

Becoming a Polyglot: Lessons from Natural Language Learning

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DjangoCon 2017
@chocotiere

Bonjour!

Asslema!

Salut!

Hello!

¡Hola!

Hi!

السلام عليكم!

Salam!

Codecademy JS course

“Just like a language has nouns, verbs, and prepositions, JavaScript has its own building blocks. Instead of calling them building blocks, however, developers call them *data types*.”

NATURAL LANGUAGE

Differences

Who?







Lesson:

Fundamentally different



Why?



```
//I=15;  
MOV R3, #15  
STR R3, [R11, #-8]
```

```
//J=25;  
MOV R3, #25  
STR R3, [R11, #-12]
```

```
//I=I+J;  
LDR R2, [R11, #-8]  
LDR R3, [R11, #-12]  
ADD R3, R2, R3  
STR R3, [R11, #-8]
```

ASSEMBLY LANGUAGE

Lesson: Different goals

```
1100 1010 1011 0011  
1100 1010 1011 0011  
1100 1010 1011 0011  
1100 1010 1011 0011  
1100 1010 1011 0011  
1100 1010 1011 0011
```

MACHINE CODE

ASSEMBLER

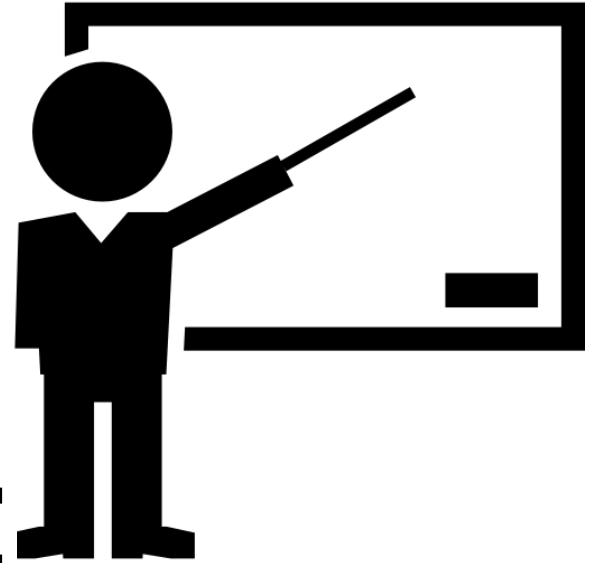
ANDROID AUTHORITY

How we learn



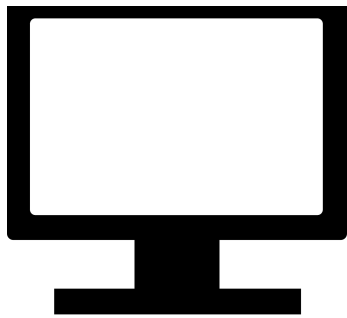


codecademy



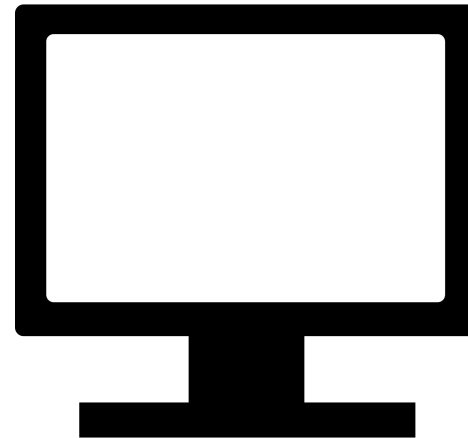
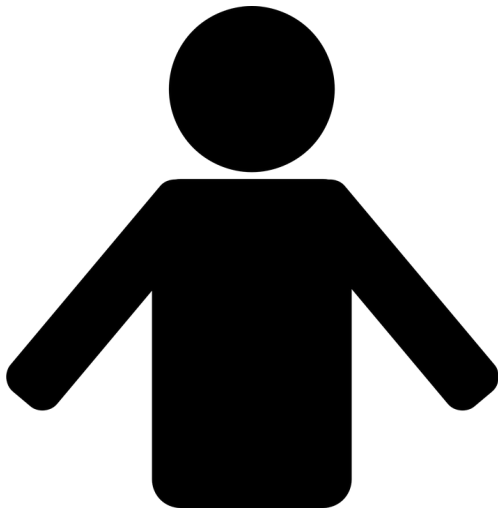
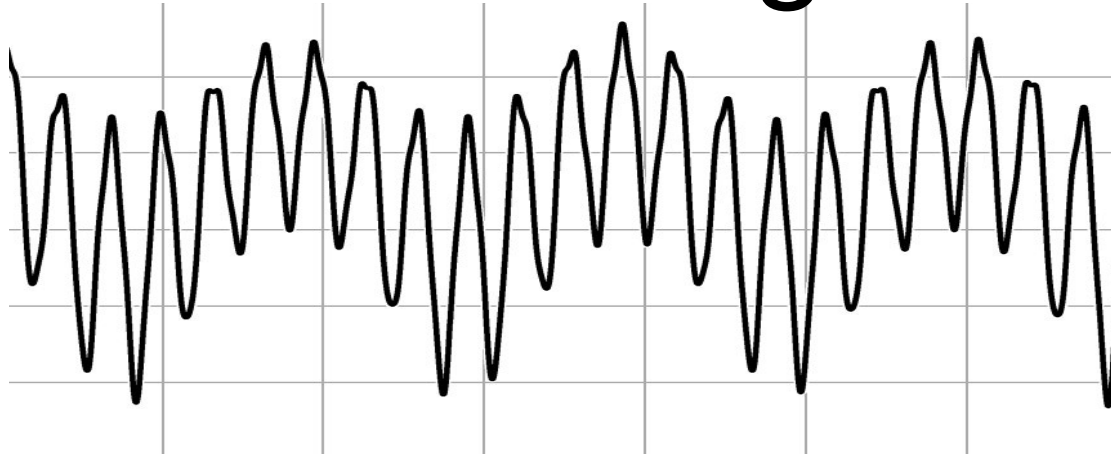
Lesson:

No 'native speakers'



Ada / DEVELOPERS
ACADEMY

Variation and change



You **might** go to the store.

You **should** go to the store.

You **might should** go to the store.

I ain't never done nothing like that before.

Let me google that for you.

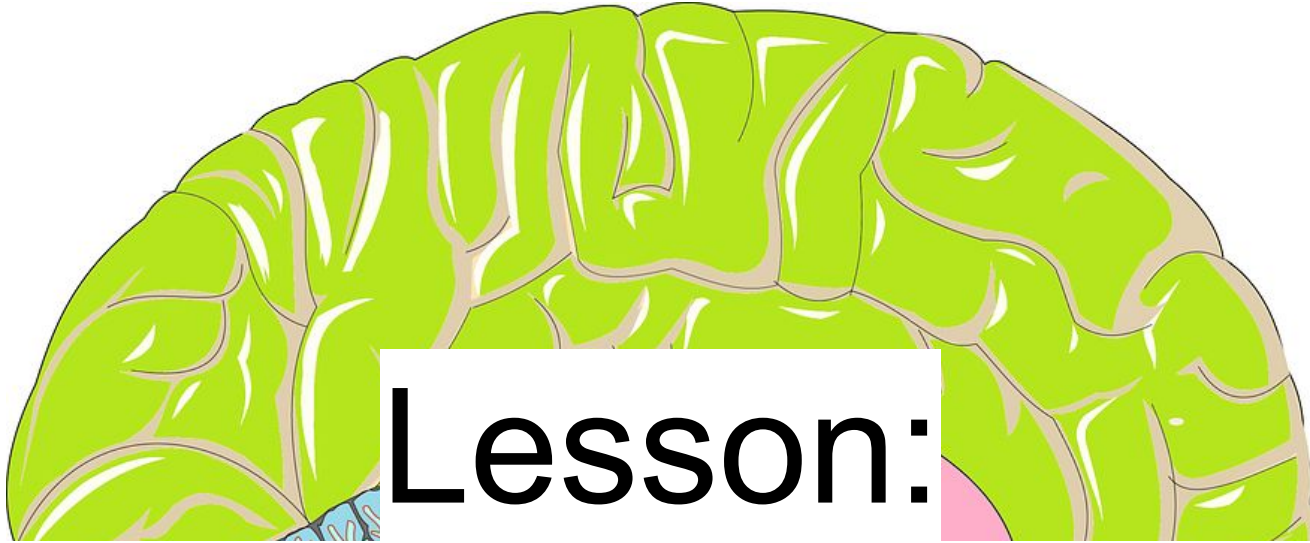

```
s = '-';  
seq = ('a', 'b', 'c')  
print s in seq
```

