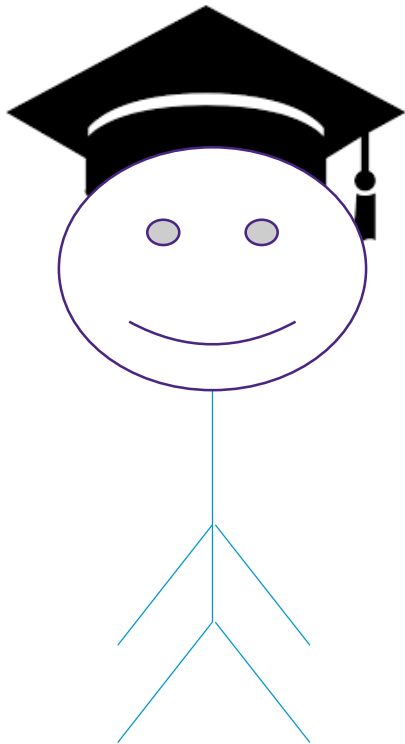
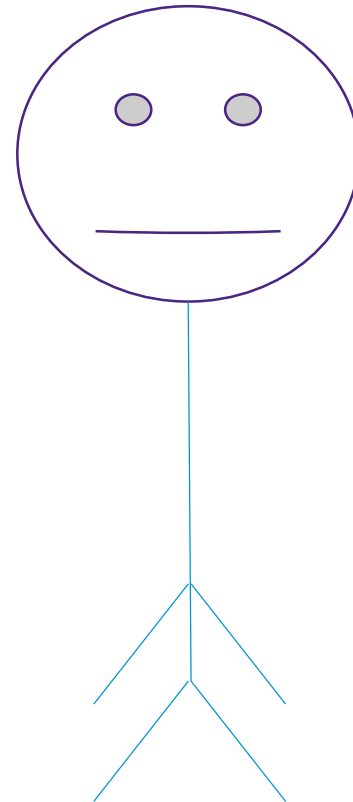


