BASIC PROGRAMMING IN C

FREE ONLINE COURSE
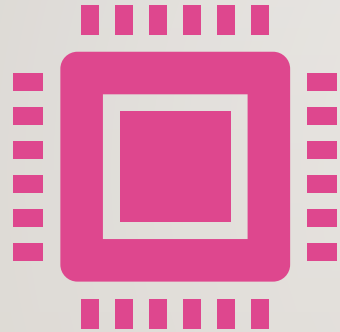
TEACHER: ALESSIO MUNGELLI

WHO I AM?

- Alessio Mungelli. I was born in the 1998 and I am a Computer Science student at the University of Turin.

- My main research area is software developement.

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WHAT WE ARE GOING TO DO?

During these lessons we are going to study the basic concepts of programming.

Lessons will be interactive. Don't think that you will sit and just listen ;)

WHAT DO YOU NEED TO FOLLOW MY LESSONS?

- A text editor, like:
  - Atom (https://atom.io),
  - Notepad++ (https://notepad-plus-plus.org/downloads/)
- Paper
- Pens or pencils
- MinGW Compiler (http://www.mingw.org)

HOW DO I SHARE WHAT I SHOW DURING THE LESSONS AND OTHER USEFUL MATERIALS?

- GitHub: https://github.com/aleale98/Basic_C_Course

- E-mail: if you do not use GitHub or if you have particular needs, I will share everything using e-mail.

- We can talk about other platforms you like.

PROGRAMMING: A WAY OF THINKING

- Usually, people think that programming is spending all the day in front of a monitor typing strange words and doing things that only aliens can understand ;)

Programming is
10% writing code
and **90%**
understanding why
it's not working.

Yes, That is Programming

PROGRAMMING: BASIC DEFINITION

- Basically, programming means **solving problems**

A PARTICULAR WAY OF THINKING

- Today we are not going to write any code. We are just going to learn «how to think properly».

- When we have to solve a problem, we have to split it up into smaller problems, easier to solve.

- Let's understand better

HOW TO WALK

- Let's think that we have to explain to a little kid how to walk. We will not say just «walk». We would say something like:

1. Stand up;

2. Start moving forward your left foot;

3. Then move after your left foot your right foot

4. Go on until you reach your destination

SPLITTING PROBLEMS

- This is a rough description of how we walk. Generally, when we have to program, we should try to describe in the best way the steps required in order to solve the problem.

- Let's make some other examples

ALGORITHMS

- A process or set of rules to be followed in calculations or other problem-solving operations, especially by a computer.

- Basically, an algorithm is a "recipe" to solve a problem

MAKE A PHONE CALL

- Let's see how to solve the problem «make a phone call». Imagine that you have to explain to someone that has never used a telephone how to make a phone call.

- What would you say?

MAKE A PHONE CALL (2)

1. …

2. Read a number from the mobile phone;

3. Press the corresponding button on the phone;

4. Press the green button to make the call;

5. …

MAKE A PHON CALL (3)

- Do you think that the description we gave before would be enough for a person who has never seen a telephone?

MAKE A PHONE CALL (4)

1. Turn on the telephone if it is not;

2. Read a number from the telephone number from left to right;

3. Press the corresponding button on the phone;

4. Press the green button to make the call;

5. Talk;

6. When the conversation finished, press the red button to close the call;

MAKE A PHONE CALL

- This description is much better and will let the majority of people understand how to make a phone call.

EXERCISE

- Describe the «recipe» to explain how to follow a lesson.

FOLLOW A LESSON

EXERCISE

- Explain how to look for a word in a dictionary

LOOK FOR A WORD IN A DICTIONARY