Classes

Brice Wilson

@brice_wilson www.BriceWilson.net

Overview

What is a class?

Similarity to classes in other languages

Class members

- Constructors
- Properties
- Methods

Inheritance

Abstract classes

Class expressions

What is a class?

Template for creating objects

Provides state storage and behavior

Encapsulates reusable functionality

Sound Familiar?

- Define Types
- Properties and Methods
- Constructors
- Access Modifiers
- Inheritance
- Abstract Classes

```
class ReferenceItem {
    constructor(title: string, publisher?: string) {
        // perform initialization here
    }
}
let encyclopedia = new ReferenceItem('WorldPedia', 'WorldPub');
```

Constructors

Method named “constructor” – maximum of one per class

Use optional parameters to call different ways

Executed by using the “new” keyword

Properties and Methods

```
class ReferenceItem {
    numberOfPages: number;
    get editor(): string {
        // custom getter logic goes here, should return a value
    }
    set editor(newEditor: string) {
        // custom setter logic goes here
    }
    printChapterTitle(chapterNum: number): void {
        // print title here
    }
}
```

Properties and Methods

```
class ReferenceItem {
    numberOfPages: number;
    get editor(): string {
        // custom getter logic goes here, should return a value
    }
    set editor(newEditor: string) {
        // custom setter logic goes here
    }
    printChapterTitle(chapterNum: number): void {
        // print title here
    }
}
```

Parameter Properties

```
class Author {
    name: string;
    constructor(authorName: string) {
        name = authorName;
    }
}
class Author {
    constructor(public name: string) { }
}
```





Static Properties

```
class Library {
    constructor(public name: string) { }
    static description: string = 'A source of knowledge.';
}
let lib = new Library('New York Public Library');
let name = lib.name; // avaiable on instances of the class
let desc = Library.description; // available on the class
```

