

Raketech Senior Developer Interview Questions and Tasks

Choose to answer **ONLY 3** questions

Q#1: Address Validation

Imagine you have a data set of 200,000 records that contains addresses from 150 countries all around the world and your task is to verify them. The data is stored in 3 fields – **Address Line, City, ZIP Code**. You also have available an address verification component that will validate the addresses for each country, but the data set does not include the country code. Your task is to design the logic that will process the data and find the country for each record, so they can be run through the address validation component. Think of the most efficient way to achieve this.

Hint: Running all the 150-address verification component against each record is not considered efficient. Your answer should only explain possible approaches and solutions. We are not looking for code examples.

Q#2: Database Design

Imagine you are asked to design a simple database for an airport. You should accommodate for:

- ☐ Passengers, their personal and their booking information
- ☐ Airplanes, their cargo and their destinations
- ☐ All available destinations and their distances

Please create or sketch the relational model of such a database structure, including the relationships and cardinalities. The model should have at least 5 entities.

Write SQL queries for the designed database which will return:

- ☐ All people on the same flight
- ☐ All planes on the same destination
- ☐ If the sum of all cargoes weight on the plane is under a threshold

Hint: You may design your model online at: <https://dbdiagram.io>

Q#3: Algorithm

Please write (in JavaScript) a program/algorithm, that takes a number on the input and expresses all the different ways the input can be represented as the sum of 1, 3 and 4 simultaneously. Please specify which programming language you have used.

Example: User Input: 3

There are 2 different ways

1+1+1

3

Q#4: Explain the concept of Inheritance in OOP to a 5 year old.