Slide 1

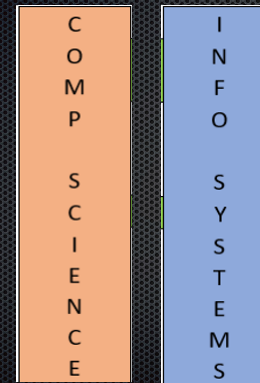**Back to the Basics, in an Effort to Improve Student retention in Intro to Programming Classes**

Dr. Ed Lindoo
Associate Professor
REGIS UNIVERSITY

Slide 2

REGIS UNIVERSITY
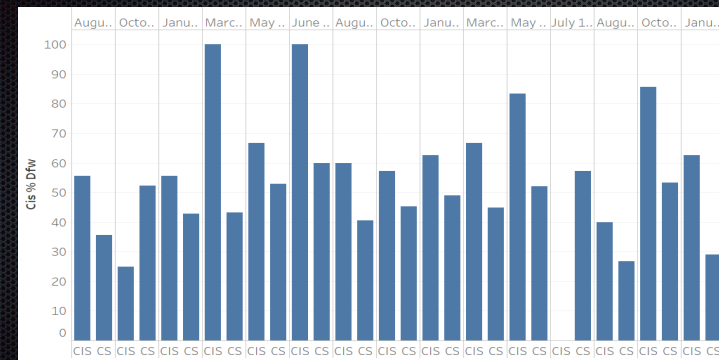
COMP SCIENCE

INFO SYSTEMS

Two distinct schools

CS

Computer Information Systems (CC&IS)

Slide 3

- 3 year average

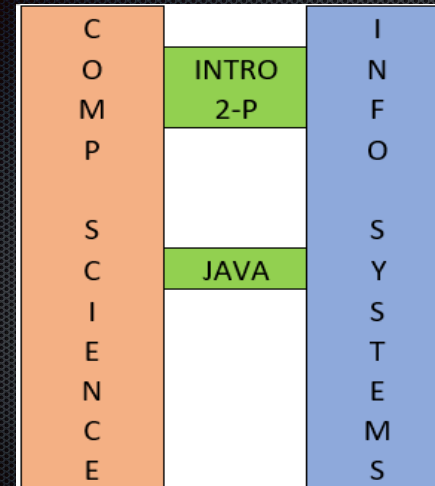- 50+ percent drop/fail rate in intro to programming class

Slide 4

3 year average
CS and CIS Drop/Fail rate

Slide 1

- Specifically CC&IS students were failing at a 62% rate!

- Big problem!

- If they fail this course, they don't continue in the program

- Represents a huge loss of revenue to the school

Slide 2

Two CIS classes taught by CS

COMP SCIENCE		INFO SYSTEMS
	INTRO 2-P	
	JAVA	

Slide 3

- Intro to programming class taught by CS department

- Computer Science students and Information Systems students (business students) took the class together.

- Business students don't have the strong technical skills to jump into a Java or C++ course

- Certainly not as an intro class

- But that's what was happening

Slide 4

- I was asked by our Dean to "Fix it"

- Performed extensive research on why students fail.

- After sifting through all the research, I decided to go back to the basics, BASIC programing that is.

- I started thinking back to my days of BASIC and QBASIC

- Remember BASIC?

```
110     'Draw top half of menu............
111     COLOR CLR4
112     FOR J = 1 TO 80: PRINT CHR$(220);
113     NEXT J
        FOR J = 2 TO 6:          ' VERTICAL LINES
114     IF X=99 THEN GOTO 400
115     LOCATE J, 1: PRINT CHR$(221);
116     LOCATE J, 80: PRINT CHR$(222);
117     NEXT
118     FOR J = 1 TO 80: PRINT CHR$(223);
119     NEXT
120     COLOR CLR3
121     LOCATE 3, 20: PRINT "SSCOM .....
122     LOCATE 5, 30: PRINT "Version ", VERNUM$
```

- Well that wasn't going to cut it!

- Further research found a common theme

- Visual Programming Environments

- Easier to understand languages. DON'T START WITH C++

- I thought long and hard about it

- Even though I had done a lot of work in VB.net, I felt like that was too heavy for this course

- Then I remembered back to my days of using Real Basic, so I went looking for it
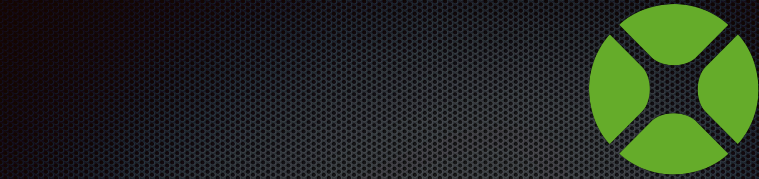
- Only to find Xojo! What a great find!

- Re-wrote the entire course, Intro to Programming based on Xojo

- Ahh, but there's a catch…………………isn't there always?

- Must pass a Java course once they pass this class.

- Hmm, what if we taught two language at the same time?

- Comparing and contrasting Xojo and Java.

Slide 1:

BASIC Code	Java Code

Dim myName As String
myName = "Elvis Presley"
Dim oneNumber As Integer
oneNumber = 5
Dim oneNumber As Double
oneNumber = 5.3
Dim thisIsAwesome As Boolean
thisIsAwesome = True
 	
Note in Xojo variables can also be declared and initialized in one line.
Dim myName as String = "Elvis Presley"
Dim onNumber as Integer = 5
	String myName;
	myName = "Elvis Presley"; //don't forget the semicolon.
	int oneNumber;
	oneNumber = 5;
	double oneNumber;
	oneNumber = 5.3;
	boolean thisIsAwesome;
	thisIsAwesome = true;
	
	Just as in Xojo, Java variables can also be declared and initialized in one line.
	String myName = "Elvis Presley";
	Int oneNumber = 5;

Slide 2:

- Researched and found a paper titled "A multilingual and comparative approach to teaching introductory computer programming"

- PERFECT! Just what I was looking for!

- And after reading through it, it made a lot of sense to take this route!

Slide 3:

- New course was introduced in the fall last year

- Since then we've seen a dramatic turn around

Slide 4:

Results?

- The student pass rate went from 38% to 85%

- But the 15% who failed, NEVER showed up for class!

- So I pretty much consider this a 100% success rate

But it gets better!

- Not only did the student pass rate hit almost 100%

- Everyone who has gone on to take our Javas class passed it!

- We went from a 47% pass rate to a 100% success rate

Thank You Xojo!

- Thank you for an easy, intuitive Visual Environment

- Thank you for a FREE, 14 chapter manual. WE USE IT!

- Thank you for an easy to learn language…..BASIC

- Thank you for a platform that runs on Windows, MAC and Linux