Student at math oral examination

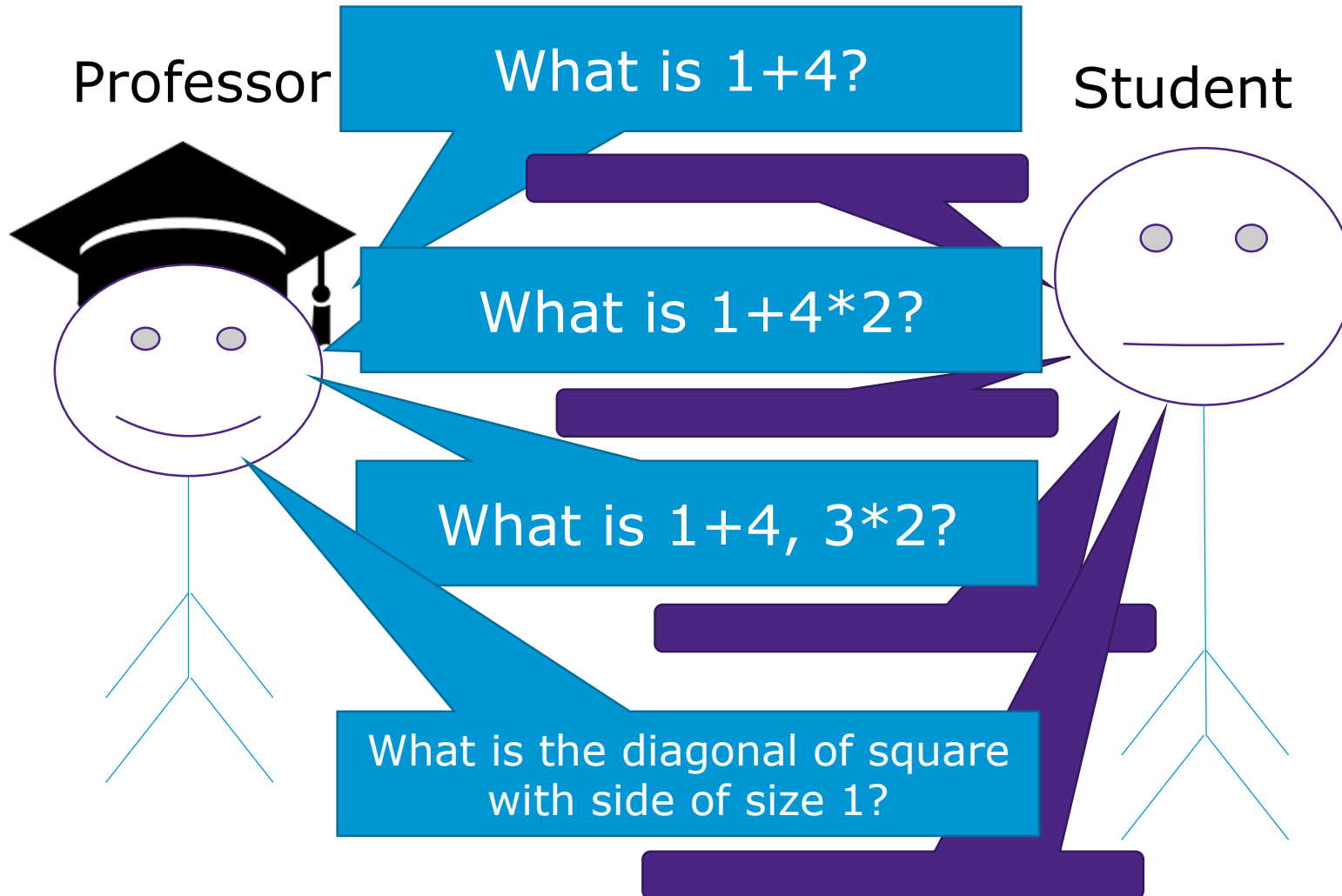
Professor



Student

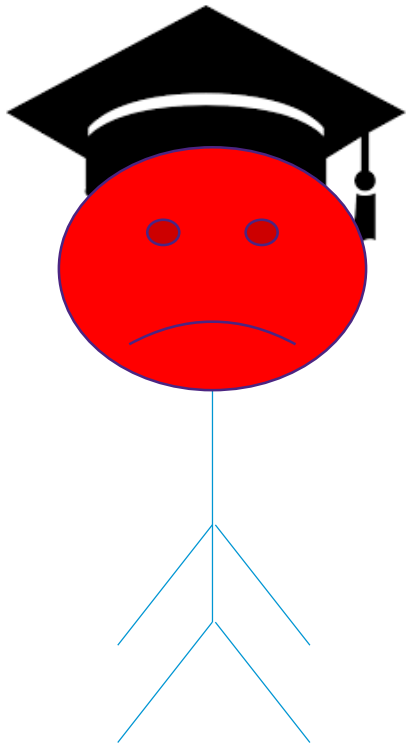


Student at math oral examination

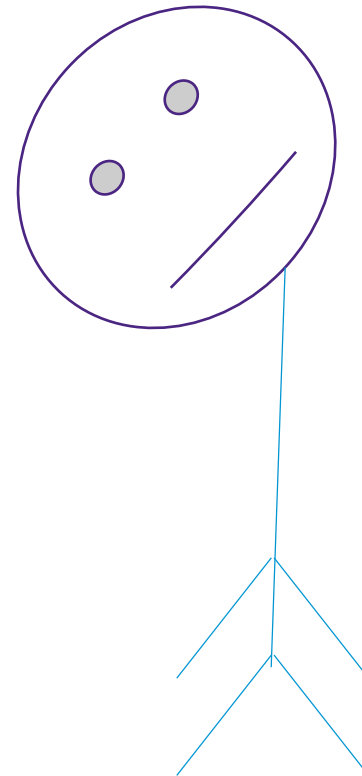


Student at math oral examination

Professor

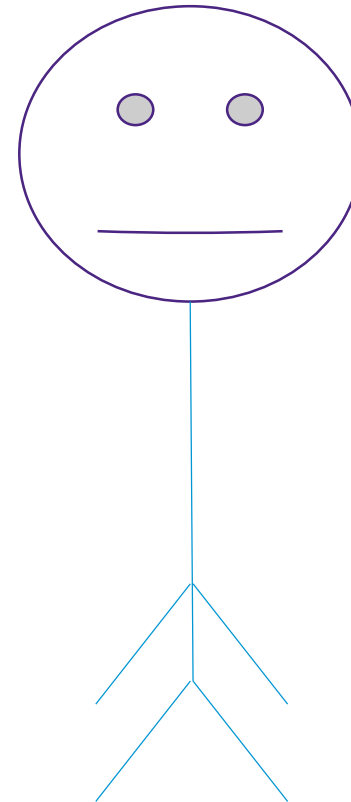


Student

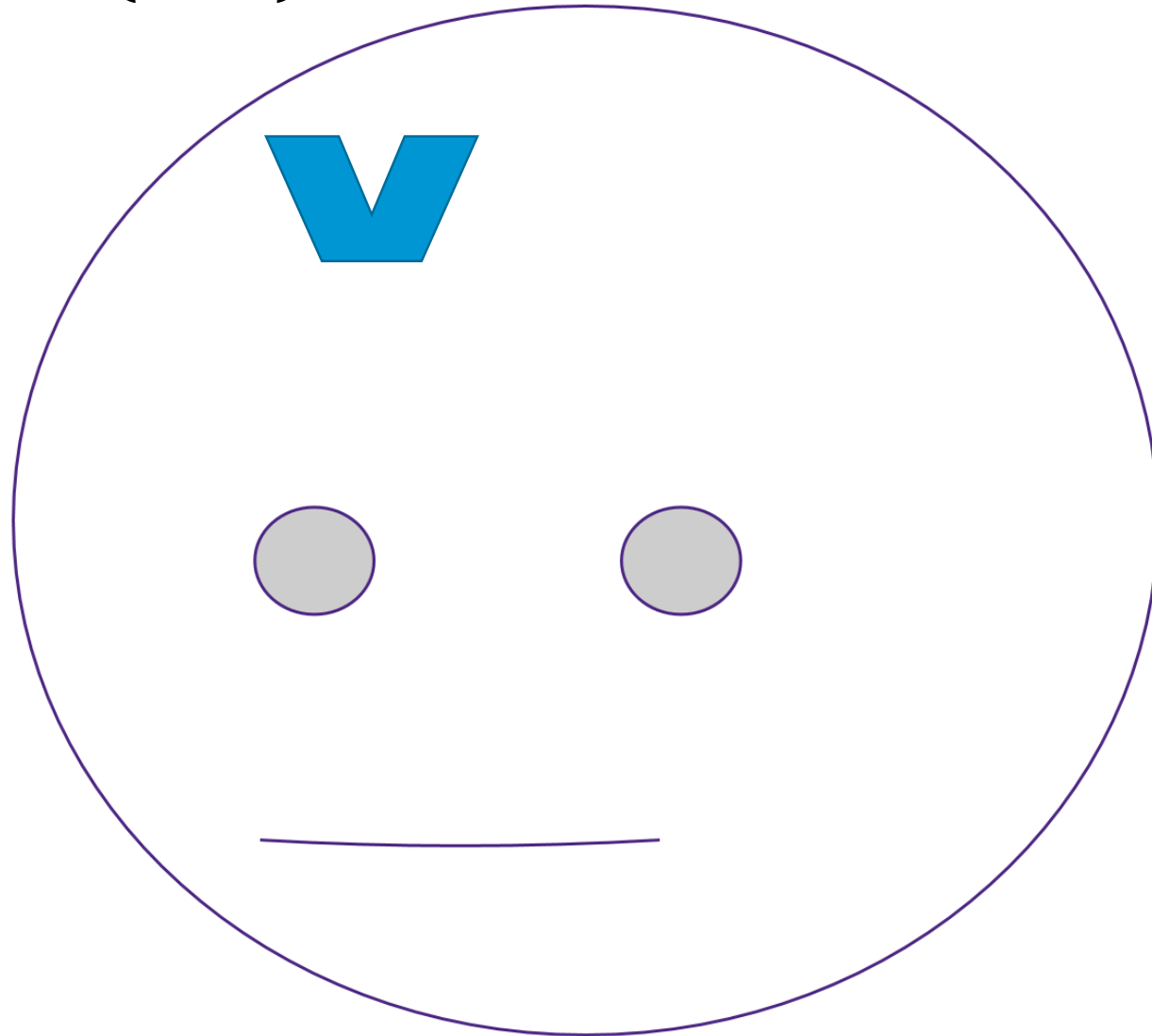


Let's fix the student!

