DECISION AND MULTIPLE CHOICE STRUCTURE

PROGRAMMING AND INFORMATION SYSTEMS - 1 º The NO

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 chained If structures. The chain of
If conditional decision structures bring difficulty in interpreting the algorithm. In this case,
we have a composite decision structure or multiple choice decision that will make reading
of the easiest algorithm.

From the practical cases that are presented, it is intended 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 being
function, copy and share in the "Exploring Python (Season 2)" channel.

Useful links

- Python Tutorial

▪ Python Tutorial for Beginners: Learn Programming Basics

https://www.guru99.com/python-tutorials.html

▪ Python 3: Decision Structures

https://neps.academy/br/blog/python-3:-structures-de-decision

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Activity proposal

1 Write a Python program that lets you tell if we have to turn the fridge on or off,

depending on the temperature entered. If the temperature entered is less than 3 degrees,

the message to be entered should read "Switch off refrigerator".

2 Write a Python program that defines whether a particular student passes or fails,

depending on the note 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 - initiated

>14 and <18 – juniors

>18 – seniors

5 Design a program that defines the type of person (Child, Teen, Adult) depending on

the age entered.

6 Develop a program that depending on the chosen month the program shows the number of

days of that month.

7 Build a program that reads 2 integer values, and:

- If they are equal, the program must show the result of the sum of the 2 values
- If they are not the same, the program must show the result of multiplying the two.

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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 8 pm to 4 pm (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 really so
   away from the main European capitals? The challenge of this exercise is to find the distance that
   we meet from other countries. As 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 should give the following warning message "We have no data about
   this city"

10. What if I had a foreign girlfriend? If you are over 14, you have a strong chance of
    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 purpose 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. Because they are helpless beings that reach the
    of their parents without an instruction manual, parents need guides that

allow you to understand your 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. So by entering the baby's age

in months, the program must indicate the main activities that it must carry out. The program

it only works for newborns so in case they are used over 6

months should give the following error message ("Invalid age for this simulator. This one no longer

is a newborn baby").

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

CPLP (Community of Portuguese Language Countries) is an organization where, like the

The name itself indicates, the Portuguese-speaking countries come together. In this linguistic conclave

the countries involved tend to develop control mechanisms to protect our

tongue. In this context, the management intends to implement a customs tax that tax the

literary products depending on their origin. Thus,

- Books by Portuguese authors do not pay any fees;
- Books from Mozambique, Angola, Cape Verde and Brazil, as they are members

from 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 reads the price and origin of the

book (author's country) indicate the final price to be paid to the user.

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

The subject teachers,

Andreia Backyard | Carlos Almeida

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