(.NET) Development

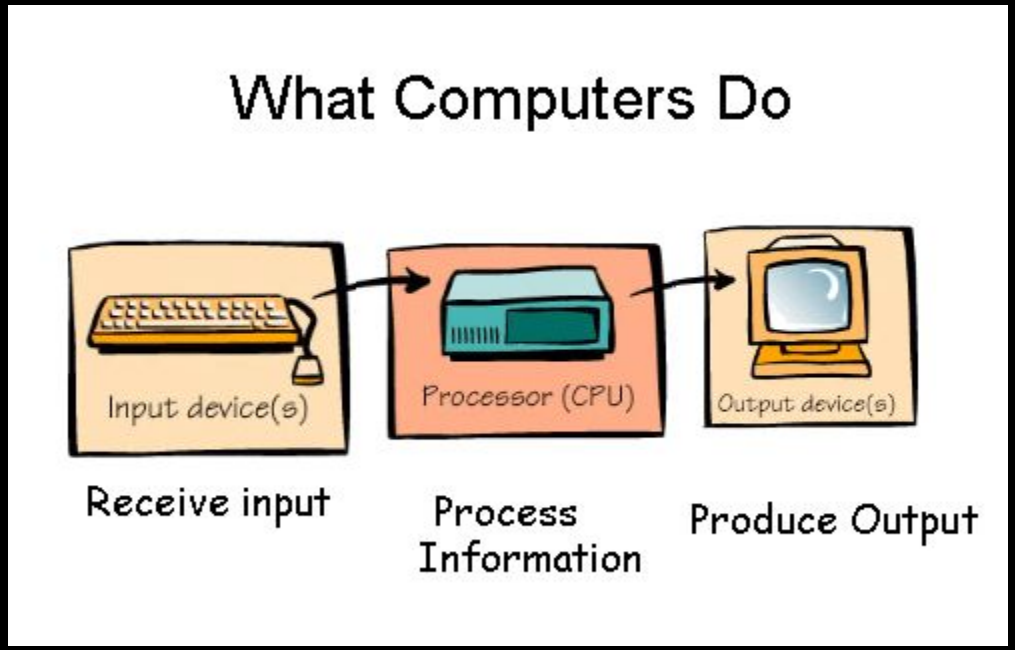
Introduction Module

@Wantsome

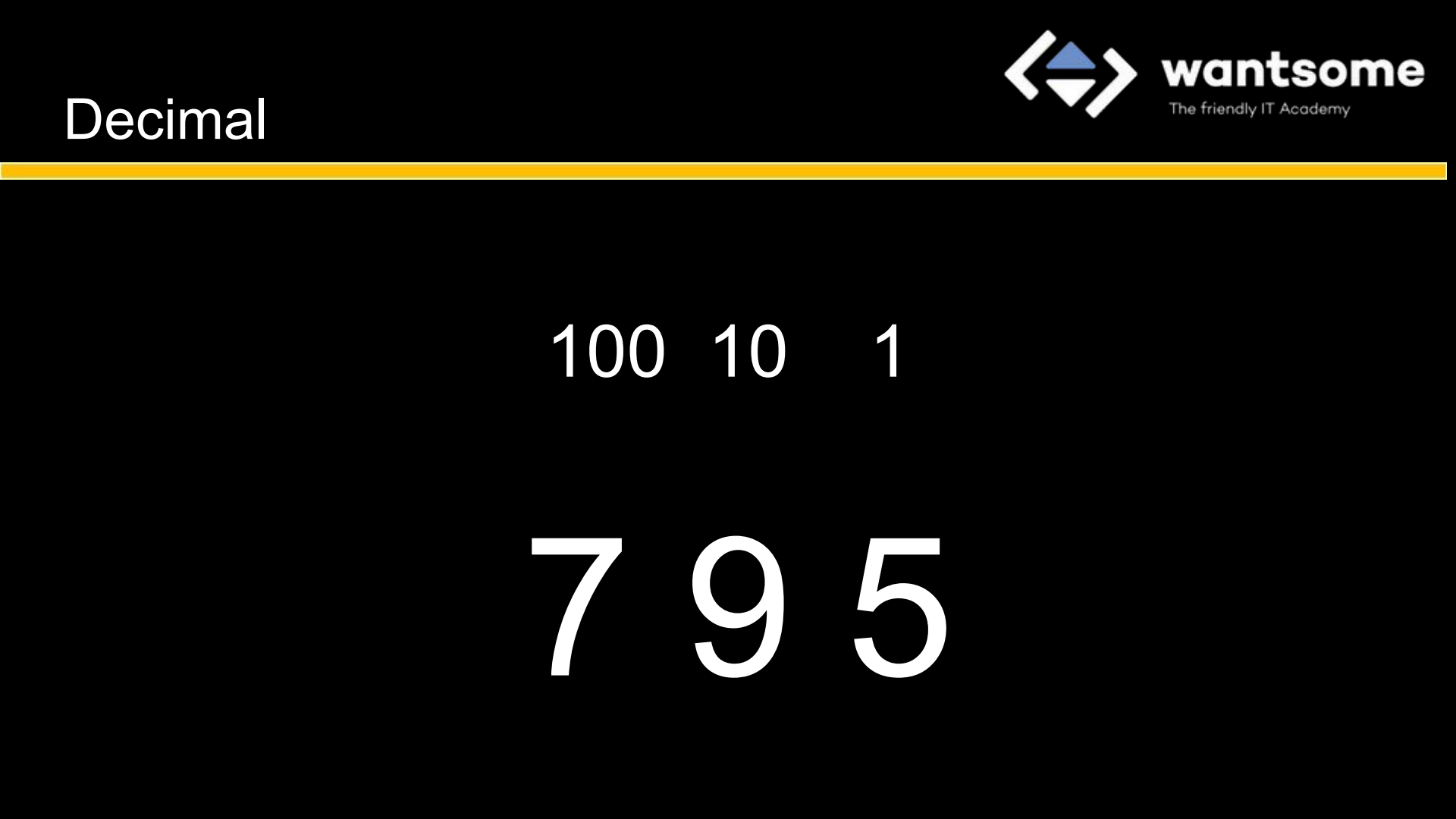
Computer Science - CS50

wantsome
The friendly IT Academy

Computer Science = Problem Solving



Decimal



Binary: bit, byte, Kb, KB, Mb, MB, Gb, GB...

wantsome
The friendly IT Academy

8 4 2 1

1 0 0 1

ASCII & UTF8 & UTF16

wantsome
The friendly IT Academy

ASCII: ‘character encoding standard for electronic communication’ (wikipedia)

https://en.wikipedia.org/wiki/ASCII

83 97 108 117 116 33

UTF-8 is ASCII compatible

RGB => photos => animations

Algorithms: lets solve problems

wantsome
The friendly IT Academy

Step 0: everybody please stand up

Step 1: think of number 1

Step 2: Pair with someone and add your numbers together

Step 3: One stands down, the other goes back to Step 1 with the new number

Algorithms: lets solve problems

wantsome
The friendly IT Academy

First algorithm: Find out the minimum from a list

Human steps

1. Take the first *item* from the *list* and we suppose it is ***min***
2. Move to the next *element* (which becomes the ***current element***)
3. Compare the ***min*** with the ***current element***
   a. **If the min is smaller then it remains the min**
   b. **Else if the min is bigger then we have a new min**
4. Is the *list* finished?
   a. **If the list is finished then we display the min**
   b. **Else if the list is not finished then we repeat step 2**

Find a name in the phone book

wantsome

The friendly IT Academy

Lets make it (together) into human steps

What to follow?

wantsome
The friendly IT Academy

Nouns => variables

Actions=> functions

Conditions => decisions

GoTo => cycle / loop

Phone book in Human steps

1. Open the phonebook at the middle
2. If Popescu Ion is on that page then Call him
3. Else If Popescu is in the first part
   a. Repeat from Step 1 for the first part of the phonebook
   b. Else Repeat from Step 1 for the second part of the phonebook

Sorting a list

wantsome
The friendly IT Academy

Lets make it (together) into human steps

Exercise @ HOME

wantsome
The friendly IT Academy

1) Find a sorting algorithm and make it into human steps (recommended - bubble sort)
2) Take an action you do regularly and decompose it into separate steps. Examples: take out the garbage, clean the room/apartment/house, prepare breakfast etc

Please work individually on this assignment!