Student



Arithmetic logic unit (ALU)



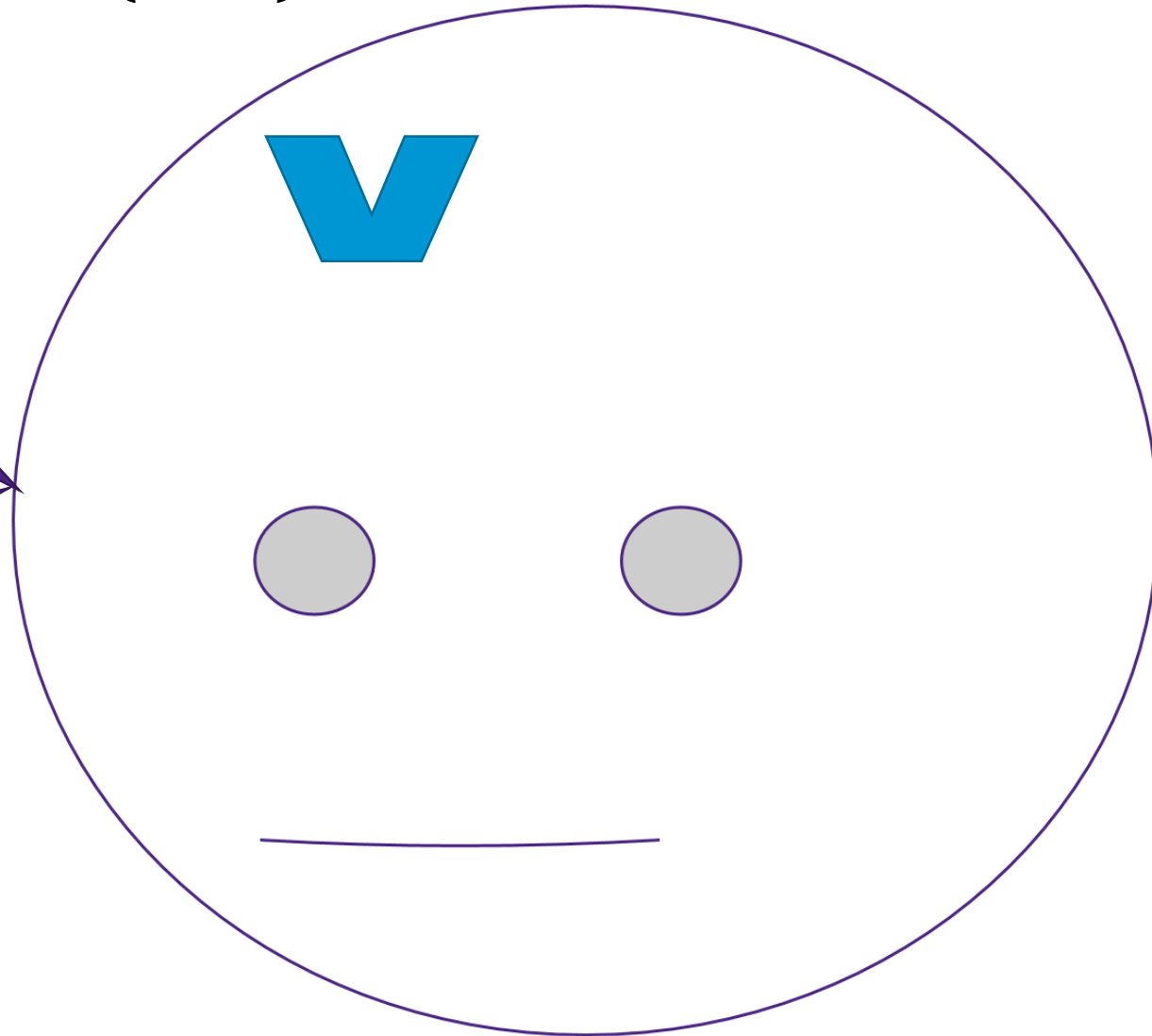
Arithmetic logic unit (ALU)

What is $1+4$?

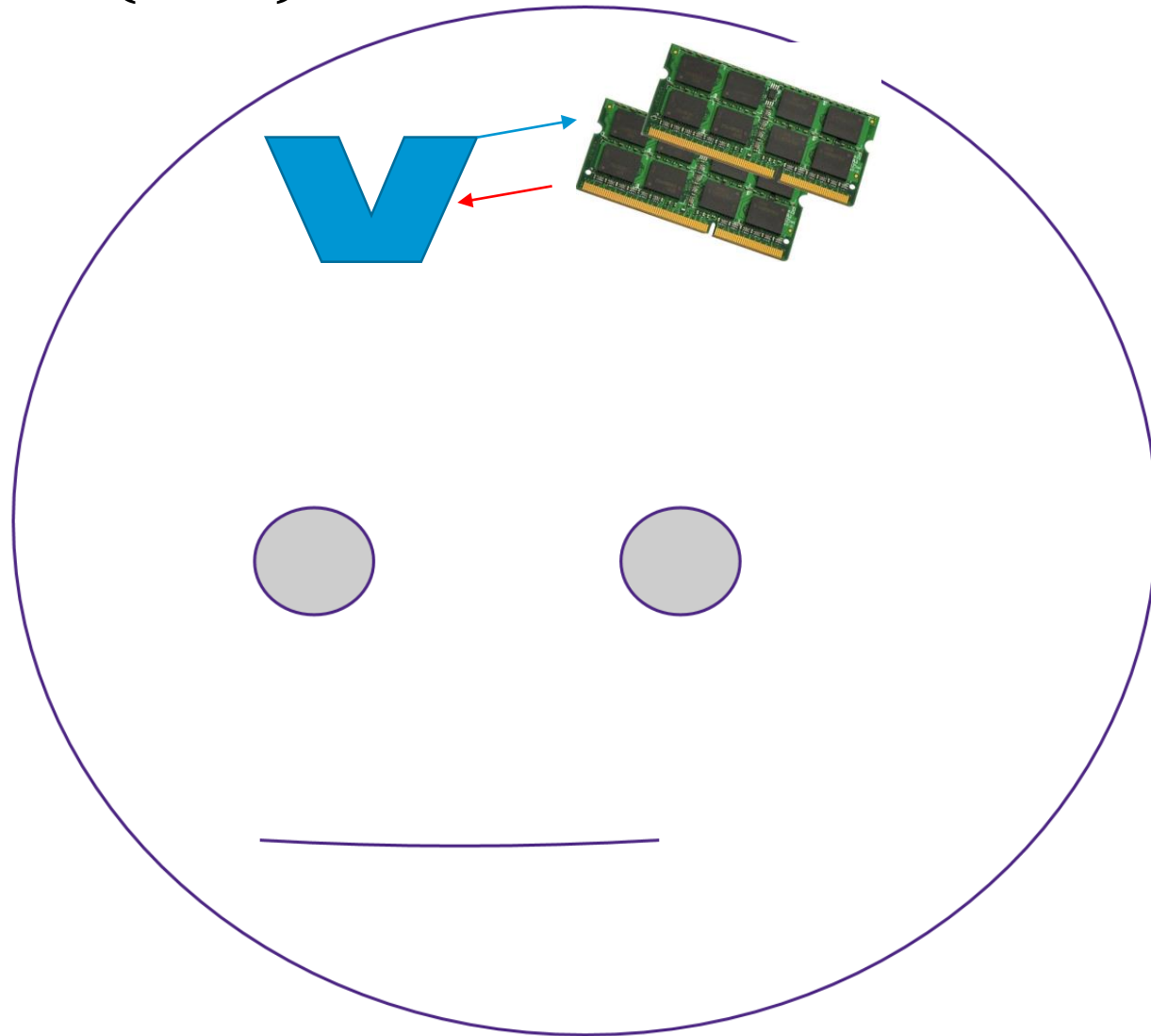
5!

