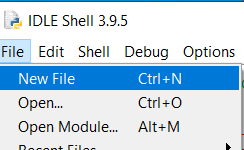
ICTPRG302 - Apply introductory programming techniques –

Session 2 Worksheet

Expression and Variables, Statements and Operators

Start IDLE from the Python 3.x package. Chose New from the File menu as illustrated below.



It is time to start writing your code. Type and run the following code.

var1 = 2 # this is assignment statement

print(var1) # print statement

var1 = var1 + 2 # assignment with expression

print(var1) # another print statement

To run a file in IDLE, simply press the **F5** key on your keyboard. Note that IDLE will remind you to save your file whenever you attempt to execute an unsaved file. Save it as “session2.py”.

The code sends the following lines to the console

A picture containing diagram

Description automatically generated

TASKS

* **Task 1**: write the following code

str1 = "Hello World!"

print(str1) # Prints complete content of string variable

print(str1[0]) # Prints first character of the string print

print(str1[-1]) # Prints the last character of the string

print(str1[1:5]) # Prints characters starting from 2nd to 5th

print(str1[2:]) # Prints string starting from 3rd character

print(str1[-3:]) #prints the last three characters

print(str1[:]) #prints all characters

print(str1[::2]) #prints every second characters

print(str1 \* 2) # Prints string variable contents two times

print(str1 + " From Python.") # Prints concatenated string

The output of the code will be the following.

Graphical user interface, text, application

Description automatically generated

* **Task 2**: Complete the code below:

#swap the values of a and b

a = 5

b = 10

temp = 0

#use the third variable to temporary store the old values

temp = ??? # **write your code instead of ???**

a = ??? # **write your code instead of ???**

b = ??? # **write your code instead of ???**

print("a and b values are: ", a, b)

The output of the code will be the following.

Graphical user interface

Description automatically generated

Tip: **temp = a**

* **Task 3**: Complete the code below:

#Complete the code below.

pi = 3.14159 # approximate value

diameter = 4

# Create a variable called 'radius' equal to half the diameter

radius = ??? # **write your code instead of ???**

# using the formula for the area of a circle:

#pi times the radius squared

area = pi \* ??? # **write your code instead of ???**

print("Area is: ", area)

The output of the code will be the following.

A picture containing icon

Description automatically generated

* **Task 4**: Pseudocode is a plain language description of an algorithm that helps programmers develop algorithms.
* This is not a program, its **plain English**
* Implement the following example written in pseudocode

SET num1 to 10

SET num2 to 20

WRITE “num1 is: “

WRITE num1

WRITE “num2 is: “

WRITE num2

The output of the code will be the following.

A picture containing table

Description automatically generated

Tip: use the end parameter in the print function, **end=''.**