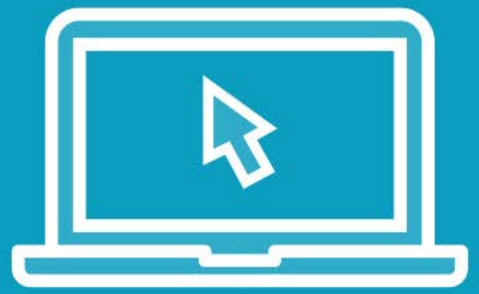
Access Modifiers

Public

Private

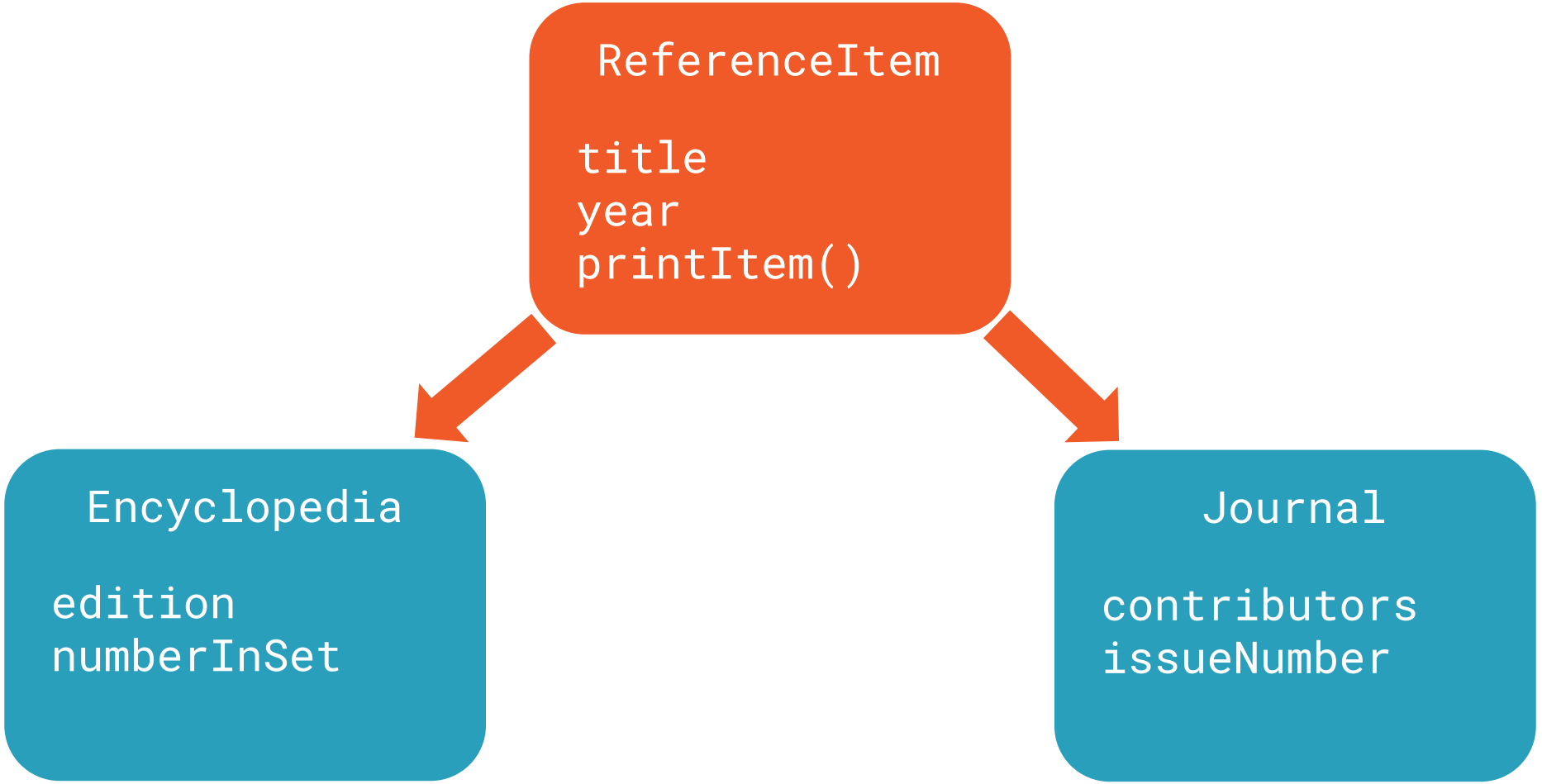
Protected

Demo



Creating and using classes

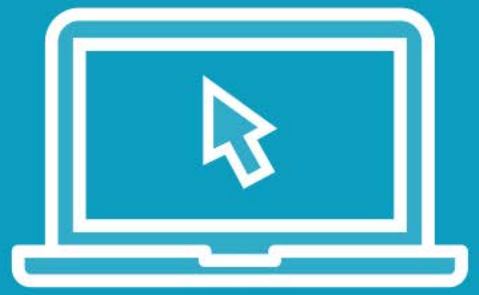
Inheritance



Extending Classes with Inheritance

```
class ReferenceItem {
    title: string;
    printItem(): void { // print something here }
}
class Journal extends ReferenceItem {
    constructor() {
    super();
    }
    contributors: string[];
}
```

Demo



Defining an inheritance hierarchy

Abstract Classes

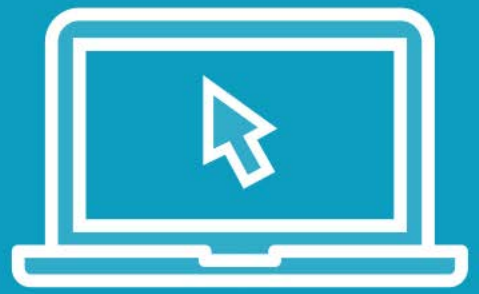
Created with the “abstract” keyword

Base classes that may not be instantiated

May contain implementation details

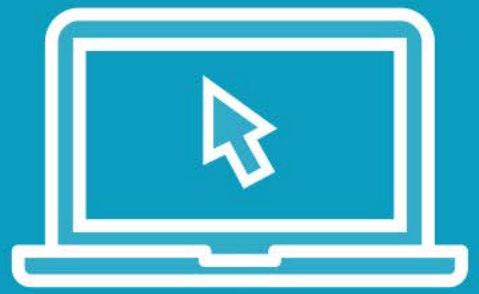
Abstract methods are not implemented

Demo



Creating abstract classes

Demo



Using class expressions

Summary

Classes defined

Class Members

- Constructors
- Properties
- Methods
- Accessors

Inheritance

Abstract Classes

Class Expressions