What is $1+4*2$?

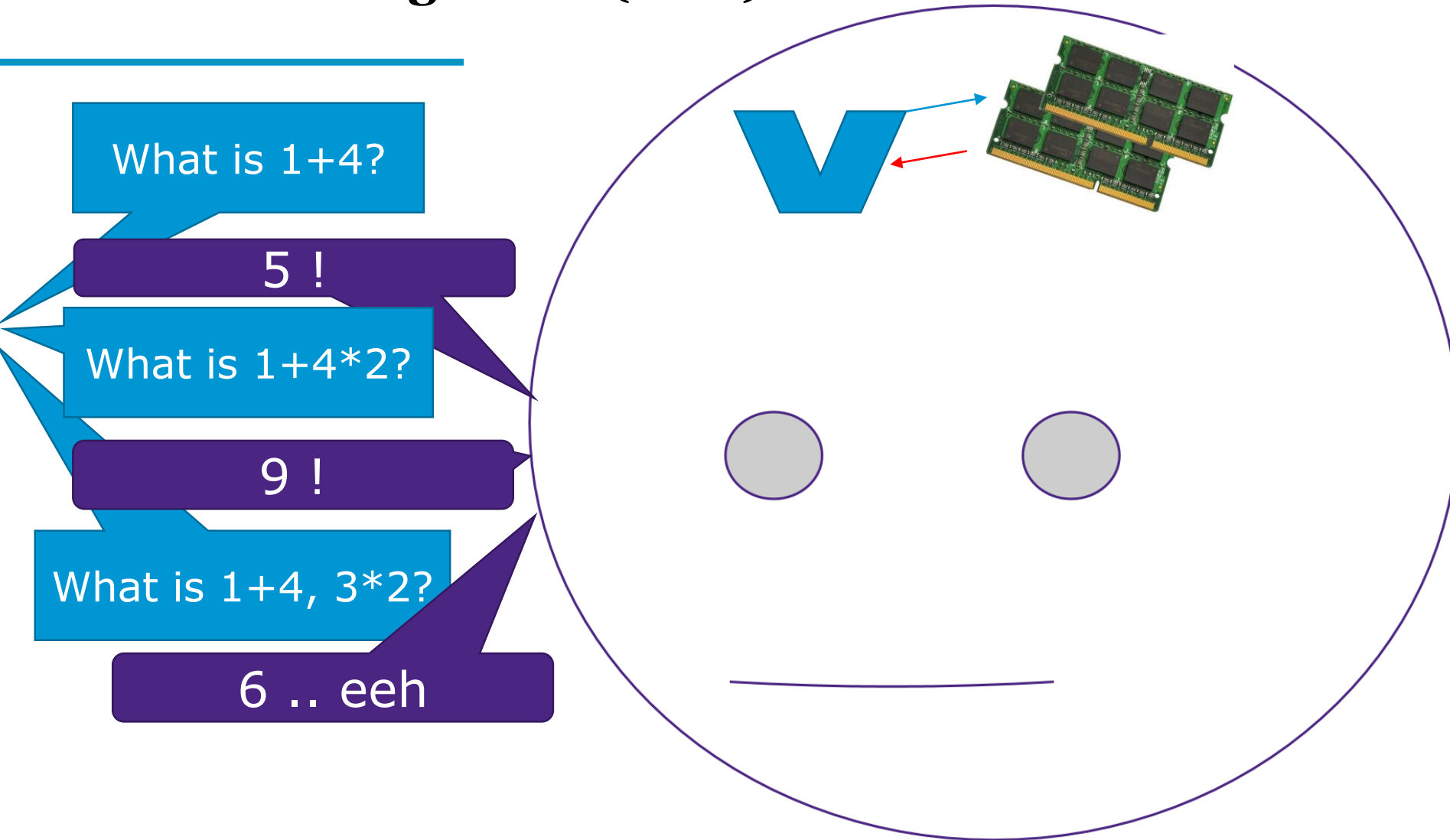
8 ...



