

# Why Python Makes a Good First Language

#pyshara

## ■ Intrinsic Reasons

## Public Static Void What?

Used in vSphere Client when I do snapshot in



## What we teach

## ■ Pedagogical Reasons

### Who actually learns a language from a lecture?



... and Python Supports this!

How we teach it

**Barry Peddycord III**

<http://isharacomix.org>

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PyCarolinas, Chapel Hill, NC, Oct 21 2012

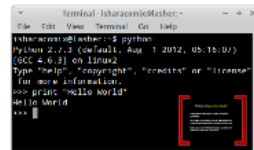
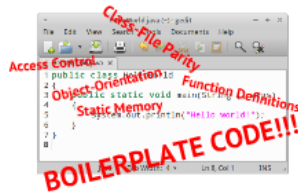
## Intrinsic Reasons

### Public Static Void What?

Why am I picking on Java?

Java is the 'default' CS1 language[1]

Used in AP Computer Science since 2003,  
replacing C++



Other Features that make Python nice:

- Classes/Functions are not compulsory
- REPL and built-in 'help()' function
- Easy to use packages
  - SDL, OpenGL, Django
- Zen of Python
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Works cited

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# The Fine Print

No research was done in the preparation of this talk!

This is an opinionated discussion based on my personal observations and biases.

That being said, I'm not going to make up numbers or figures. Assume that if it isn't cited, it's either mine or common knowledge.

THIS TALK COMES WITH ABSOLUTELY NO WARRANTY, EXPRESSED OR IMPLIED, ETC ETC ETC

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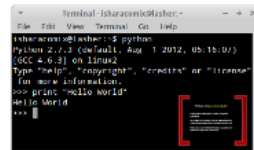
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```
1 public class HelloWorld {
2 {
3     public static void main(String[] args) {
4         System.out.println("Hello world!");
5     }
6 }
7 }
8
```

```
isharacomix@laser:~$ python
Python 2.7.3 (default, Aug 1 2012, 05:16:07)
[GCC 4.6.3] on linux2
Type "help", "copyright", "credits" or "license()"
>>> print "Hello World"
Hello World
>>>
```

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# Public Static Void Win

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Class-File Parity

Access Control

Object-Orientation

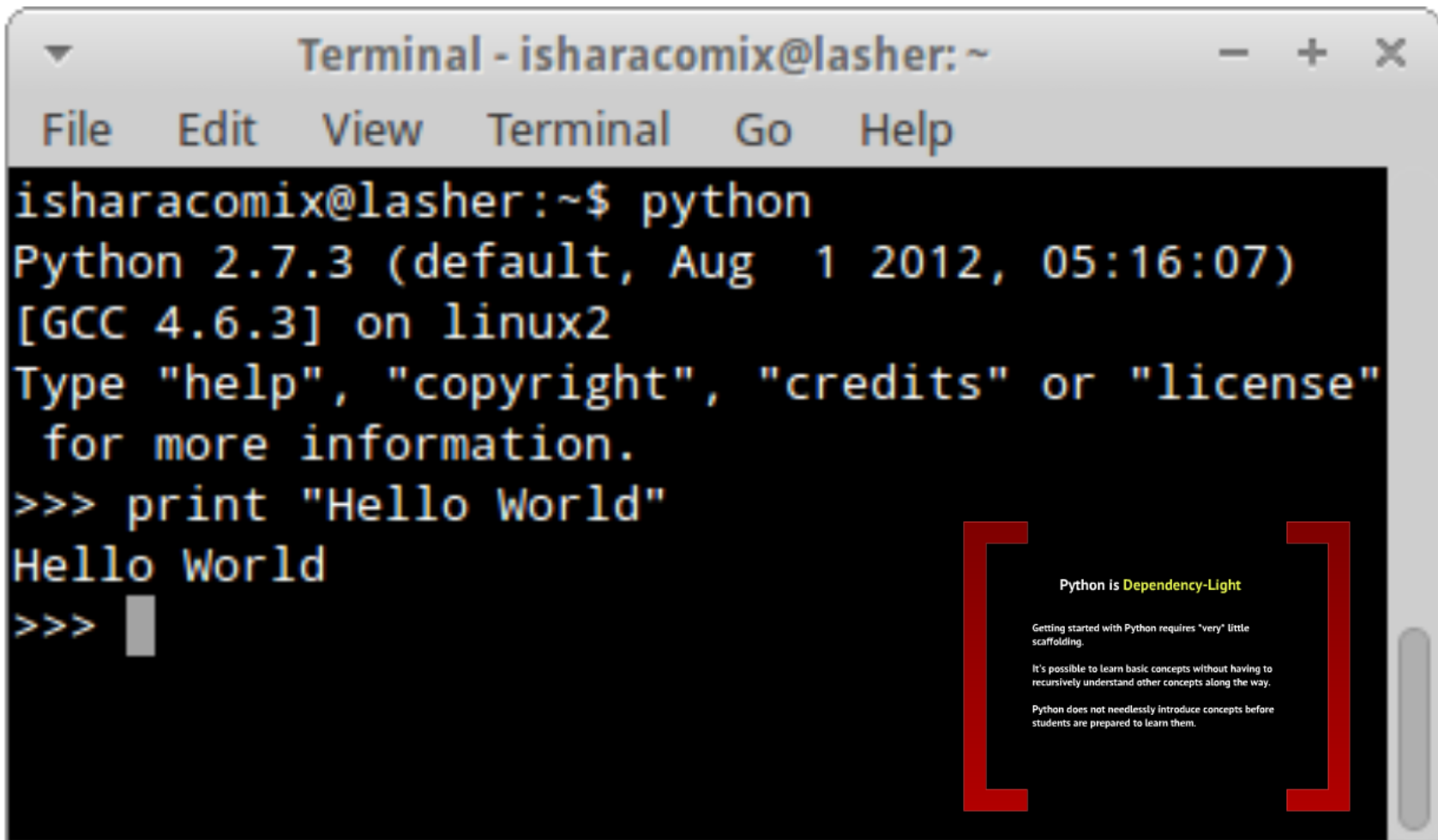
Static Memory

Function Definitions

