

INTRODUCTION TO PYTHON LANGUAGE

PROGRAMMING AND INFORMATION SYSTEMS - 1 ° The NO
GPSI TECHNICAL PROFESSIONAL COURSE

*"Education is to the soul what sculpture is to a block of
marble."*

(Addison, Joseph)

Module 01

Introduction to Programming and Algorithms

Goals

From the practical cases that are presented, it is intended to find a computational solution that return the expected result to the user.

The code must be developed in Python, in an IDE of your choice and, after being function, copy and share in the "Exploring Python (Season 1)" channel.

Contents

- [Video Lesson for the Visual Studio IDE Development Environment](#)
- [Reference Tutorials for Learning Python](#)
- [Python tutorial with exercises](#)

Page 2**Activity proposal**

1. Create a Python Program that converts meters to centimeters.
2. Make a Program that asks how much someone earns per hour and the number of hours you worked in the month. Calculate and display your total salary on the console. that month.
3. Create a Program that asks the user for 2 integers and a number real. Calculate and show:
 1. the product of double the first with half of the second.
 2. the sum of the triple of the first and third.
 3. the third to the cube.
4. Build a program that asks for the size of a file for download (in MB) and the speed of an Internet link (in Mbps), calculate and report the time Approximate download of the file using this link (in minutes).
5. Create a program that through the day and month of a date, inform how many days have passed since the beginning of the year. Always consider that the year has 365 days and that a month has 30 days.
6. A t-shirt factory produces small, medium and large sizes each. being sold respectively for 10, 12 and 15 euros. Build a program in the user to provide the quantity of small, medium and large t-shirts referring to a sale, and the machine informs the amount collected.
7. Suppose you have an 8x6 rectangular room. admitting that you want cover the floor with 2x2 tiles, create a program that calculates the number of units you will need.
8. Make a program that reads an integer (assumes up to three digits) and prints the output as follows:
HUNDRED = x
TEN = y
UNIT = z

9. The ESEN bar sells only one type of sandwich, whose filling includes two slices of cheese, a slice of ham and a slice of hamburger. Knowing that each slice of cheese or ham weighs 50 grams, and the slice of hamburger weighs 100 grams, make a program in which the responsible employee provides the amount of sandwiches to make, and the machine informs the amounts (in kilograms) of necessary cheese, ham and meat that you need to buy.

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10. The company Hipotheticus pays €25 per normal hour worked, and €35 per hour extra. Create a program to calculate and print gross salary and net salary of a particular employee. Consider that the net salary is equal to the salary gross deducting 11% for taxes.
11. The Meia-Cola soft drink factory sells its product in three formats: can 350 ml, 600 ml bottle and 2 liter bottle. If a merchant buys a certain amount of each format, build a program to calculate how many liters of soda he bought.
12. Design a program that receives a person's weight, calculate and show:
- a) the new weight if the person gains 15% of the entered weight;
 - b) the new weight if the person loses 20% of the entered weight.
13. The Andromeda galaxy is 2.9 million light years from Earth. one light year equates to $9,459 \times 10^{12}$ kilometers. How many kilometers is the galaxy from Earth?
14. Calculate the number of seconds that exist in a normal year (365 days).
15. Suppose you have a certain amount of empty bottles of capacity 5l, 1.5l, 0.5l and 0.25l. Admit that you have an unlimited number of bottles of each type. given a certain amount of water that you want to keep in bottles, build a program that indicates the minimum number of bottles of each type required. Consider that the amount of water is a multiple of 0.25l and each bottle remained filled with water.

GOOD WORK! YOU ARE ABLE! BUILD YOUR KNOWLEDGE...

The subject teachers,

Andreia Backyard | Carlos Almeida