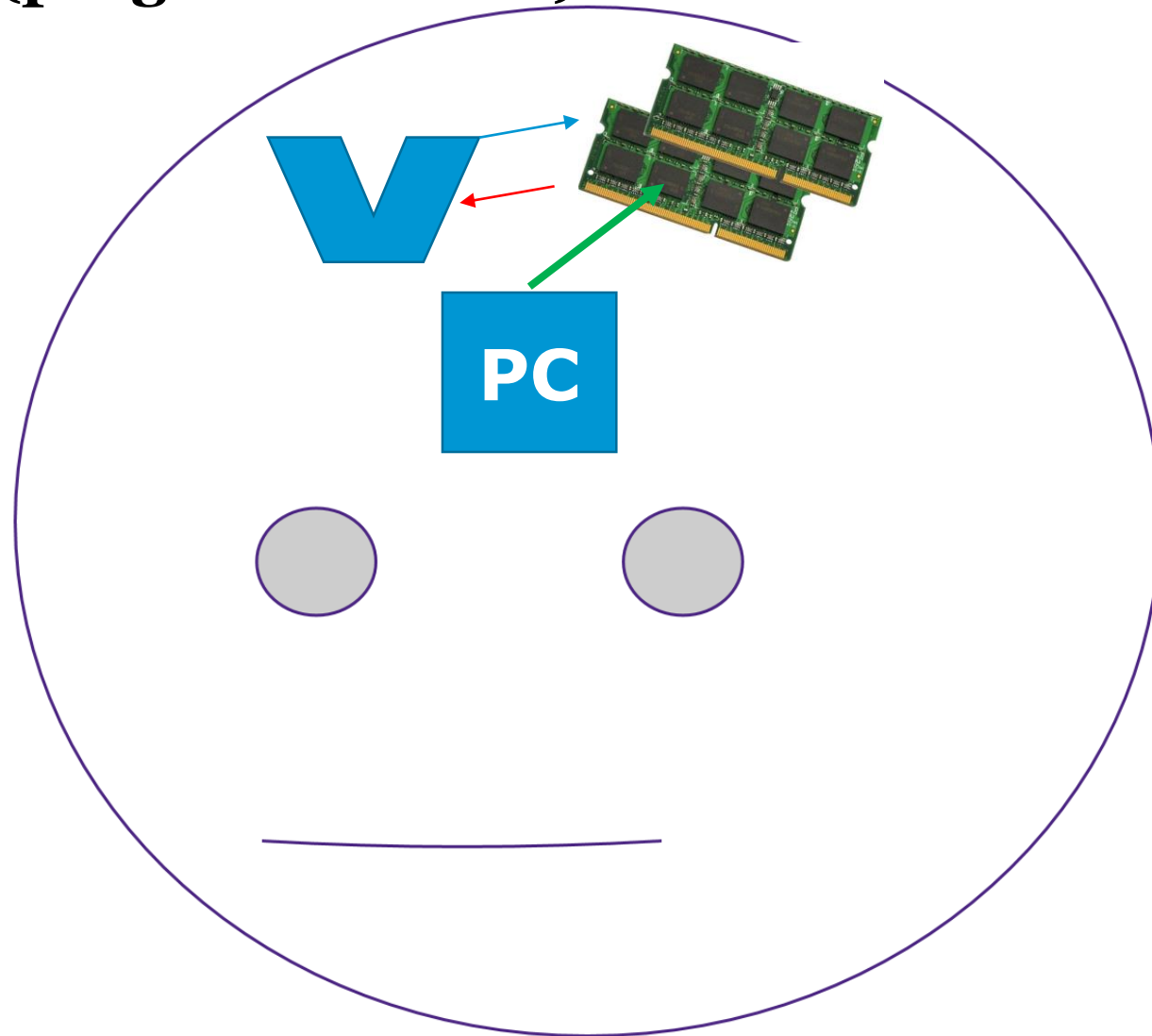
Arithmetic logic unit (ALU) + RAM



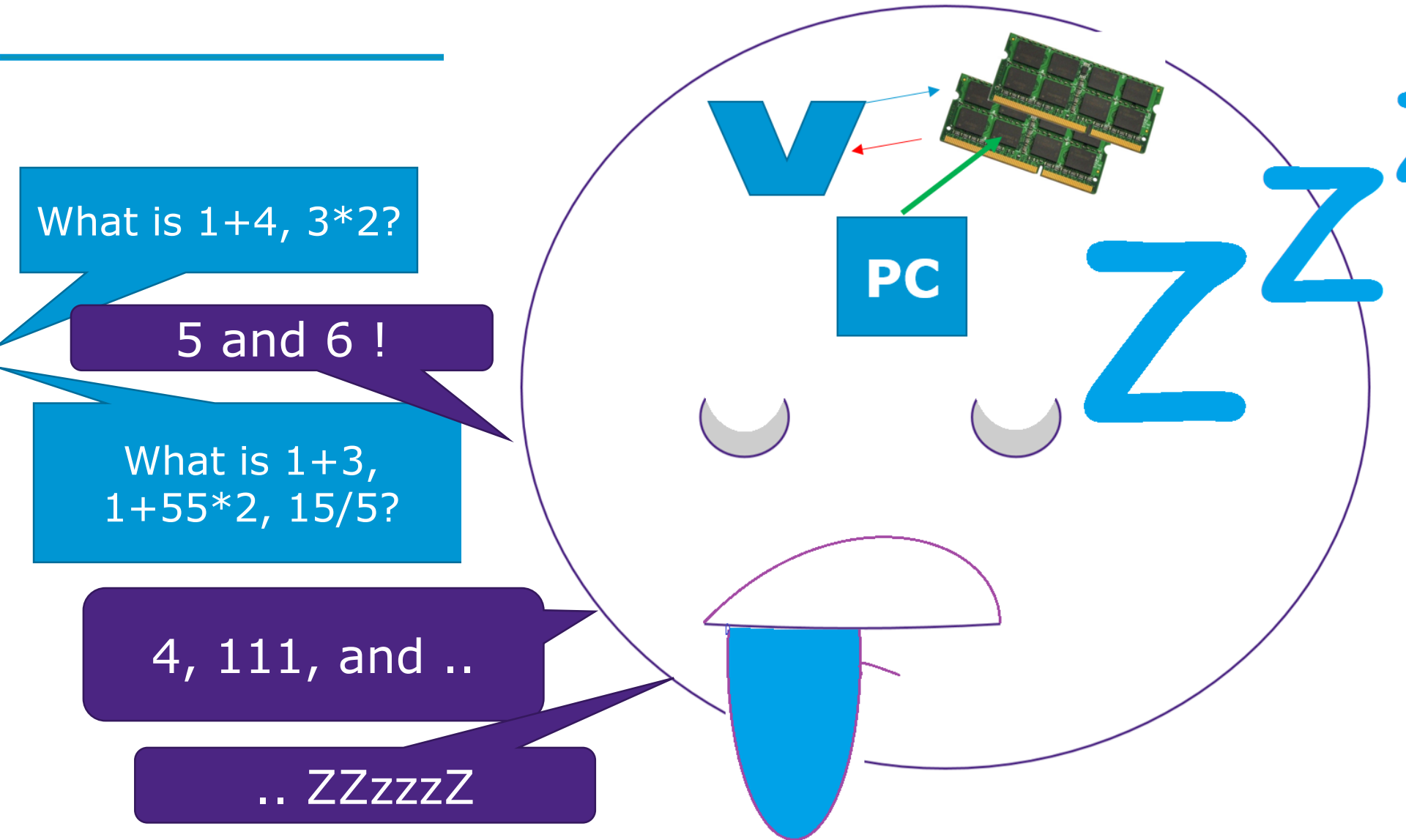
Arithmetic logic unit (ALU) + RAM



ALU + RAM + PC (program counter)



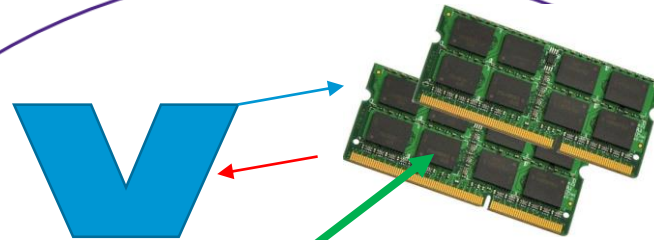
ALU + RAM + PC (program counter)



ALU + RAM + PC + Clock

What is $1+3$,
 $1+55*2$, $15/5$?

