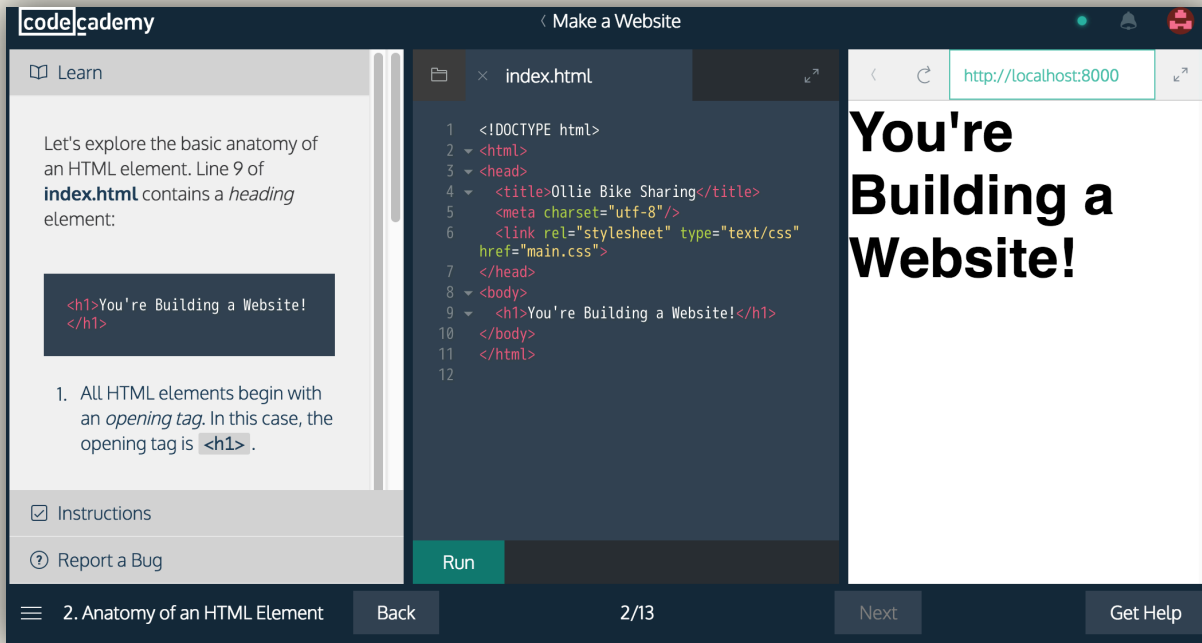
Game Learning



Good for starters

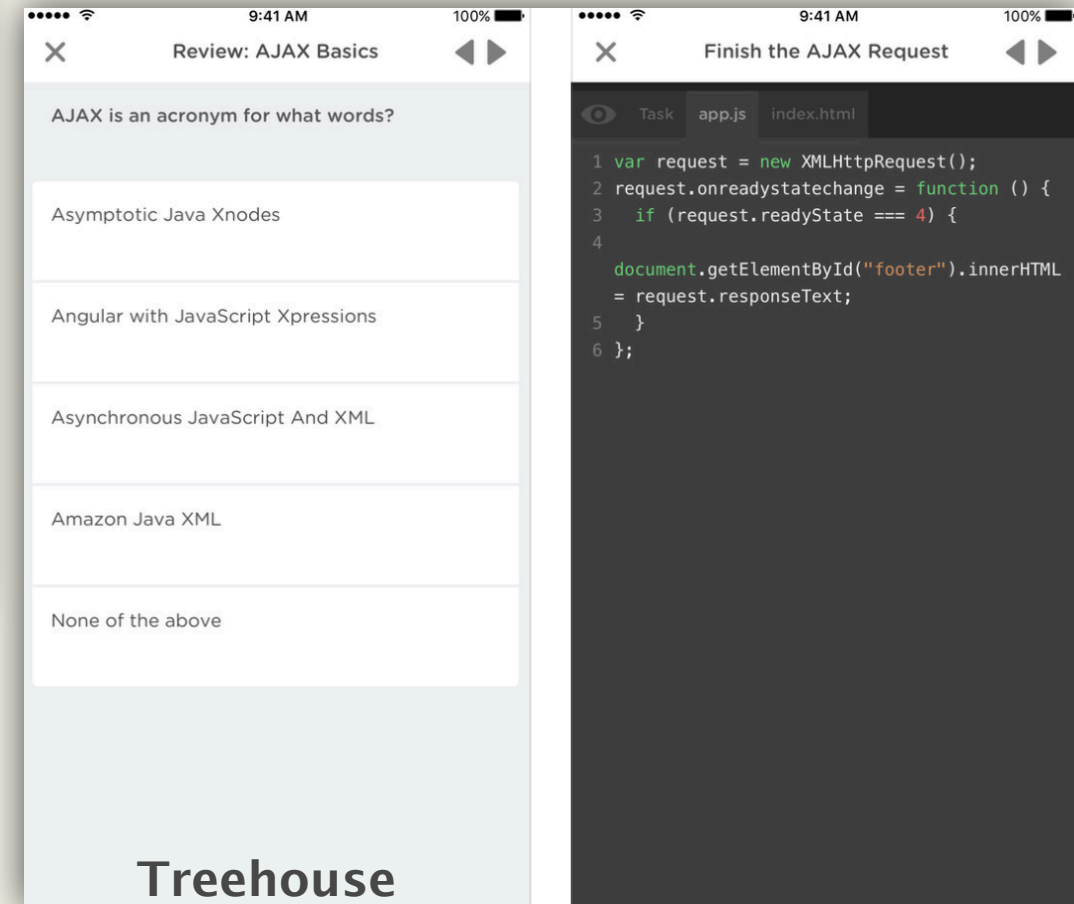
Hard to deep in

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



LIBRARY

Sign In

Sign Up

Start a Free Trial

Reactivate

Solutions for:

Business

Academic

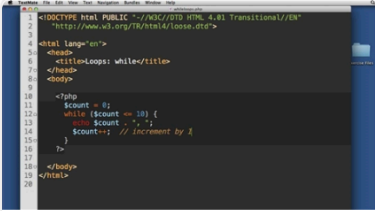
Government

Efficient

Easy to get bored

Browse Our Top Courses

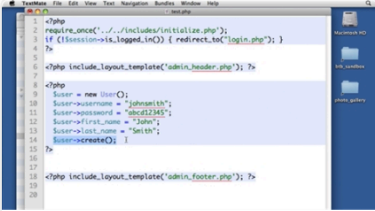
Business Creative Technology



PHP with MySQL Essential Training

Kevin Skoglund

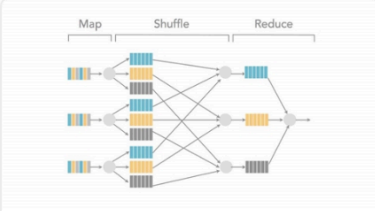
• 14h 32m • 3,907,848 Views



PHP with MySQL Beyond the Basics

Kevin Skoglund


• 10h 26m • 2,199,079 Views



Hadoop Fundamentals

Lynn Langit

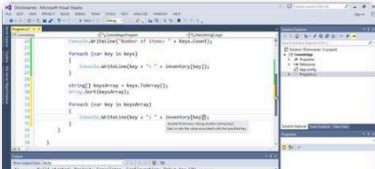
• 4h 48m • 647,853 Views



jQuery Essential Training

Joe Marini

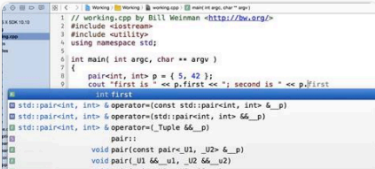
• 3h 37m • 856,985 Views



jQuery Essential Training

Joe Marini

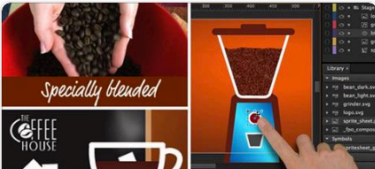
• 3h 37m • 856,985 Views



jQuery Essential Training

Joe Marini


• 3h 37m • 856,985 Views



jQuery Essential Training

Joe Marini

• 3h 37m • 856,985 Views



jQuery Essential Training

Joe Marini

• 3h 37m • 856,985 Views