```
1 public class HelloWorld
2 {
3     public static void main(String [] args)
4     {
5         System.out.println("Hello world!");
6     }
7 }
8 |
```

Java Tab Width: 4 Ln 8, Col 1 INS

**BOILERPLATE CODE!!!**



```
Terminal - isharacomix@lasher: ~
File Edit View Terminal Go Help

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>>> print "Hello World"
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Python is **Dependency-Light**

Getting started with Python requires "very" little scaffolding.

It's possible to learn basic concepts without having to recursively understand other concepts along the way.

Python does not needlessly introduce concepts before students are prepared to learn them.



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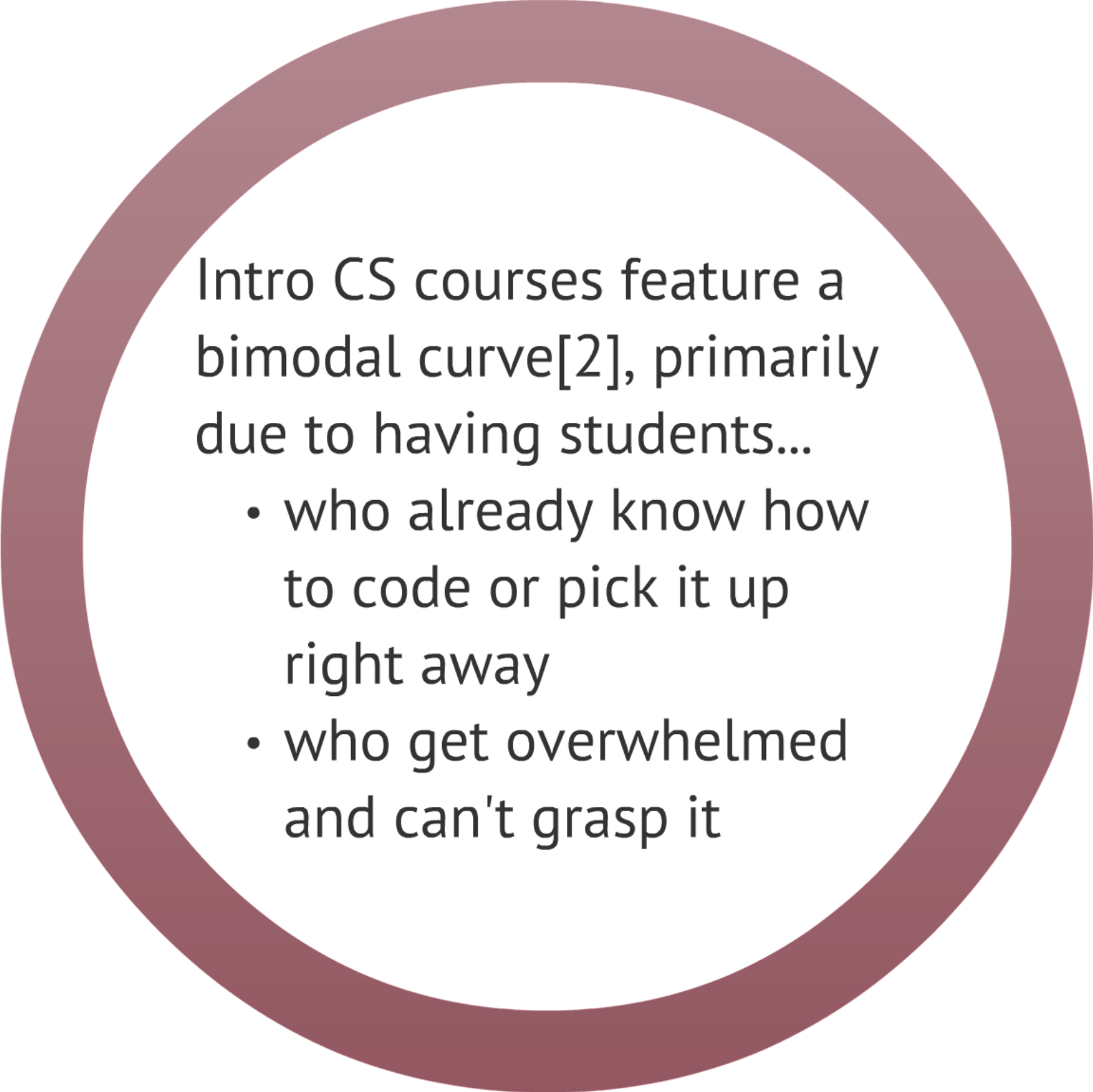
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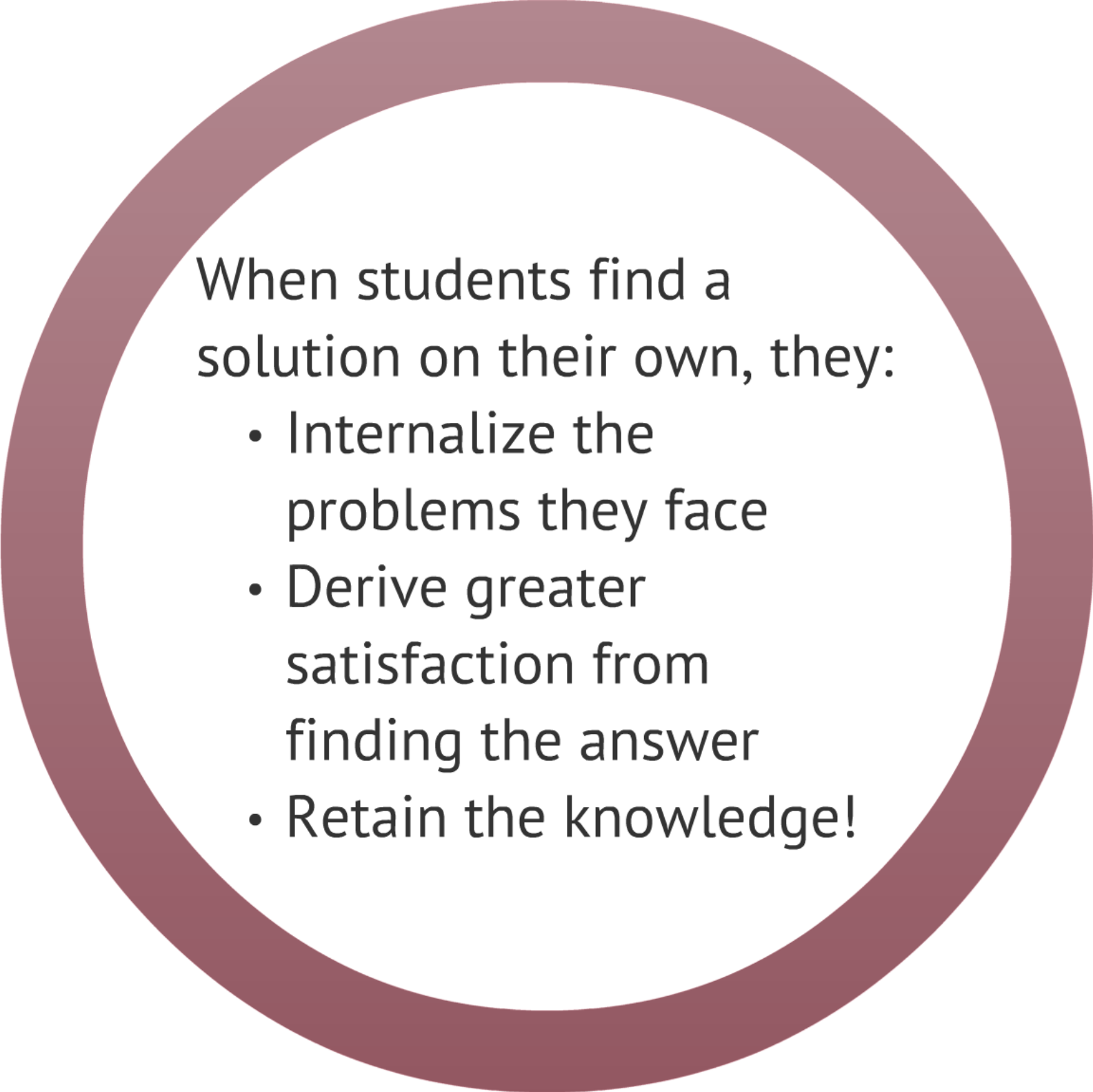


