Computing Fundamentals using Python

SUBJECT CODE : UQ25CA151A

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Computer Applications

Python REPL

REPL is an acronym for Read, Evaluate, Print, and Loop. Developers use REPL Python to communicate with the Python Interpreter.

What is Python REPL?

- Python REPL is used by coders and developers to communicate with the computer in Python.
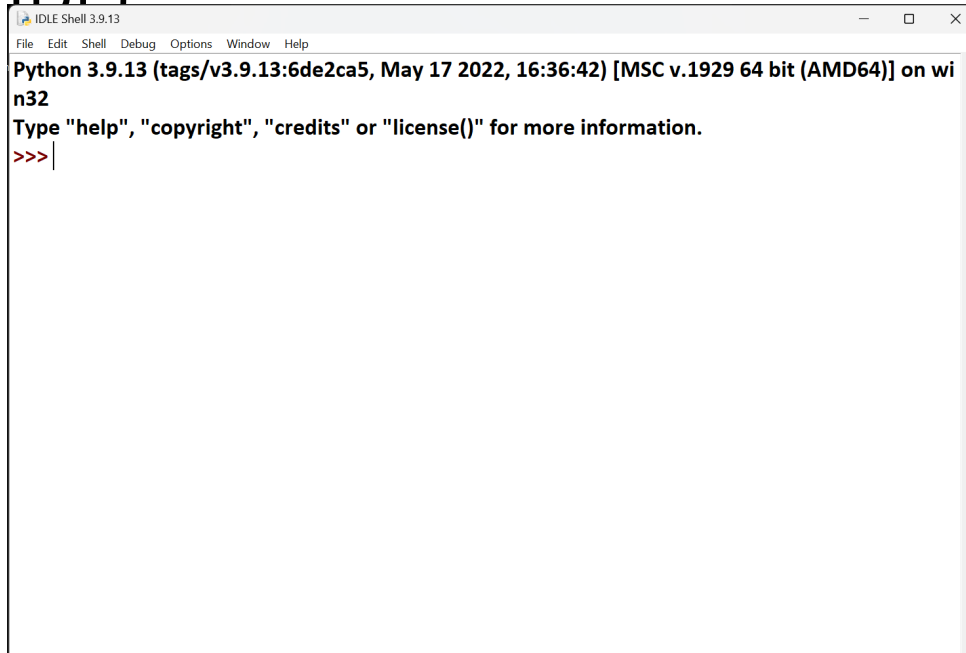- Python offers an interactive REPL that you can use to communicate with your computer.

The computer does these four tasks to make it work:

- **Read** your Python commands.
- **Evaluate** your code to work out what the input means.
- **Print** the results to see the computer's response.
- **Loop** back to step 1 to keep communicating.

Python REPL

Python shell = Python REPL.

When we use **IDLE**, **Thonny**, or the built-in console in **PyCharm/VS Code**, we are basically working with a Python REPL (just inside an IDE)

Python REPL

Difference between Python REPL (Interactive Shell) and Python Script

- Python REPL (Interactive Shell / Python Shell)Starts when we type python (or python3) in terminal,
         or
- open IDLE/Thonny.Prompt looks like this:
  >>>

  >>> 2 + 3
  5
  >>> print("Hello")
  Hello

Python REPL

Difference between Python REPL (Interactive Shell) and Python Script

Python Script (.py file)
- You write code in a file with extension .py
- Run the file
- Executes the whole program at once.
- Good for larger programs that need to be saved and reused.

Example:

New File Name it myfile.py

a = 10

b = 20

print(a + b)

Run the File

REPL is for quick testing, and scripts are for building real programs.

Python REPL

Multiple Choice Questions

What does REPL stand for?
a) Read–Execute–Print–Loop
b) Run–Eval–Print–Loop
c) Read–Eval–Print–Loop
d) Read–Edit–Program–Loop

Which of the following is NOT true about REPL?
a) It allows interactive execution of Python code
b) It immediately shows results
c) It is the same as writing a .py script and running it
d) It can be started by typing python in terminal

Python REPL

Multiple Choice Questions

When you type 2 + 3 in REPL, what happens first?
a) Python prints the result
b) Python reads the input
c) Python loops back
d) Python evaluates the output

Why does REPL print results for 2 + 3, but not when we type x = 5?

- Expressions = produce a value, so REPL prints it.
- Statements (like assignment) = do not produce an immediate result

Python REPL

Write an algorithm and draw flowchart for the given problem.

A school wants to maintain basic information about its students such as Name, Age, Roll Number, and Marks in 3 subjects.

1. Accept the details of a student using keyboard input.
2. Store this information using appropriate Python data types and variables.
3. Calculate:
   - Total marks
   - Average marks
   - Grade (simple grading logic)
4. Display the student information in a clear format.

Python REPL

A grocery store needs a simple program to prepare bills for customers. The program should:

1. Accept details of 3 grocery items: item name, quantity, and price per unit.
2. Store this information using suitable Python data types (variables, lists, or dictionaries).
3. Calculate:
    *   Total price for each item (quantity × price)
    *   Final bill amount (sum of all items)
    *   Apply a 5% discount if the bill is above 500.
4. Display the bill neatly to the user.

THANK YOU

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