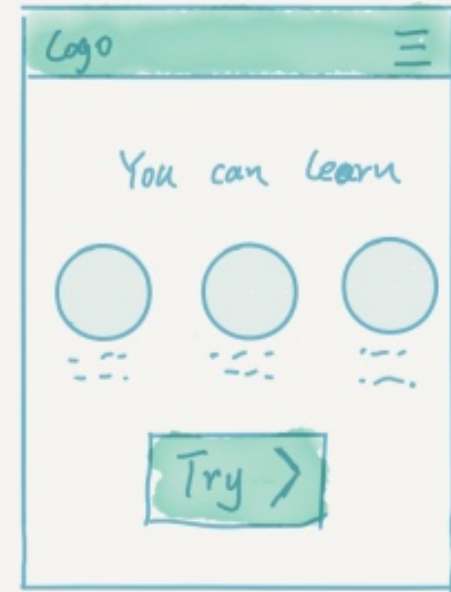
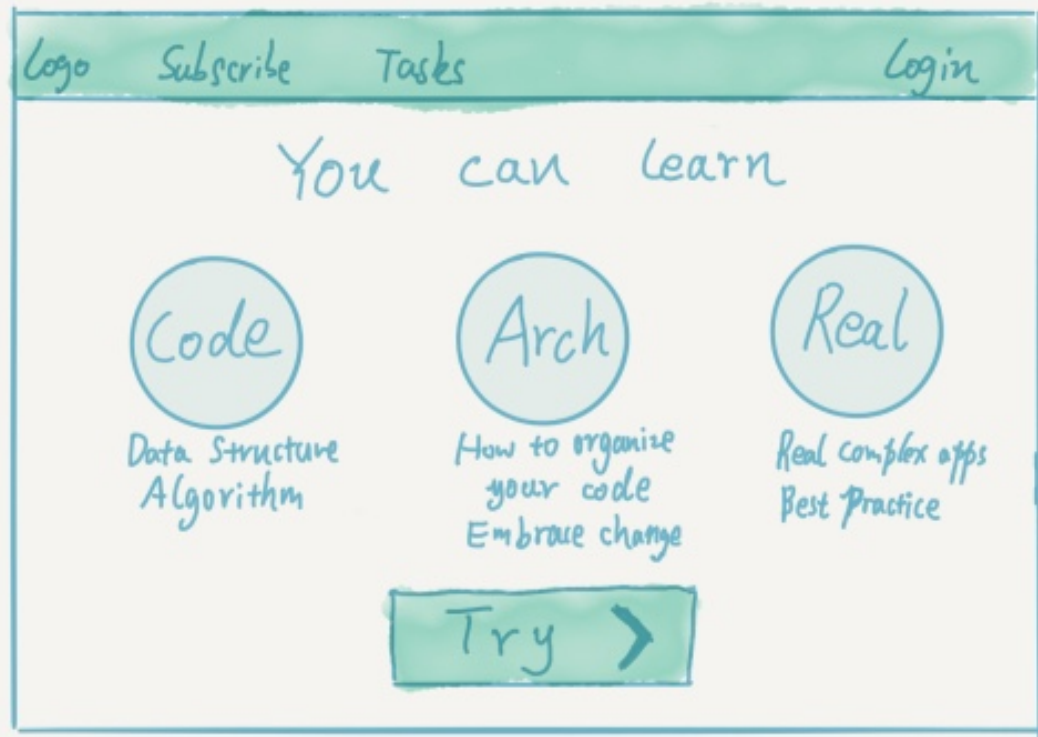
Revenue Stream

- 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

Logo		Subscribe		Tasks		Peter ▼	
Task 1	☰	Step 2: Sum of Two Numbers				Easy ▼	
Step 1 ✓		number 1		return	All snippets are from previous tasks. ↓ Users generate this code by themselves.		
Step 2		number 2		function sum			
Step 3							
Finished!		function sum(n1,n2)		function sum ()			
		function sum		{ return result; }			
				Run			

One function can be implemented by easy, medium and hard way.

→ (Teach learners how to improve time and space complexity)

all snippets are from previous tasks.

users generate this code by themselves.

⇒ After run, the program will run all test cases from Step 1.

Generate the real code at the same time.

The diagram illustrates the structure of a C++ program to find the sum of two numbers. It is organized into sections separated by horizontal lines:

- Header Section:** Contains the text "Logo" on the left and a hamburger menu icon (three horizontal lines) on the right.
- Step Section:** Below the header, it says "Step 2: Two Sum" on the left and "Easy" in a box on the right.
- Variables:** Two boxes labeled "number1" and "number2" are shown below the step section.
- Function Declaration:** A box labeled "return" is shown below the variables.
- Function Definition:** A large box contains the text "function sum (n1, n2)".
- Main Function:** Below the function definition, the text "function sum ()" is written, followed by a block of code:


```

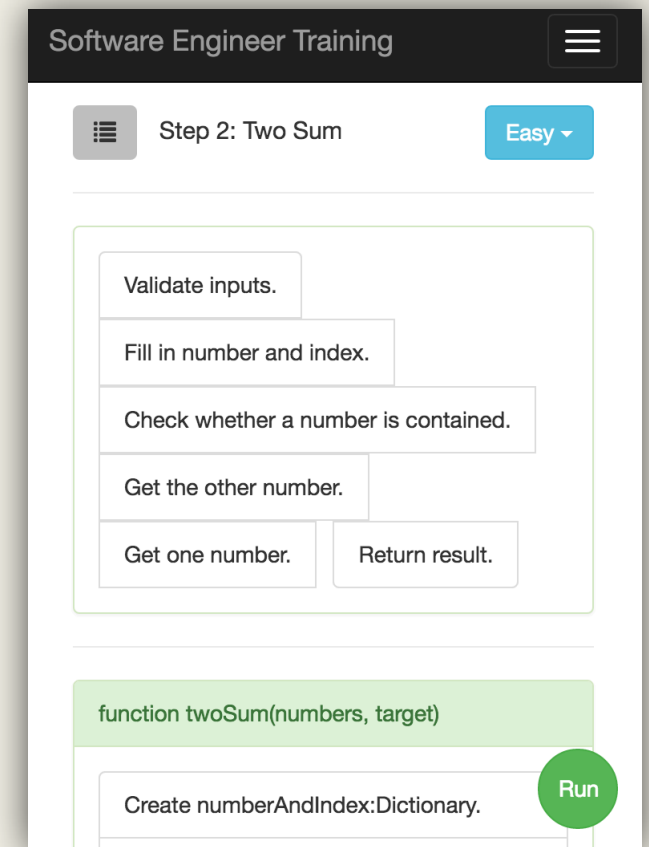
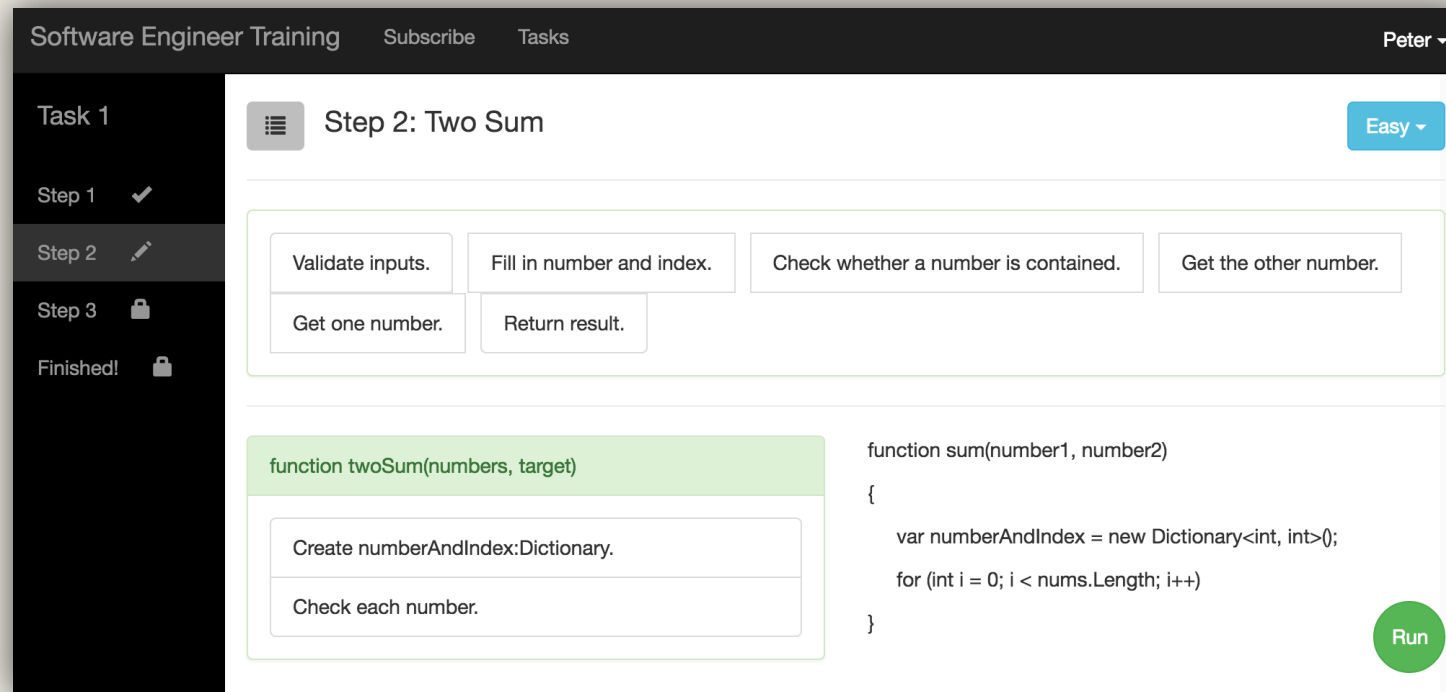
{
    ...
}

```
- Execution:** A circular button labeled "Run" is located at the bottom right of the diagram.

Mock-up

Please visit: <http://40.117.32.22/softwareengineertraining/>

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





THANKS

