Computer Programming
2022 - S1

Professor: Andres Rene Gutierrez
Email: agutierrezt@unal.edu.co
Phone: +573108003068

Description

The main goal is to teach the students, how to solve problems by using algorithms and how to portray them into a specific programming language as Python, Java, C or Javascript.

Objetives

- Recognized different types of problems.
- Solve problems using algorithms.
- Recognized the different control flow of the programing language.
- Recognized the different data structure of the programing language.
- Implement algorithms into a specific programing language.

"Learning to program is like learning to swim, is an active learning process that is only achieved if the student tries to program, that is, learning to program depends largely on the motivation and active work of the student."
19-24 SEP

Content

Date	Content	Link
09-08	Course presentation	N/A
11-08	Problems, Solution and algorithms	N/A

Date	Content	Link
16-08	Data types and operators	https://github.com/Andres930410/computer_programing/blob/main/Tipos%20de%20datos%20y%20Expressiones.ipynb
18-08	Functions	https://github.com/Andres930410/computer_programing/blob/main/Funciones.ipynb
23-08	Conditionals	https://github.com/Andres930410/computer_programing/blob/main/Estructuras%20condicionales.ipynb
25-08	Loops - While, Do while	https://github.com/Andres930410/computer_programing/blob/main/Estructuras%20ciclicas%20I.ipynb
30-08	Loops - For	https://github.com/Andres930410/computer_programing/blob/main/_Estructuras%20ciclicas%20II.ipynb
01-09	String	https://github.com/Andres930410/computer_programing/blob/main/Estructuras%20de%20datos%20I-Cadenas.ipynb
06-09	Quiz I	N/A
08-09	Exam I	N/A
13-09	Tuples	https://github.com/Andres930410/computer_programing/blob/main/Tuplas.ipynb
15-09	Lists	https://github.com/Andres930410/computer_programing/blob/main/Listas.ipynb

Date	Content	Link
27-09	Arrays & Matriz	https://github.com/Andres930410/computer_programing/blob/main/Arreglos%20y%20Matrices.ipynb
29-09	Dictionary	https://github.com/Andres930410/computer_programing/blob/main/Diccionarios.ipynb
04-10	Quiz 2	N/A
06-10	Exam 2	N/A
11-10	Files	https://github.com/Andres930410/computer_programing/blob/main/Leyendo%20y%20escribiendo%20datos%20en%20un%20archivo.ipynb
18-10	JSON	https://github.com/Andres930410/computer_programing/blob/main/JSON%20en%20python.ipynb
20-10	Error Handling	https://github.com/Andres930410/computer_programing/blob/main/Manejo%20de%20excepciones.ipynb
25-10	Libraries	https://github.com/Andres930410/computer_programing/blob/main/Manejo%20y%20librerias.ipynb
27-10	Functions & modules	https://github.com/Andres930410/computer_programing/blob/main/Funciones%20y%20modulos.ipynb
01-11	Recursive functions	https://github.com/Andres930410/computer_programing/blob/main/Recursi%C3%B3n.ipynb

Date	Content	Link
03-11	Review	N/A
08-11	Review	N/A
10-11	Quiz 3	N/A
15-11	Exam 3	N/A
17-11	Grades	N/A

Methodology

This course provides written material, didactic software, guides for the development of workshops and laboratories (both in class and outside of it) and "basic" exercises of real programming problems are proposed, together with the explanation by teachers and monitors.

Grading

- Exam I -> 25%
- Exam II -> 25%
- Exam III -> 25%
- Quiz -> 25%
- Labs & exercises: 5 points in final grade

Bibliography

Jonatan Gómez, Camilo Cubides, Arles Rodríguez. La Ciencia de la Programación. Universidad Nacional de Colombia 2018.