MODULE 1: FUNDAMENTALS OF CODING AND ALGORITHMS

Module Learning Outcome

1. Understanding programming concepts
2. Understanding of data structures and algorithms
3. Possess analytical skills for algorithm design and complexity
4. Understanding memory transfer learning.

Session 1: Programming Concepts

Programming language basics based on python

What is python ?

- Python is the one of the most popular computer programming language in the world. It was first released in 1990s and now used to build millions of apps, game and website

- Python is the dynamic typed programming language where variable data type are determined during run time.

Why Python ?

- Easy to read and write
- Works everywhere
- Strong support for algorithms and data structures
- Educational tools and platforms
- Integration with other technologies

Python Installation

- Download python from official website(python.org) and follow the installation instruction for your operating system
- Verified the installation by write this comand in terminal

  python –version
  pip –version
- Pip is the python package installer which used to install all python dependency
- You can also use online platform ie Jupyter notebook or google colab to write python code

Activity

Pause the video, download python and make installation in your computer.

PAUSE 5 mins

IDE for python

An integrated development environment (IDE) - is a software application that helps programmers develop software code efficiently.

It increases developer productivity by combining capabilities such as software editing, building, testing, and packaging in an easy-to-use application.

The best IDE for Python depends on your specific needs and preferences. Popular choices include: IDLE, Spyder, PyCharm, Visual Studio, Atom etc.

Also you can use command to write python code.

Python Libraries

Libraries in Python are collections of pre-written code that can be imported and used in your programs to avoid writing code from scratch. They provide reusable functions, classes, and tools for a wide range of purposes.

Types of Libraries

Standard Library: Comes pre-installed with Python and covers basic functionalities like file handling, math operations, date/time manipulation, etc.

Third-Party Libraries: These are external libraries created by the community and available for installation via package managers like pip.

How to Use Libraries

To use a library in Python, you typically import it using the 'import' statement.

Example:

```
#math: For mathematical functions (standard library)
import math
print(math.sqrt(16))  # Output: 4.0
```

- This marks the end of this lesson. Take your time to select and install any IDE which you can use to write python code.
- See you in the next lesson on the continuation of Programming Language Basics based on Python.

THANK YOU