AN INTRODUCTION TO INHERITANCE AND PROTOTYPES

CHO S. KIM, INSTRUCTOR
GENERAL ASSEMBLY

Objectives

- Students will be able to…
  - describe the purpose of inheritance
  - describe the look-up process
  - describe what's a prototype
  - use Object.create()
  - use constructors
  - use prototypes

WHAT'S INHERITANCE?

Inheritance:

- Syntax

```
// our file

var cat
```

```
// console
```

Inheritance:

- Syntax

```
// our file

var cat =
```

```
// console
```

Inheritance:

- Syntax

```
// our file

var cat = {};
```

```
// console
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat
```

```
// output
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat
```

```
// output


Object {}
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat

cat
```

```
// output


Object {}
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat

cat.name
```

```
// output


Object {}
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat

cat.name =
```

```
// output


Object {}
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat

cat.name = “Garfield”;

cat
```

```
// output


Object {}
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat

cat.name = “Garfield”;

cat
```

```
// output


Object {}


Object {name: “Garfield”}
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat

cat.name = “Garfield”;

cat
cat
```

```
// output


Object {}


Object {name: “Garfield”}
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat

cat.name = “Garfield”;

cat
cat.name
```

```
// output


Object {}


Object {name: “Garfield”}
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat

cat.name = “Garfield”;

cat
cat.name
```

```
// output


Object {}


Object {name: “Garfield”}
“Garfield”
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat

cat.name = “Garfield”;

cat
cat.name
cat
```

```
// output


Object {}


Object {name: “Garfield”}
“Garfield”
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat

cat.name = “Garfield”;

cat
cat.name
cat.age
```

```
// output


Object {}


Object {name: “Garfield”}
“Garfield”
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat

cat.name = “Garfield”;

cat
cat.name
cat.age
```

```
// output


Object {}


Object {name: “Garfield”}
“Garfield”
undefined
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat

cat.name = “Garfield”;

cat
cat.name
cat.age
cat
```

```
// output


Object {}


Object {name: “Garfield”}
“Garfield”
undefined
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat

cat.name = “Garfield”;

cat
cat.name
cat.age
cat.age
```

```
// output



Object {}



Object {name: “Garfield”}
“Garfield”
undefined
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat

cat.name = “Garfield”;

cat
cat.name
cat.age
cat.age =
```

```
// output


Object {}


Object {name: “Garfield”}
“Garfield”
undefined
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat

cat.name = “Garfield”;

cat
cat.name
cat.age
cat.age = 7;
```

```
// output



Object {}



Object {name: “Garfield”}
“Garfield”
undefined
Object {name: “Garfield”, age: 7}
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat

cat.name = “Garfield”;

cat
cat.name
cat.age
cat.age = 7;
cat
```

```
// output



Object {}



Object {name: “Garfield”}
“Garfield”
undefined
Object {name: “Garfield”, age: 7}
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat

cat.name = “Garfield”;

cat
cat.name
cat.age
cat.age = 7;
cat.constructor
```

```
// output



Object {}



Object {name: “Garfield”}
“Garfield”
undefined
Object {name: “Garfield”, age: 7}
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat

cat.name = “Garfield”;

cat
cat.name
cat.age
cat.age = 7;
cat.constructor
```

```
// output


Object {}


Object {name: “Garfield”}
“Garfield”
undefined
Object {name: “Garfield”, age: 7}
undefined
```

Inheritance:

- Syntax

```
// input

var cat = {};

cat

cat.name = “Garfield”;

cat
cat.name
cat.age
cat.age = 7;
cat.constructor
```

```
// output



Object {}



Object {name: “Garfield”}
“Garfield”
undefined
Object {name: “Garfield”, age: 7}
Object {}
```