4, 111, and
2!



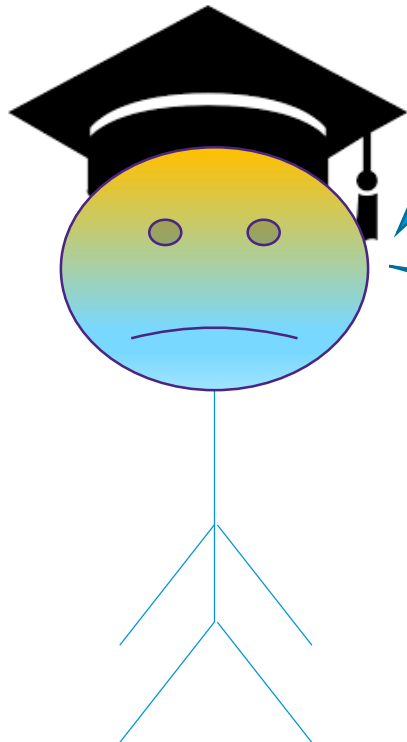
PC



Don't
sleep! Do
everythin
g step by
step!

Student at math oral examination

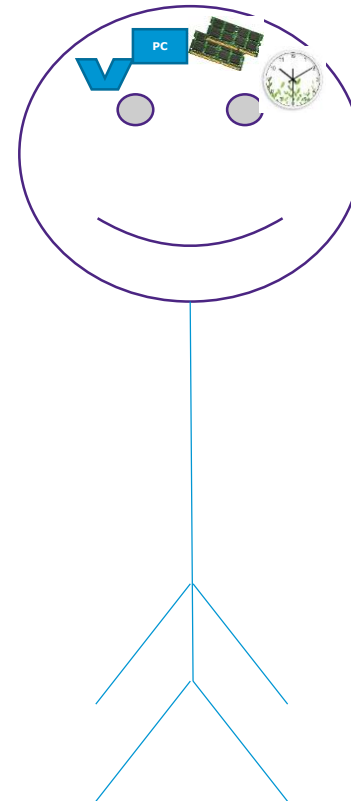
Professor



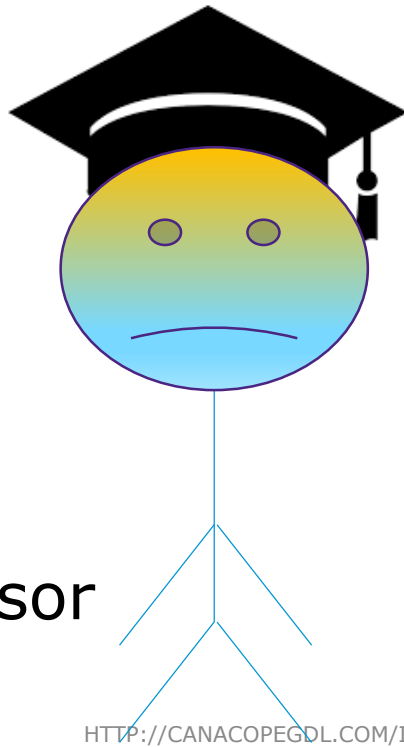
But the student
still knows only
how to add
numbers...

What about
*Pythagorean
theorem,*
derivatives?

Student

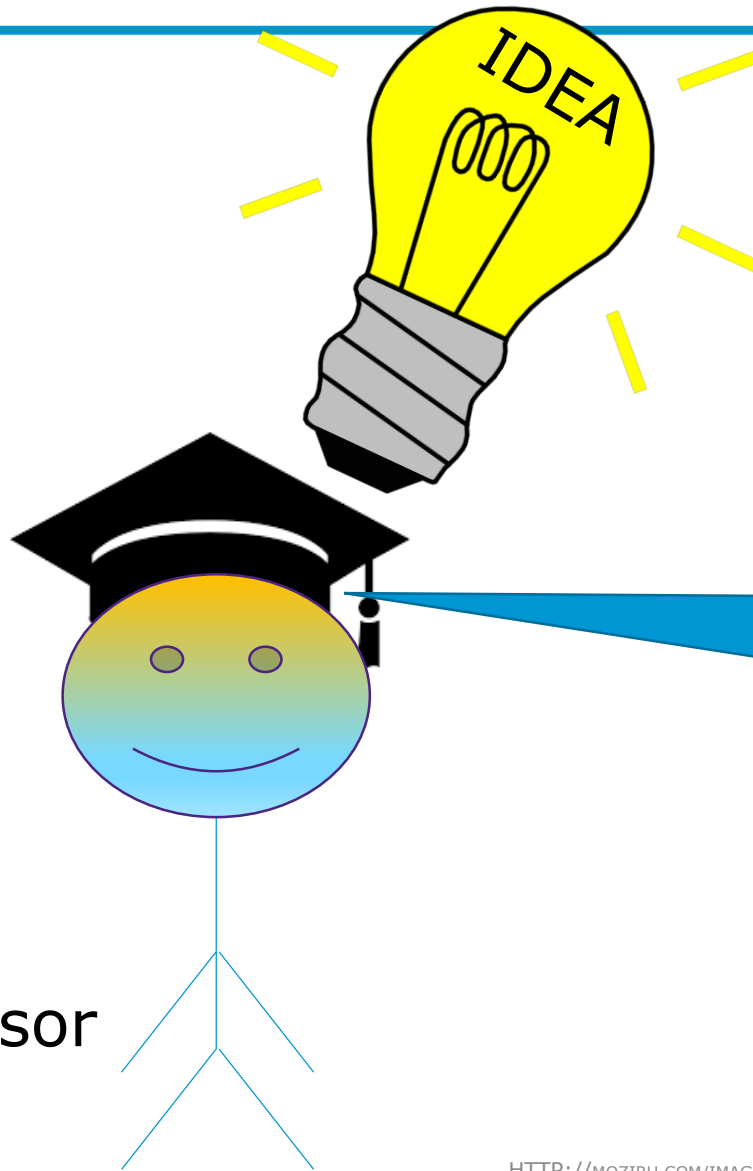


Student at math oral examination



Professor

Student at math oral examination



Let's teach the
student!
Right from the start!

