Name: Ramila Jane B. Abobo Assignment - Variable declaration

Section: CS3C

Variable declaration

● What is variable?

* It's a designated memory address for storing values. A variable in a Python program provides the computer with data to be processed. The data value is being stored within the program itself. A variable's name serves as a means of identification and reference for it within the code. The information stored in a variable is its value. Numerous data kinds, such as Boolean values, integers, floating-point numbers, lists, and more, is included in this data. Example of this is x = “orange” or y = 5.

● Fundamentals of Python Programming

* Python uses indentation—rather than braces—to describe code sections, making its syntax clear and readable. For the code to run correctly, indentation is essential.
* Variables are used to store data. Numerous data types, including strings, Booleans, floats, and integers, are pre-built in Python.
* You can take user input and display output using input() and print() functions.
* Use if, else if, and else for decision-making or any conditional statements depends on the program.
* Use for and while loops for repetitive tasks.

● Rules in Declaring a Variable in Python

* There cannot be a number in the first character.
* Variable names cannot contain blank spaces.
* An underscore character or a letter must appear at the beginning of a variable name.
* Reassigning a variable to a different value or data type is possible in Python.

● Keywords in Python

* class - To define a class
* and - A logical operator (&&)
* continue - To continue to the next iteration of a loop
* else - Used in conditional statements
* False - Boolean value, result of comparison operations
* True - Boolean value, result of comparison operations
* While - To create a while loop

● Rules for local and global variables in Python

* Local Variable
* The local scope of a variable, it can be accessed only in the function where it is defined. No access for a variable with local scope outside the function.
* An UnboundLocalError will occur if you try to access a local variable outside of its defining function.
* Global Variable
* A variable is accessible from anywhere i.e. inside and even outside the function.
* The global keyword in functions allows access to and modification of global variables. When a global variable is changed inside a function without this keyword, a new local variable with the same name is created.

● Operators

* Arithmetic Operators:
* + (Addition): Adds two operands.
* - (Subtraction): Subtracts the right operand from the left operand.
* \* (Multiplication): Multiplies two operands.
* / (Division): Divides the left operand by the right operand.
* % (Modulus): Returns the remainder of the division.
* // (Floor Division): Returns the quotient of the division, discarding the remainder.
* \*\* (Exponentiation): Raises the left operand to the power of the right operand.
* Comparison Operators:
* == (Equal to): True if the values of the operands are equal.
* != (Not equal to): True if the values of the operands are not equal.
* < (Less than): True if the left operand is less than the right operand.
* > (Greater than): True if the left operand is greater than the right operand.
* <= (Less than or equal to): True if the left operand is less than or equal to the right operand.
* >= (Greater than or equal to): True if the left operand is greater than or equal to the right operand.
* Logical Operators:
* and: True if both operands are true.
* or: True if at least one operand is true.
* not: True if the operand is false (negation).
* Assignment Operators:
* = (Assignment): Assigns the value on the right to the variable on the left.
* +=, -=, \*=, /=, %=: Perform the corresponding operation and then assign the result to the variable.
* //=, \*\*=: Perform the corresponding operation and then assign the result to the variable.