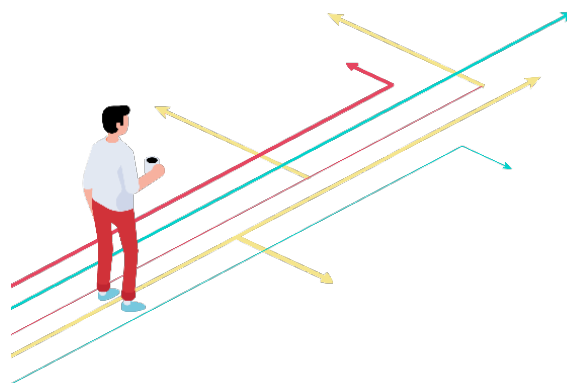


STRUCTURE OF DECISION AND CHOOSE MULTIPLE

PROGRAMMING AND INFORMATION SYSTEMS - 1º THEAT THE GPSI TECHNICAL PROFESSIONAL COURSE



*"I think ninety-nine times and find nothing; I leave
think, I dive into a deep silence – and behold the
truth is revealed to me."
(Albert Einstein)*



Module 02

Execution Control Mechanisms



Introduction

There are cases in which we must decide for an option, through a set of values that a variable can have, resorting to the use of several linked If structures. The chaining of the If conditional decision structures makes it difficult to interpret the algorithm. In this case, we have a composite decision structure or multiple choice decision that will make reading the algorithm easier.

From the practical cases that are presented, the intention is to find a computational solution that returns the expected result to the user.

The code must be developed in Python, in an IDE of your choice and, after it is working, copy and share it in the "Exploring Python (Season 2)" channel.



Useful links

- Python Tutorial
<https://www.w3schools.com/python/default.asp>
- Python Tutorial for Beginners: Learn Programming Basics
<https://www.quru99.com/python-tutorials.html>
- Python 3: Decision Structures <https://neps.academy/br/blog/python-3:-structures-de-decision>



Activity proposal

- 1 Create a Python program that lets you tell if we have to turn the refrigerator on or off, depending on the temperature entered. If the temperature entered is less than 3 degrees, the message to be entered must be "Switch off the refrigerator".

two Create a Python program that defines whether a particular student passes or fails, depending on the grade entered.

- 3 Write a Python program that displays the value of the chosen menu on the screen.

Example:

1. Add
2. Subtract
3. Multiply
4. Divide

- 4 Create a program that checks which class a player belongs to by their age.

Example:

- <10 - children
- > 10 and < 14 - initiates
- >14 and <18 – juniors
- > 18 – seniors

- 5 Create a program that defines the type of person (Child, Teen, Adult) depending on the age entered.
- 6 Develop a program that depending on the month chosen, the program shows the number of days in that month.
- 7 Build a program that reads 2 integer values, and:
 - If they are equal, the program should show the result of the sum of the 2 values
 - If they are not the same, the program should show the result of multiplying the two.



8 Days are considered to have four parts: dawn, morning, afternoon, night.

- dawn - from 5 to 7;
- morning - from 8 am to 12 pm;
- afternoon - from 1pm to 7pm;
- night - from 20 to 4 (the following day).

Determine the time of day knowing the time.

9. Portugal is a peripheral country located in the corner of Europe. But are we that far from the main European capitals? The challenge of this exercise is to discover how far we are from other countries. As an input value, the program must receive the name of a European capital and return the distance in Kms from the position where we are. The program must have an answer for 5 capitals. If the user chooses a capital not considered, the program must give the following warning message "We don't have data about this city"

10. What if I had a foreign girlfriend? If you are over 14 years old, there is a strong possibility that you have already said "Thank you". But if the recipient of these words were of another nationality? How about creating a small electronic dictionary that helps romantics in this country who need to communicate their intentions to peers of other nationalities?

The objective of this exercise is to prepare a program that presents in the chosen language the expression "Thank you" translated into that language.

And what languages should you consider? As many as you like, but never less than 4. Tip: Use search engine translation tools (eg Google.)

11. Babies are a source of expiration and worry. As they are helpless beings who reach their parents' laps without an instruction manual, parents need guides that allow them to understand their children's developmental cycles. In this exercise, your mission is to prepare a pediatric simulator that, in the first 6 months of life, indicates the stage of development in which the baby is. Thus, by entering the baby's age in months, the program should indicate the main activities that the baby should carry out. The program only works for newborns, so if they are aged over 6 months it should give the following error message ("Invalid age for this simulator. This is no longer a newborn baby").



12. The Navarros are part of the CPLP. And you ask what is CPLP?

CPLP (Community of Portuguese Language Countries) is an organization where, as its name indicates, Portuguese speaking countries come together. In this linguistic conclave, the countries involved tend to develop control mechanisms to protect our language. In this context, the direction intends to implement a customs tax that taxes literary products according to their origin. So,

- Books by Portuguese authors do not pay any fees;
- Books coming from Mozambique, Angola, Cape Verde and Brazil, as members of the CPLP pay only 5% of the fee that is added to the sale price;
- All others pay a 10% tax in addition to the sale price.

Your mission, if you accept it, will be to develop a program that, reading the price and origin of the book (country of the author), will show the user the final price to pay.

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

The subject teachers, Andreia
Backyard | Carlos Almeida