1. What is Python and why is it called an interpreted language?

Python is a programming language used to write software. It's called *interpreted* because you don't need to compile it before running — it runs line by line, directly through something called an interpreter.

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2. What are the key features of Python that make it popular for beginners and professionals?

- It's easy to read and write
- You don’t have to worry about declaring data types
- It works on different platforms (Windows, Mac, Linux, etc.)
- Big community and lots of free libraries
- You can do web dev, data science, automation, etc.
- Beginners like it because it’s simple
- Pros like it because it’s powerful and flexible

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3. What is the difference between Python 2 and Python 3?

Python 2 is the older version, and Python 3 is the newer one. Python 3 fixed a lot of issues in Python 2 and is the one everyone uses now.
For example, in Python 2 you write print "Hello" but in Python 3 it's print("Hello"). Python 2 is not supported anymore.

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4. What are Python’s applications in real-world projects?

You can use Python for all kinds of stuff like:

- Making websites (Django, Flask)
- Data science and machine learning
- Writing scripts to automate tasks
- Building desktop apps
- Hacking tools and cybersecurity
- IoT (smart devices)
- AI and robotics
  It’s used everywhere — from Google to NASA.

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5. What is PEP 8 and why is it important in Python programming?

PEP 8 is just a guide that tells you how to write clean and neat Python code.
It’s important because it helps everyone write code in the same style, so it's easier to read and work on together in teams.

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6. Who developed Python and in which year was it released?

Python was made by a guy named Guido van Rossum, and it came out in 1991.
He wanted a language that’s simple and easy to read.

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7. What do you mean by “dynamically typed” in Python?

Dynamically typed means you don’t need to say what type a variable is.
Like, you can just write x = 5 and Python knows it's a number.
Then later, you can do x = "hello" and now it's a string — Python figures it out as you go.

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8. What is the difference between a compiler and an interpreter, and which does Python use?

A compiler turns your whole code into machine language at once, and then runs it.
An interpreter runs the code line by line, checking each part as it goes.

Python uses an interpreter — that’s why you can run Python scripts without compiling first.

Class room notes:

Python programming feature

1. simple syntax

2. indent

3. open source

4. libraries

5. support all kind of development

6. less memory

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features of python

1. simple syntax/easy to learn

2. libraries

3. open source

4. platform independent

5. less memory

6. execute faster then some programming language

applications of python

1. web development

2. mobile app development

3. machine learning/deep learning

4. AI

5. cyber security

6. graphics

7. IOT

8. Automation

9. desktop app development