CHAPTER 4 - VARIABLES AND DATA TYPES

4.1

A variable is a noun that represents a value in the computer’s memory

To create a variable and make it reference specific values, an assignment statement is used.

The assignment of a value to a new variable is also called initialization.

The equals sign is called assignment operator

In an assignment statement the variable receiving the assignment must be on the left of the assignment operator

By convention variable names are made up of lower case letters only and don’t use accented characters

4.2

Variables must be assigned short significant names

The following rules must be followed for variable names:

- must begin with and underscore or letter

-must not contain spaces or non-standard characters

-must not be Python keywords

If a variable is given the name of a function, the function loses its properties. To make the function work again Shell must be restarted.

4.3

When a variable is assigned a value, it references such value until another value is assigned. The old value is removed from the computer’s memory through a process called garbage collection.

Update is a type of reassignment in which the new value of a variable depends on its old value.

Python allows unpacking (=assigning variables multiple values), which allows initializing or reassigning more than one variable with a single code line.

4.4

Typing is the management of data depending on its type.

Data typing can be either:

- Static (=The programmer must declare the variable type before using it)

- Dynamic (=The interpreter/compiler decides the variable type depending on its value)

(Python’s elementary data types are at page 59 - volume 1)

To identify the data type of a value, use the type function, with the value as its argument

There is no currency or accounting format

Additional data types are: lists, tuples, sets and dictionaries.

4.5

Operations between data types:

- both operands are int —> result is int

- both operands are float —> result is float

- operands are both int and float (mixed type expression) —> result is float

4.6

To convert the data type of a variable use:

- int —> converts to integer (it truncates floats)

- float —> converts to float point numbers

- str —> converts to a string

4.7

The input function allows the user to enter data from the keyboard.

It reads a piece of data entered by the keyboard and returns a string (even if it’s numerical)

It accepts one argument only called prompt

It is a string displayed on the screen before an input by the user