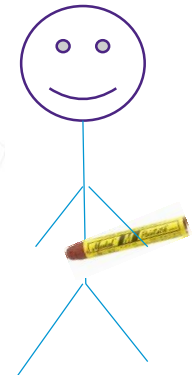
Professor

Student at math oral examination

Elementary school Assembler

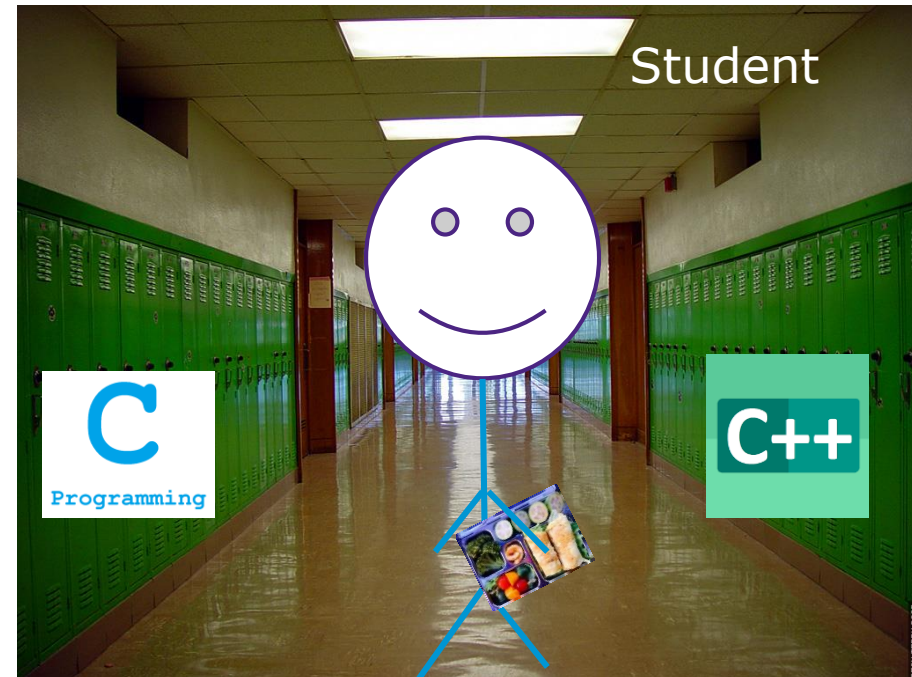


Student



Software!

Elementary school	Assembler
High school	Low level languages



Software!

Elementary school	Assembler
High school	Low level languages
University	High Level Languages



Professor

FINALLY! My student is ready for life!



Student



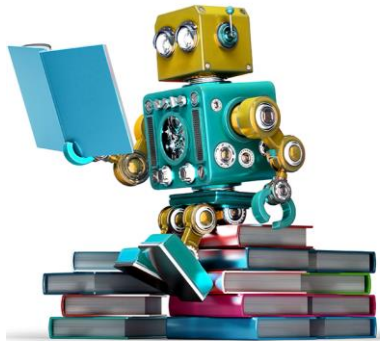
Software!

Elementary school	Assembler
High school	Low level languages
University student	High Level Languages
PhD	Machine learning

I am
doing
something
useful



PhD
Student



theano

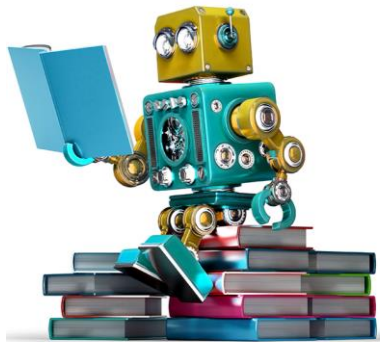
K Keras



Software!

Elementary school	Assembler
High school	Low level languages
University student	High Level Languages
PhD	Machine learning