Intro CS courses feature a bimodal curve[2], primarily due to having students...

- who already know how to code or pick it up right away
- who get overwhelmed and can't grasp it

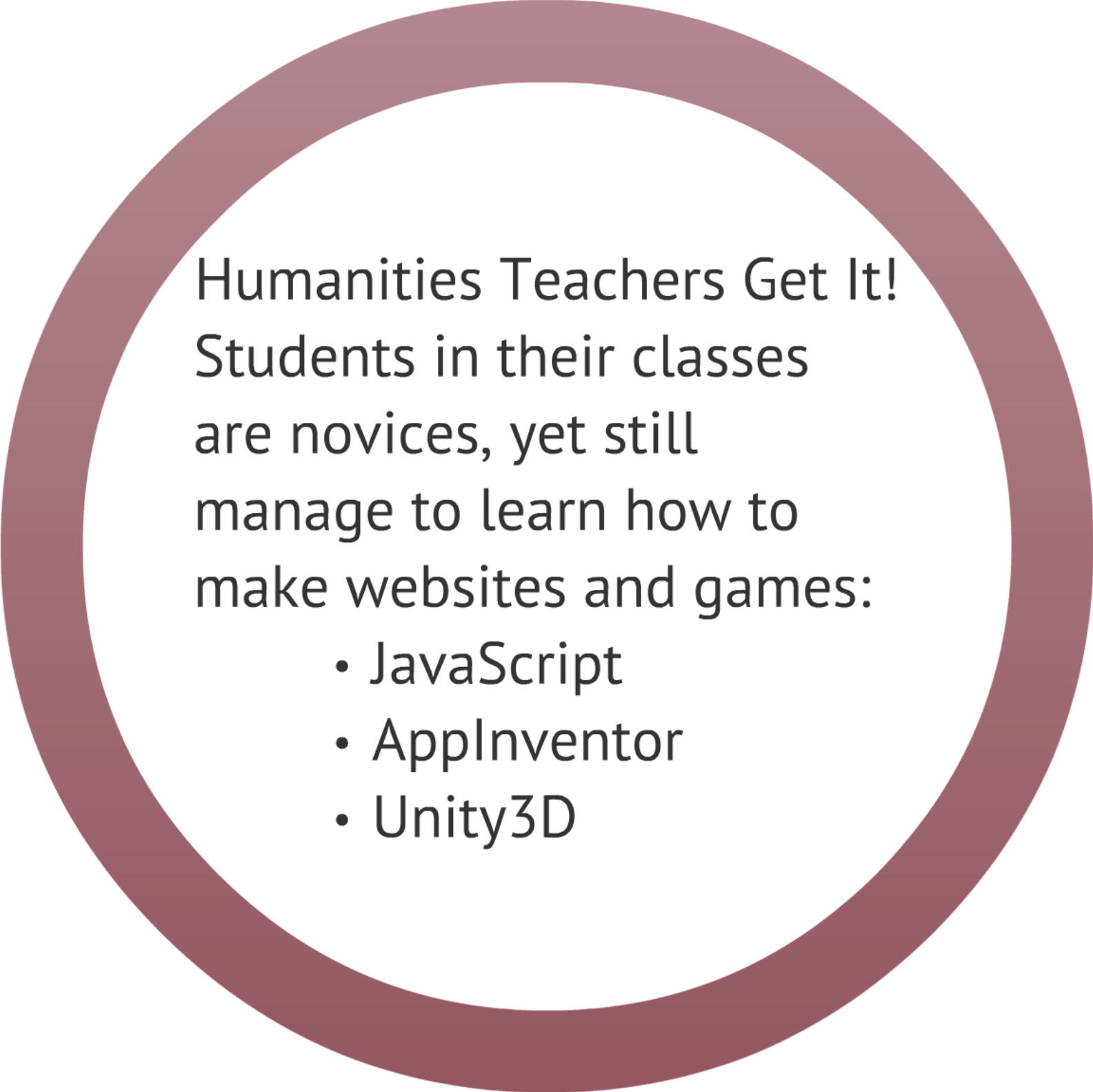
## Principles

- Students should develop the **intuition** behind programming on their own.
- Lecture should be reserved for **formalizing** that intuition.





When students find a solution on their own, they:

- Internalize the problems they face
- Derive greater satisfaction from finding the answer
- Retain the knowledge!



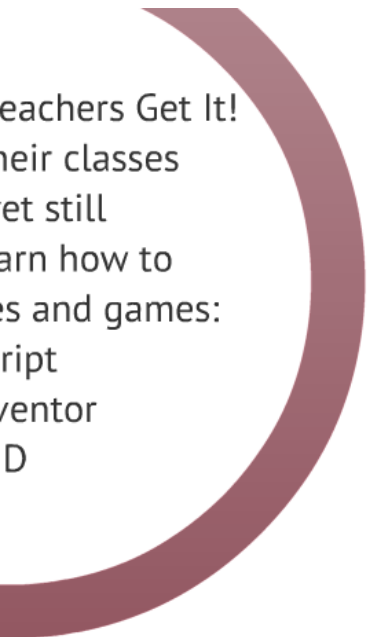
Humanities Teachers Get It!  
Students in their classes  
are novices, yet still  
manage to learn how to  
make websites and games:

- JavaScript
- AppInventor
- Unity3D



This is a more **authentic**  
way of teaching  
programming as it aligns  
more with the way that  
professionals learn code in  
real life!





Teachers Get It!  
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... and Python Supports this!

teach it



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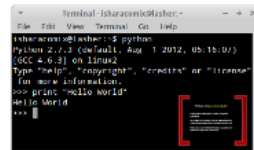
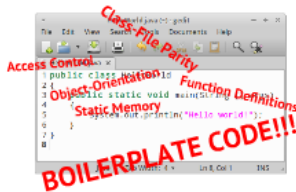
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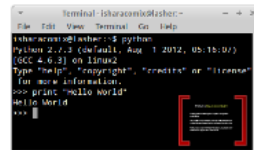
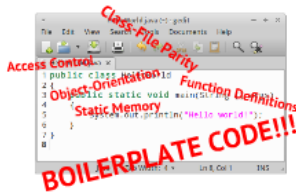
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