

Date - 09/09/2025

## Task - 1

① What are the different features of python programming.

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- ① General Purpose - python isn't limited to a single application. It is used for web development, data science, AI, etc.
- ② High-level - This language is designed to be easy for humans to read, write and understand.
- ③ Object oriented - python supports the principles of object oriented programming like abstraction, encapsulation, inheritance, polymorphism.
- ④ Interpreted - Python code is executed line by line by an interpreter.
- ⑤ User friendly - simple syntax, clean syntax,
- ⑥ Open source - It is freely available to download, use and distribute, so which has a large active community and a rich ecosystem of libraries.
- ⑦ Dynamically typed - no need to specify variable data type. python automatically find the based on the value we assign. e.g. `x=10` or `name="python"`.

② What is the difference between compiler and Interpreter.

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compiler

Interpreter

① A compiler takes the entire program in one go

① An Interpreter takes a single line of code at a time.

② The compiler generates an intermediate machine code.

② The interpreter never produces any intermediate machine code.

③ The compiler is best suited for the production env.

③ An interpreter is best suited for a software development environment.

④ The compiler is used by programming languages such as C, C++, C#, Scala, Java.

④ An Interpreter is used by programming languages such as Python, PHP, Perl, Ruby.

③ difference between high level & low level programming languages.

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High level programming language -

① Human readable and easier to understand and use.

② Portable

③ comparatively lower execution speed.

④ Uses syntax and semantics.

⑤ e.g. Java, Python, C++.



Low level programming language -

- ① Easy to understand for machine, but less human-readable.
- ② Not Portable.
- ③ Higher execution speed.
- ④ Uses binary code ~~and~~
- ⑤ e.g. Assembly language, Machine Language.

④ What are the different steps to Install python.

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- ① Navigate<sup>to</sup> python official website.
  - ② click the download button which is stable & compatible for OS.
  - ③ After download open the installer file.
  - ④ check the required box.
  - ⑤ follow onscreen prompt to complete Installation.
  - ⑥ verify the installation using cmd type `python --version`.

⑤ What is IDE, what are different IDEs used for python.

- An Integrated Development Environment is a software application that provides a comprehensive environment for programmers to write, edit, debug and run code. IDEs typically include a source code editor, build automation tool and a debugger.



IDEs for Python -

① VS code - A highly popular, lightweight & customizable code editor with python extensions.

② Pycharm - A dedicated Python IDE known ~~as~~ for excellent debugging tools and a wide range of features.

③ Jupyter notebooks & google colab -

⑥ difference between scripting & programming languages. Python is scripting or programming language.

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① A programming language is typically used to create standalone, full-featured software applications e.g. (desktop app or video game). These languages are often compiled into machine code for faster execution.

② A scripting language is designed to automate tasks or control other programs (e.g. a script to automate file backups or manage a website). These are usually interpreted, running line by line.

Python is considered both a programming & a scripting language. It can be used to write short scripts for task automation and also to build large, complex software applications.

⑦ Explain history of python.

→ Python was created by Guido van Rossum. He started working on it as a hobby project during the Christmas holidays of 1989. The first version was released in Feb 1991. His goal was to develop a simple, readable language that could bridge the gap between shell scripting and languages like C. The language was named after the popular BBC comedy show, "Monty Python's Flying Circus".