~~s is '-'~~ Lesson:

Computers don't do
variation

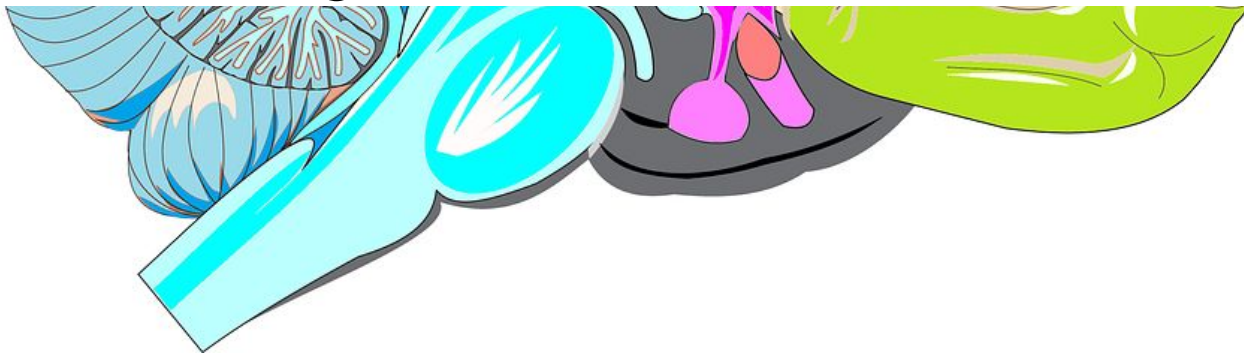
```
re.search('a-', 'a-b-c')  
re.google('a-', 'a-b-c')
```

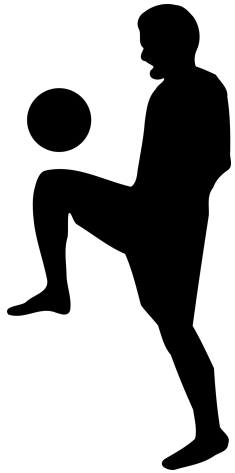
Similarities



Lesson:

Respect your brain's limits






Lesson: PRACTICE



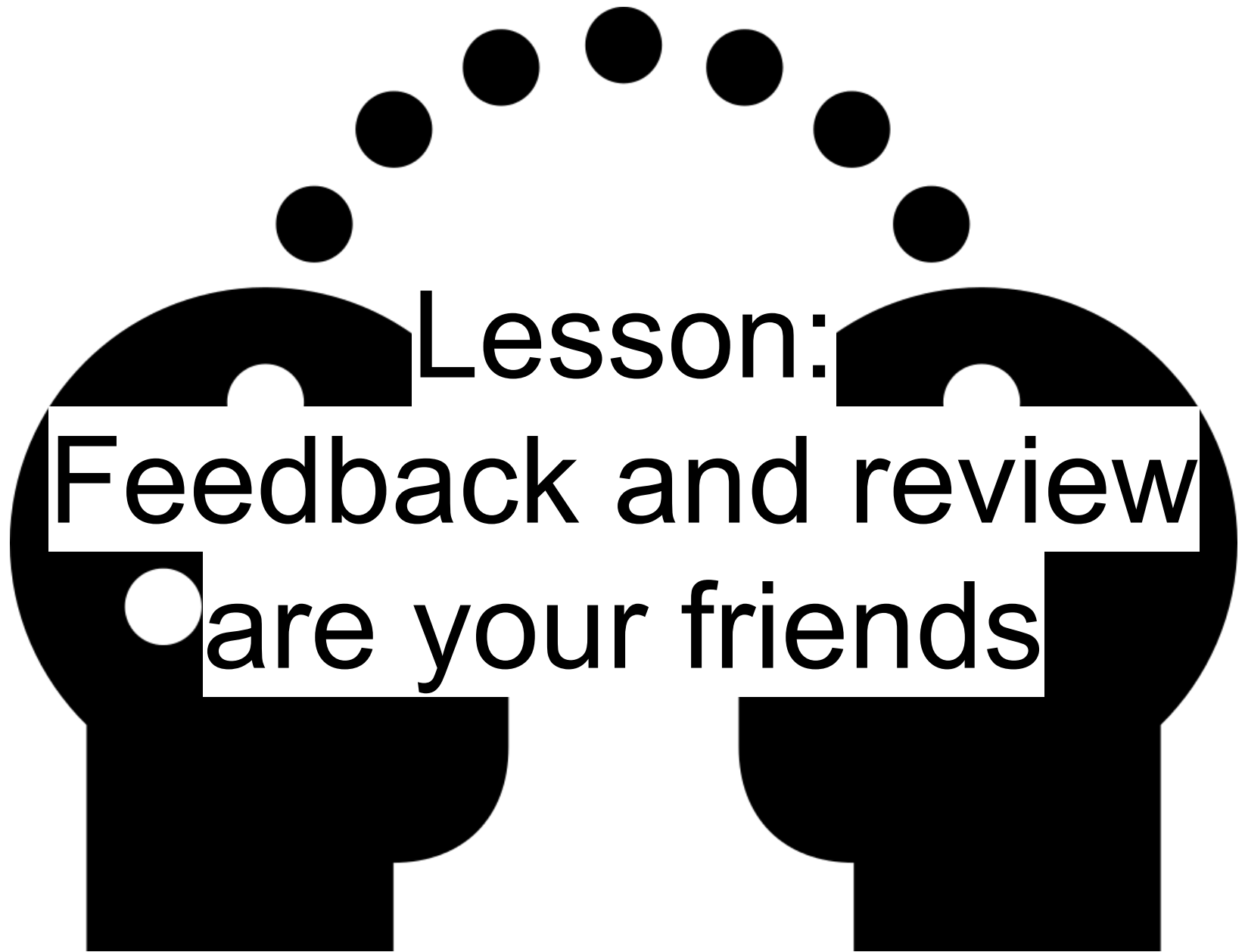


Lesson:





Lesson:
Ask Questions



Lesson:

Feedback and review
are your friends

Squamish

31

(Sk̓wx̓wú7mesh)

(Xúmis)



