9. Modules

Theory:

• Introduction to Python modules and importing modules.

• Standard library modules: math, random.

• Creating custom modules.

**Introduction to Python Modules and Importing Modules**

* A **module** in Python is a file containing Python definitions, functions, and variables. Modules allow you to organize code logically and promote reusability.
* To use a module, it must be **imported** into the current program using the import statement. This enables access to all functions and variables defined within that module.

**Standard Library Modules: math, random**

* **math module**: A standard library module that provides mathematical functions like trigonometric functions, logarithmic functions, and constants such as pi.
* **random module**: A standard library module that generates random numbers. It includes functions for generating random integers, selecting random elements from a sequence, and shuffling data.

**Creating Custom Modules**

* A **custom module** is one that you create to organize your functions, classes, or variables into separate files. These custom modules can be reused in multiple programs.
* By creating custom modules, you can make your code more modular and easier to maintain.