Machine able
to alter its own
instructions



I am
doing
something
useful

PhD
Student

theano

K Keras

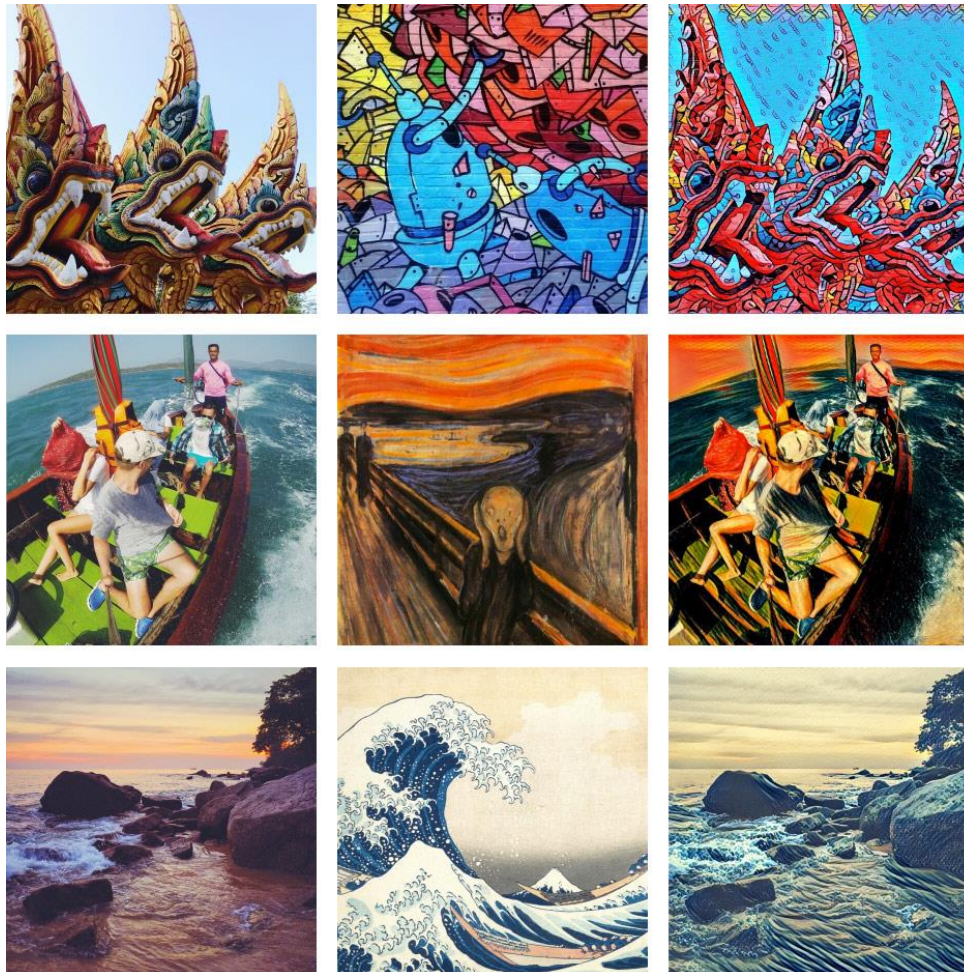
TensorFlow

Autonomous cars

Video



Image processing

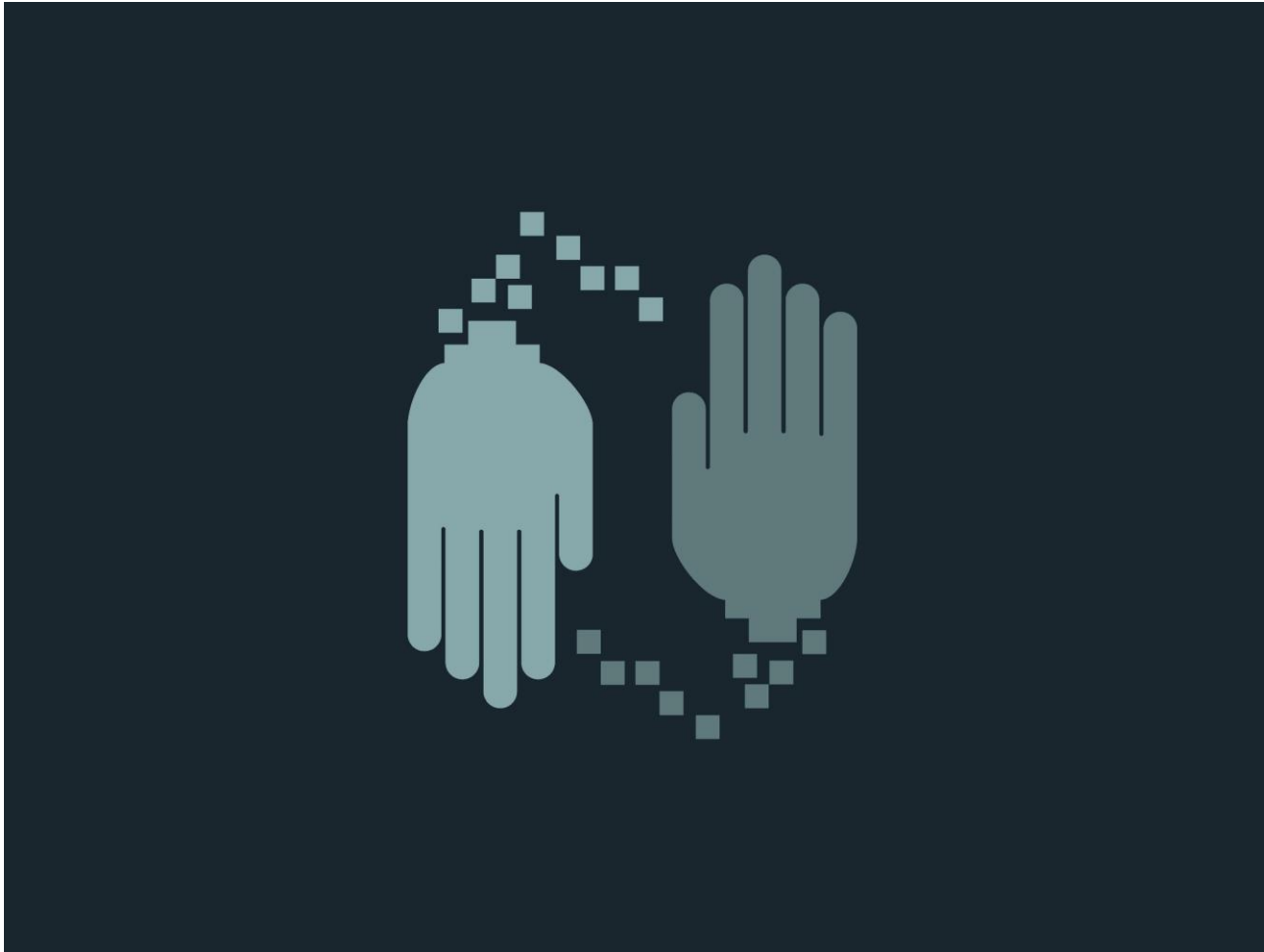


Bug fixing in applications

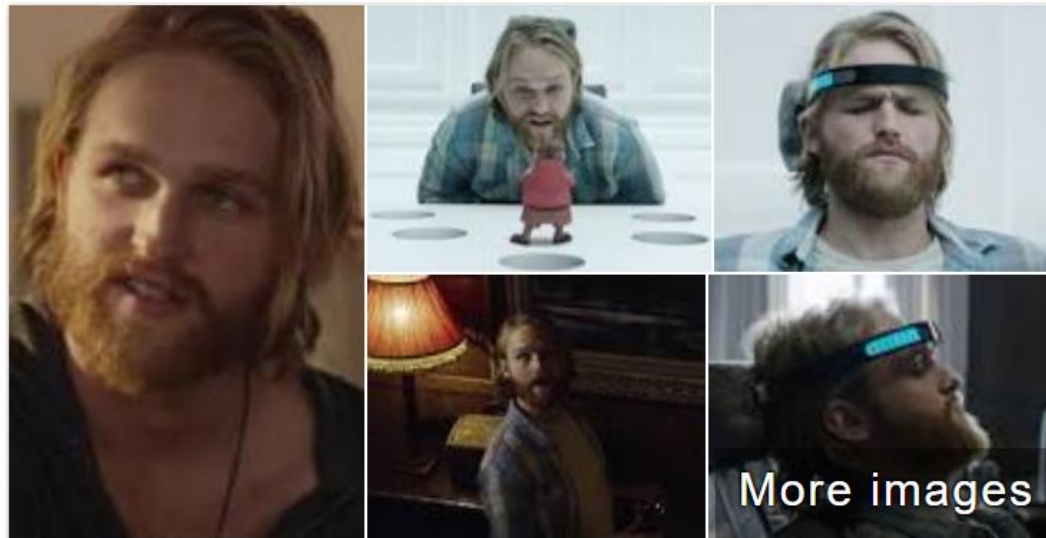


Ubisoft's AI experiments have resulted in more realistic enemy behaviour in Far Cry 5

Software learns to write software



Machine learning



Playtest

Black Mirror episode



While in Britain, a thrill-seeking globetrotter tests a video game that is terrifyingly advanced.