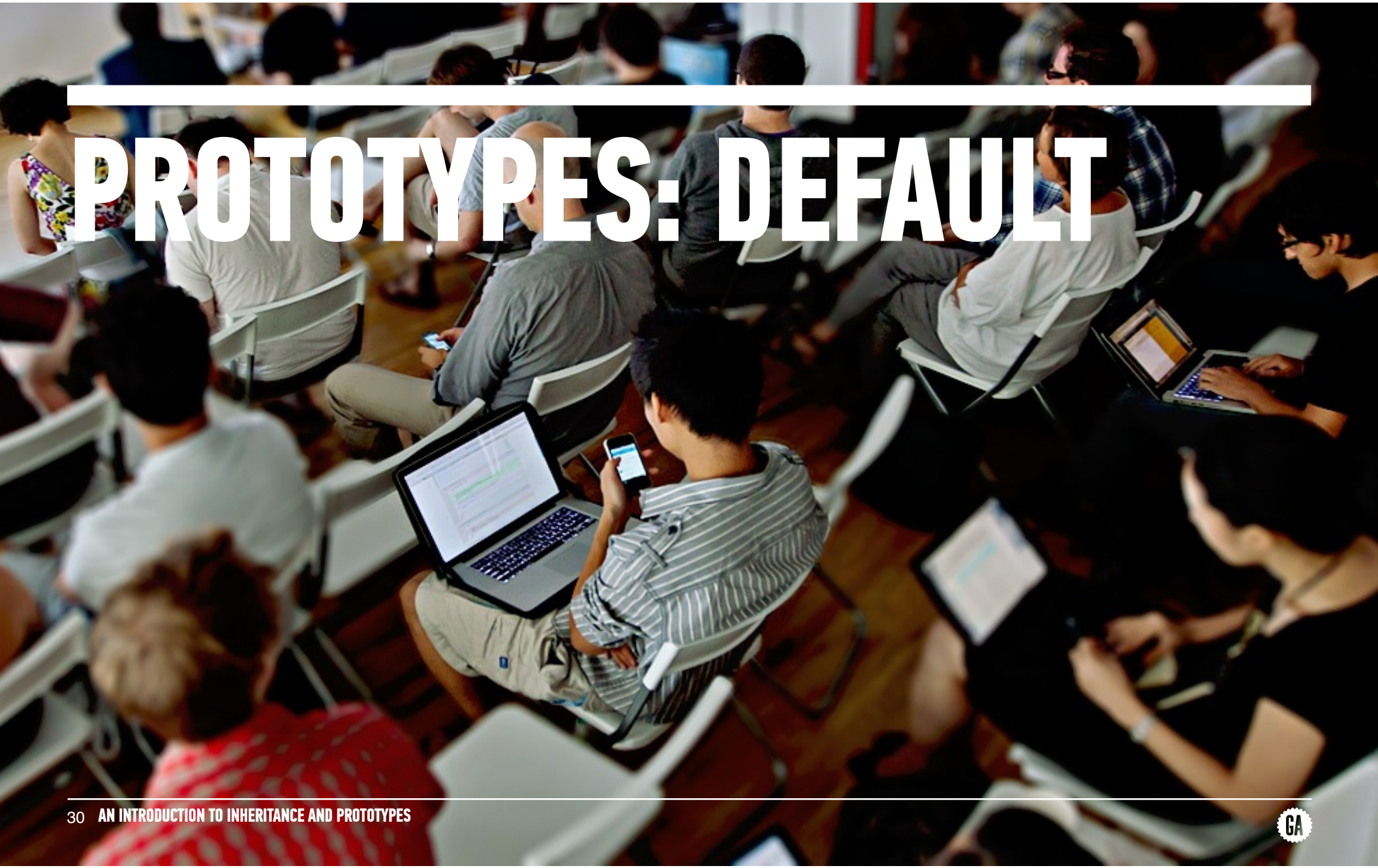
THE LOOK-UP CHAIN: A VISUALIZATION

Inheritance:

- Syntax

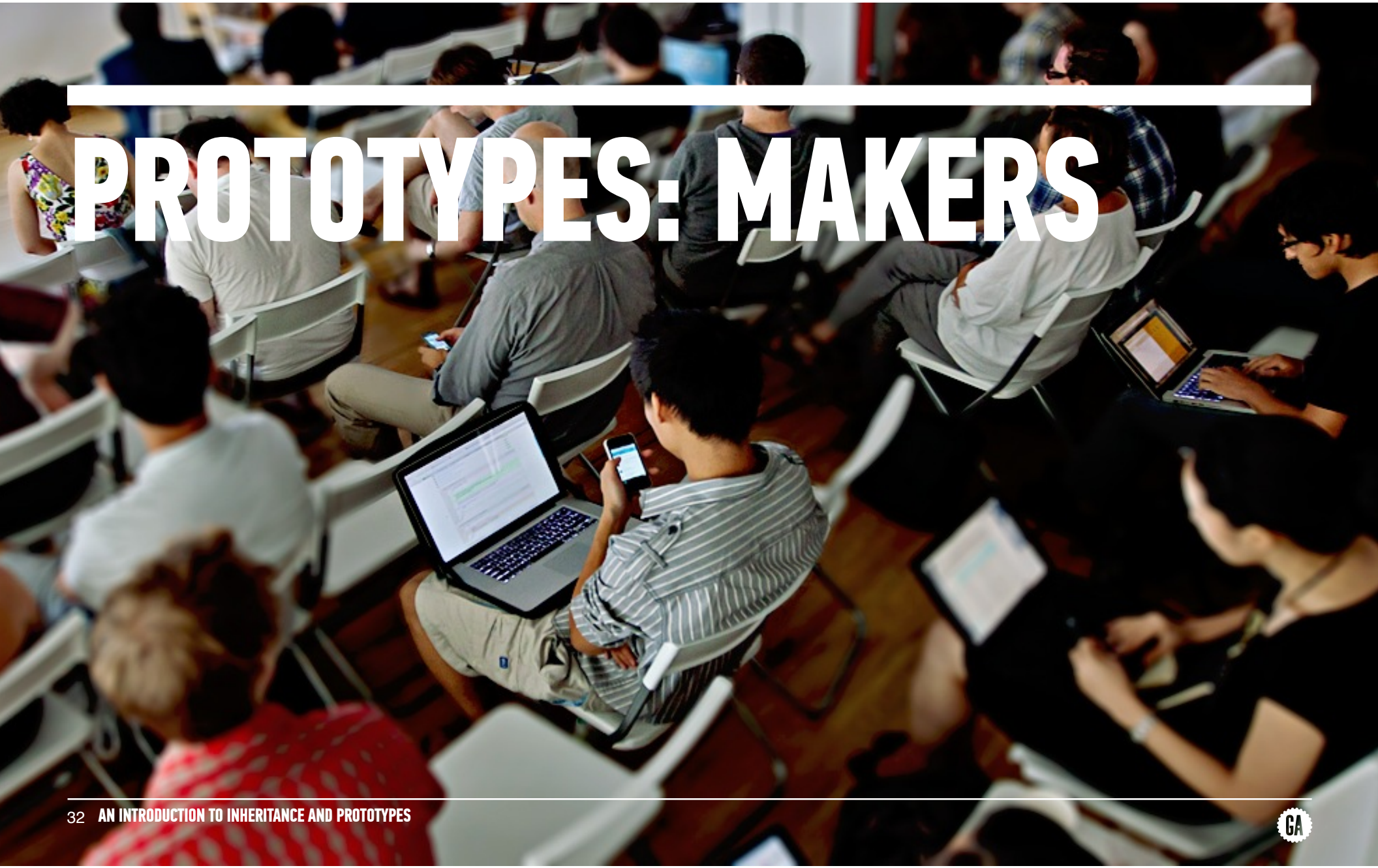
```
// input

var cat = {};

cat

cat.name = “Garfield”;

cat
cat.name
cat.age
cat.age = 7;
cat.constructor
```

```
// output



Object {}



Object {name: “Garfield”}
“Garfield”
undefined
Object {name: “Garfield”, age: 7}
Object {}
```

