

Technical Interview Questions & Simple Answers

Programming / Python / API

Q: Can you explain how you've used Python in your projects?

A: I've used Python mainly for data-related tasks and building small apps. For example, I created an intern attendance system using Python with MySQL as the backend. I also used Python in my final year project for age and gender detection using deep learning.

Q: What is the difference between `pandas` and `numpy`?

A: `numpy` is used for handling numerical arrays and fast calculations. `pandas` is better for working with tables and data analysis because it has features like DataFrames which are easier to read and manipulate.

Q: What is SQLAlchemy and why would you use it over raw SQL?

A: SQLAlchemy is a Python library that helps you interact with databases using Python code instead of writing raw SQL. It makes the code cleaner and easier to maintain, especially in bigger projects.

Q: How do you handle API requests in Python?

A: I use the `requests` library to send GET or POST requests. It's simple to use and lets me connect with other systems or web services easily.

Database

Q: What's the difference between MySQL and PostgreSQL?

A: Both are relational databases, but PostgreSQL supports more advanced features. MySQL is simpler and easier to start with, and that's what I've mostly used in my projects.

Q: Can you explain a JOIN and when you've used one?

A: A JOIN is used to get data from two or more tables based on a related column. For example, in my attendance system, I joined the intern table with the attendance table to show names with their status.

Q: Have you designed any database schema? What was the purpose?

A: Yes, I designed a simple schema for an intern management system. It had tables for users, attendance, and login sessions. The purpose was to keep the data organized and linked properly.

Web Development & Responsive Design

Q: Have you built any full-stack projects? Can you walk us through one?

A: Yes, I built a web-based resume and a simple intern dashboard. I used HTML/CSS for the frontend, Python Flask for the backend, and MySQL for the database. I hosted the resume site on AWS.

Q: How do you make sure a website is mobile responsive?

A: I use CSS media queries and frameworks like Bootstrap. I also test it on different screen sizes to make sure it looks good on mobile and desktop.

Q: What frontend and backend technologies are you most comfortable with?

A: I'm most comfortable with HTML, CSS, and a bit of JavaScript for frontend. For backend, I've used Python Flask and recently started exploring ASP.NET Core.

AI/ML

Q: Have you used TensorFlow, PyTorch, or Keras? What did you build with them?

A: I've used Keras with TensorFlow backend in my final year project. I built a deep learning model to detect age and gender from images. Keras made it easy to build and train the model.

Q: What is anomaly detection and where can it be used?

A: Anomaly detection means finding unusual patterns in data. It can be used in things like fraud detection or system monitoring to catch errors early.

Q: Do you understand how to work with time-series data? Explain briefly.

A: A bit. Time-series data is data collected over time. You can use it to find trends or predict future values. I've read about it but haven't used it deeply in a project yet.

System & Networking

Q: How do you manage files and user permissions in Linux/Windows?

A: In Linux, I use commands like `ls -l`, `chmod`, and `chown` to manage permissions. In Windows, I use file properties or `icacls` to do similar things.

Q: Have you ever troubleshooted a network issue? What was the problem and how did you solve it?

A: Yes, once my local server wasn't accessible. I checked the port, made sure the firewall allowed it, and verified the app was running. Restarting the app and checking the config fixed it.