TalentScout Al Hiring Assistant



Step 2: Technical Interview Questions



Q1. 1. How does the Python interpreter work? Explain the process of bytecode execution and how it compiles scripts into bytecode.

Your Answer for Q1

Execution: The Python Virtual Machine (PVM) executes this bytecode line by line.

Python is interpreted but not in the traditional sense—source code is compiled into bytecode and then interpreted by the PVM. The compiled bytecode (.pyc files) is stored in __pycache__ for faster execution next time.

Q2. 2. What are the differences between mutable and immutable objects in Python? Provide a code example to demonstrate each.

Your Answer for Q2

```
print(id(lst))
lst.append(4)
print(id(lst)) # same memory address
```

Q3. 3. Discuss the concept of "duck typing" in Python. Give a scenario where duck typing is advantageous and one where it may fall short.

Your Answer for Q3

```
quack(Duck())
quack(Person()) # Works without inheritance
```

React (3 questions)
Q1. 1. Explain the difference between a component and a fragment in React. When would you use each of them in your component architecture?
Your Answer for Q1

```
world
</>
    );
}
```

Q2. 2. Discuss the concept of state management in React. How does the useState hook work? Provide a code example demonstrating proper state management using hooks.

Your Answer for Q2

Type your answer here...

Q3. 3. What is the difference between a callback function and an arrow function in React? When would you use each of them?

Your Answer for Q3

```
function handleClickOld() {
  console.log("Traditional function");
}
```

• AWS (3 questions)

Q1. 1. How does AWS Lambda differ from traditional hosting? Discuss its serverless architecture and provide examples of common use cases.

Your Answer for Q1

Type your answer here...

Q2. 2. Describe the core components of Amazon S3 (Simple Storage Service). How do you organize files and folders, and manage security and access controls in S3?

Your Answer for Q2

Example:

my-bucket/photos/2025/image.jpg

Control access via IAM and Bucket Policies.

Q3. 3. Explain the concept of AWS Identity and Access Management (IAM). How would you create and manage user roles and policies in IAM for effective security management?

Your Answer for Q3

```
"Action": "s3:ListBucket",
"Resource": "arn:aws:s3:::example-bucket"
}
```

Docker (4 questions)

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Q1. 1. How does Docker differ from virtualization? Explain the concept of "containerization."

Your Answer for Q1

Docker: Shares host OS kernel; lightweight containers.

Containerization: Packages app + dependencies into isolated units, ensuring consistency across environments.

Q2. 2. Discuss the four types of Docker objects and their roles (e.g., container, image, repository, and daemon).

Your Answer for Q2

Repository: Stores images (e.g., Docker Hub).

Daemon: Background service managing Docker containers.

Q3. 3. What is Dockerfile? Provide examples of common instructions you would include in a Dockerfile to customize an image.

Your Answer for Q3

WORKDIR /app

COPY . .

RUN pip install -r requirements.txt

CMD ["python", "app.py"]

Q4. These questions should help assess the candidate's knowledge and experience with the respective technologies. Let me know if you would like me to refine or expand any of these questions or add additional technologies to the list.

Your Answer for Q4

Type your answer here...