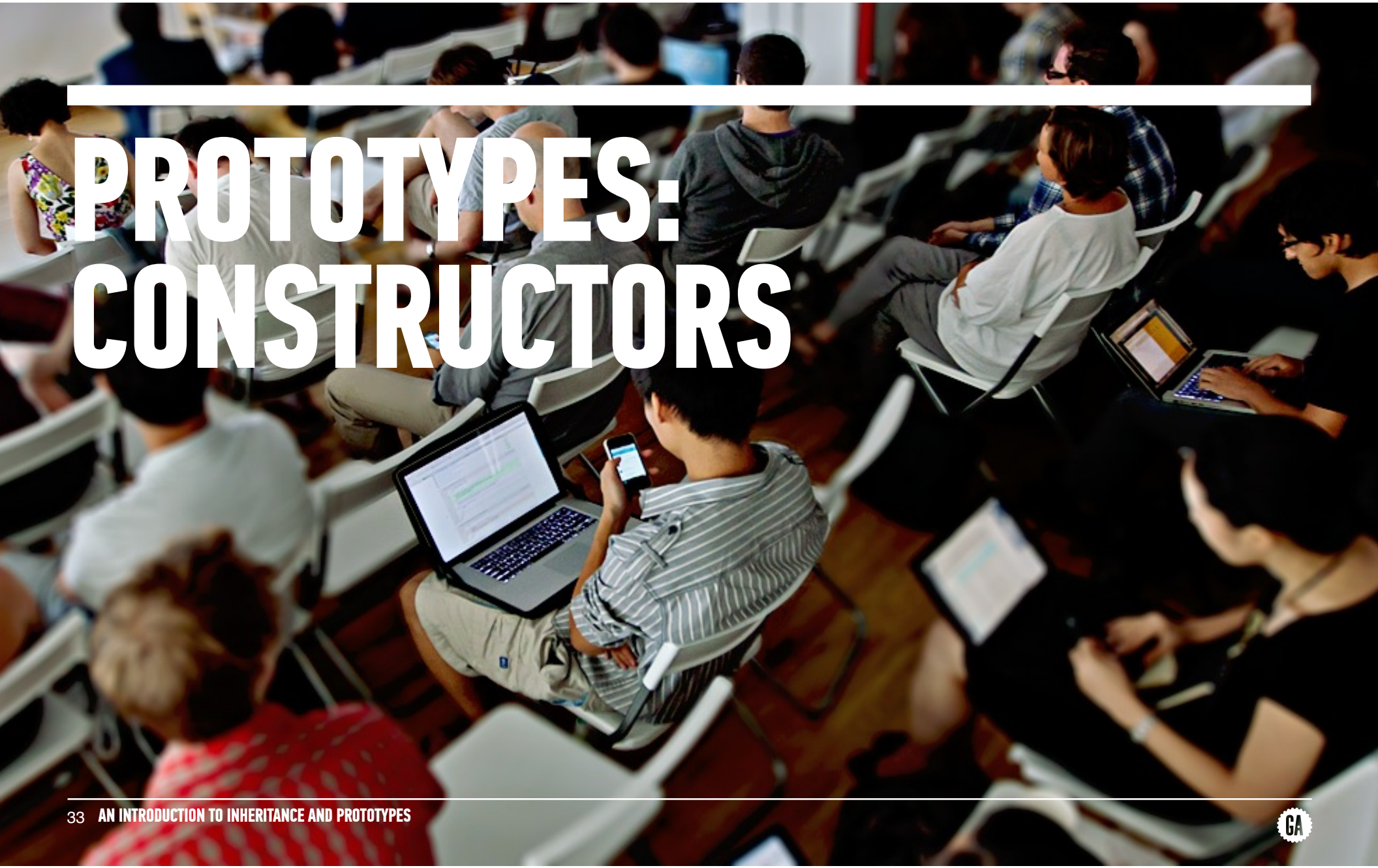


PROTOTYPES: DEFAULT

PROTOTYPES: CUSTOM

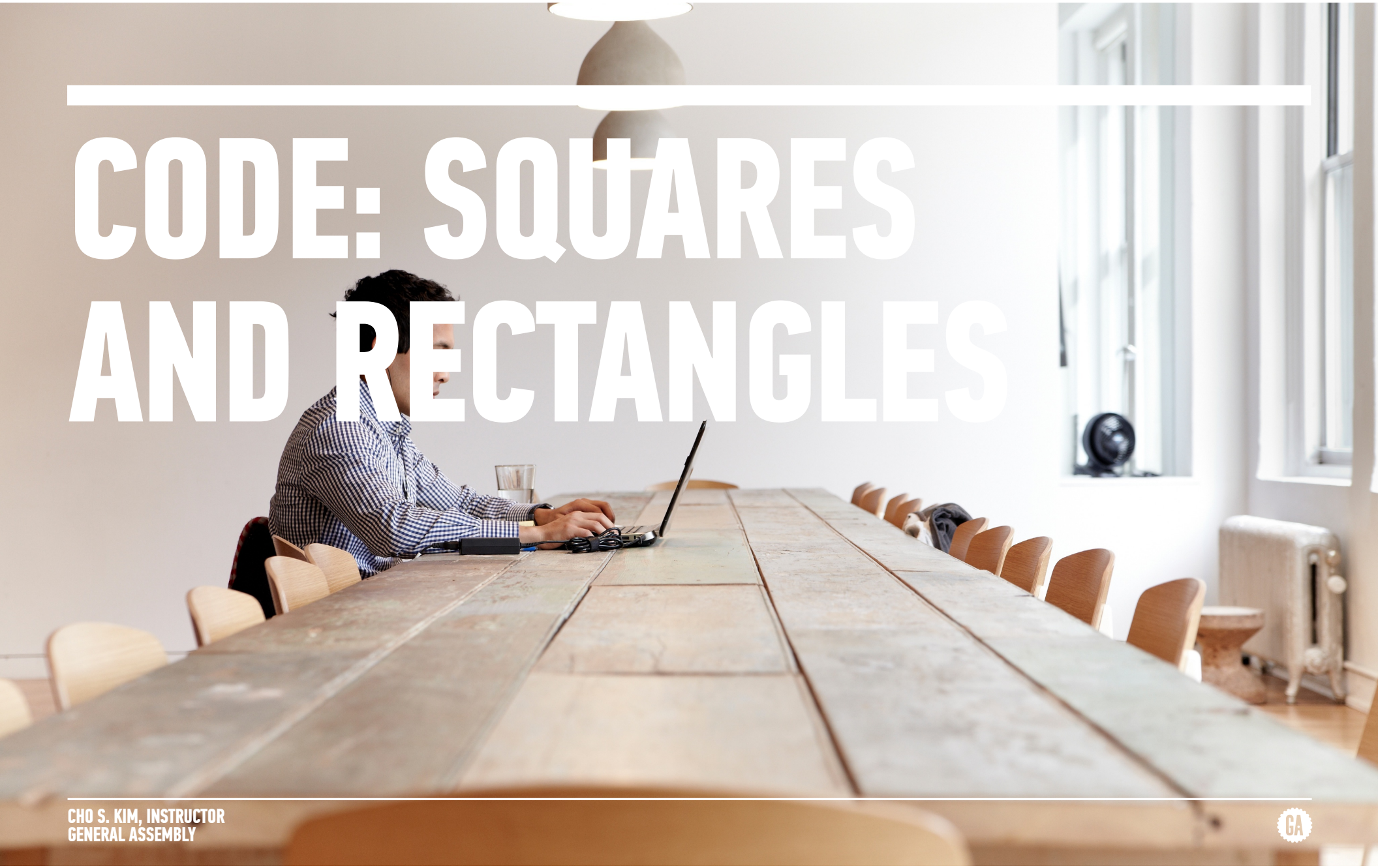


PROTOTYPES: MAKERS



PROTOTYPES: CONSTRUCTORS

CODE: SQUARES AND RECTANGLES



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  - describe the purpose of inheritance
  - describe the look-up process
  - describe what's a prototype
  - use Object.create()
  - use constructors
  - use prototypes

THANK YOU.

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