Vancouver

95

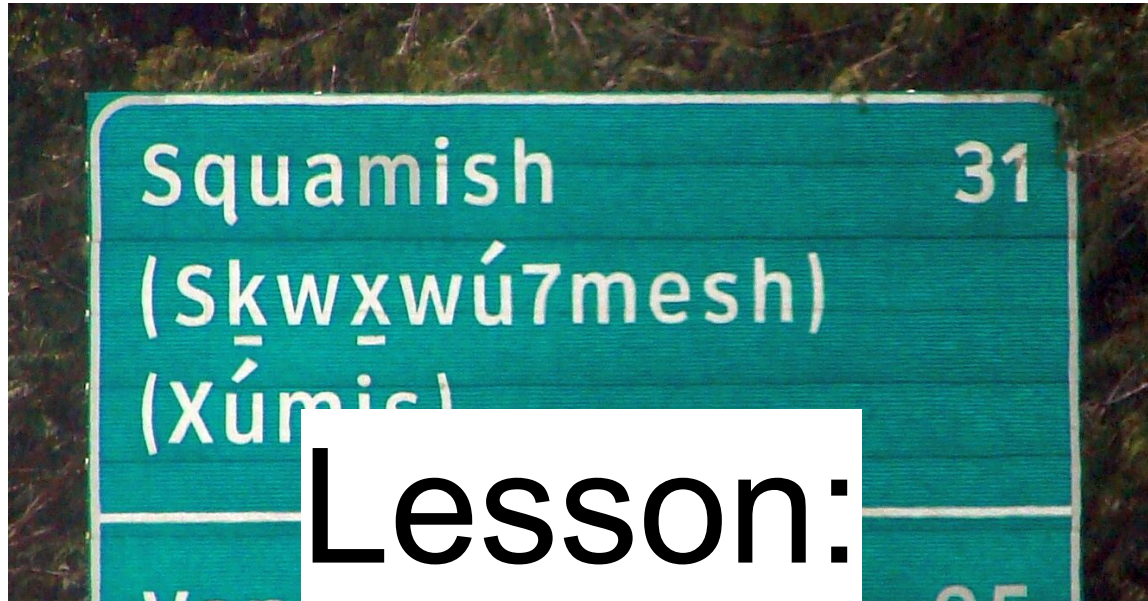
(K'emk'emeláy)

If $x == 1$:
 Do a thing

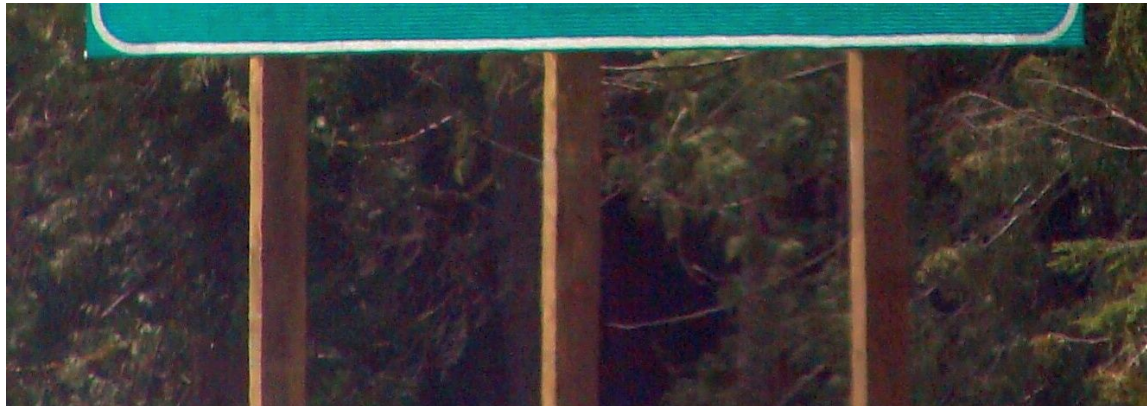
DO IF $x = 1$.
 Do a thing.
END IF.

{% if $x == 1$ %}
 Do a thing
{% endif %}

IF $X EQ 1$
 THEN DO A THING
END-IF



Bilingual != 2 monolinguals





Lesson:

Earn more money!



Language རྒྱལ་སྐད་ Linguaggio ЯЗЫК
 Γλώσσα Jezyk መገናኛ لسان بولی
 ᐱᐢᐱᐢ ስሃሽፍ Lenguaje
 Langage ভাষা 言語
 भाषा భాష 𐄌𐄌 𐄌𐄌
 Linguagem Wika 𐄌𐄌𐄌 𐄌𐄌𐄌
 Sprache 语言 𐄌𐄌𐄌 Bahasa 언어



THANK YOU