Amazon Software Engineer Interview Questions, Process, and Prep Tips

We know you know, without a doubt, how hard cracking the Amazon software engineer interview is going to be. But with the right questions list, strategy, and guidance, you can get through. We plan on providing you with all these things to help you crack Amazon Senior SDE interview questions.

Amazon attracts strong leaders and some of the finest talents in the tech world. The demand growth for different types of **software engineers** since 2019 has been anything from 5% to an unbelievable 1400% in the international job market. While full-stack engineers occupy the bottom end of this spectrum, the top end is filled with augmented reality (AR) and virtual reality (VR) engineers.

If you are a software engineer or are aspiring to be one, you have an immense opportunity at the top end of the spectrum mentioned above. You just need to be on top of all the Amazon Senior SDE interview questions and we're here to help you with that.

Before applying for that dream job at Amazon, there are a few things to know about the interview process. In this article, we'll cover the following:

- Timeline and difficulty level of Amazon SE interview process
- What are the different levels of software engineers at Amazon?
- Amazon software engineer interview rounds
- Amazon software engineer interview questions
- Skills required to crack Amazon software engineer interviews
- How to prepare for the Amazon software engineer interview?
- FAQs on Amazon Software Engineer Interview Questions

Timeline and Difficulty Level of Amazon Software Engineer Interview

To ace the Amazon Senior SDE interview questions or the ones for software engineers, you need to know the exact process and timeline for applying successfully and getting selected. This process has been outlined below:

1. Have your resume, cover letter, and referrals (if any) prepared and compiled in a professional manner following all the industry norms.
2. After submitting these, you will have to wait to receive a call or email from an Amazon HR executive, who will tell you about Amazon's 4-stage selection process.
3. The first stage is the online assessment, and it can take approximately two to three weeks to get to this stage.
4. If you make it through the first stage, the next stage is the phone screen, consisting of one to two interview sessions.
5. Following this, you will have to face an on-site interview that consists of four to six sessions.
6. Finally, the results are declared in a debriefing meeting, and you get your offer letter to join Amazon as a software engineer. The second to fourth stages take about two to five weeks to complete.

If all of this sounds daunting, be better prepared by learning more about the Amazon Senior SDE interview questions by reading our article How Hard Is It to Get a Job at Amazon.

What Are the Different Levels of Software Engineers at Amazon?

Like all major tech companies, Amazon also uses a tier-based salary structure for its engineers. Here's a look at the different levels of software engineers working at Amazon.

1. **SDE I:** This position is for freshers and inexperienced programmers. They are usually hired from colleges and fulfill the role of junior engineers.
2. **SDE II:** These engineers are moderately experienced as they can handle tasks with large codebases and are also able to carry out program architectural tasks.
3. **SDE III:** Next up in the hierarchy are the more experienced and senior-level **software engineers**, who have, in the past, led important software projects.
4. **Principal SDE**: These are some of the senior-most programmers hired by Amazon who have published articles and whitepapers to their name and are responsible for guiding and training other SDEs. They have a minimum of 10 to 15 years of experience in their field.
5. **Distinguished Engineer:** These posts are occupied by brilliant SDEs who may even have less work experience but have achieved this mantle simply due to

their brilliance. They are often involved with mentoring other promising SDEs at Amazon.

Amazon Software Engineer Interview Rounds

Take a look at the Amazon SE interview rounds that you'll have to clear to land the job. We've also included the type of Amazon Senior SDE interview questions that will be asked during there rounds:

Online Assessment

One of the most important things that you need to know about the Amazon interview questions is that the online assessments consist of four types of questions, which are:

1. Seven questions on debugging, for which you will get roughly 20 minutes.
2. Two questions on coding, for which you will get roughly 70 minutes.
3. One session of work simulation, for which you will get 2 hours.
4. 24 questions on logical reasoning, for which you will get 35 minutes.

Note that the online assessment stage is applicable are only for interns and fresh graduate software engineers applying to Amazon. These do not include Amazon Senior SDE interview questions.

Phone Screen

During the phone screen stage, you will be interacting with a manager via the Amazon Chime video conferencing software using your phone. For the Amazon phone interview questions, software engineer applicants will be asked a combination of technical and behavioral-based questions for 45 to 60 minutes.

- **Technical Questions:** You can expect to face standard questions or some Amazon Senior SDE interview questions regarding data structures and algorithms and how Amazon uses these. You will usually be given tasks to edit and solve such syntax on an online collaborative editor. Apart from these, you can also expect to face certain software development topics like systems design.

- **Behavioral Questions:** To equip yourself during this round, you will have to have a thorough knowledge of the leadership principles of Amazon.

On-site Interview or Personal Interview (PI):

This is the final and the toughest stage of Amazon's selection process. You can expect to remain on-site at the Amazon office throughout the day to face four to six sessions of PI rounds. Each of these sessions is usually an hour-long, and during these sessions, you will be asked various types of Amazon Senior SDE interview questions or questions based on the position you've applied for.

Coding Questions

The first session of PI will be focused on analyzing your skills in data structures and algorithms. You will need to solve these Amazon software engineer interview questions on a whiteboard.

System Design Questions

The next one or two sessions will be aimed at understanding your level of expertise in system design. The difficulty level of the Amazon system design interview questions depends on your level of experience and qualification.

Behavioral Questions

Amazon Behavioral interview questions will be asked all across these PI sessions, and you will have to answer several such questions focusing on the Amazon leadership principles.

Bar Raiser Round

The name the Bar Raiser comes from the fact that the interviewer conducting the last round has the power to veto your application if you fail to meet the bar. In this round, you'll essentially be assessed on Amazon's Leadership Principles. For applicants interested in the position of an Amazon Senior SDE, the interview questions of this round are considered the most important.

For tips and preparation tactics for the Amazon on-site interview, read our article How to Prepare for Amazon Onsite Interview.

Amazon Software Engineer Interview Questions

Here are some of the questions asked during the software engineer or senior SDE interview at Amazon:

Coding and Algorithm Related Interview Questions Asked at Amazon

These questions are some of the most complex and technical ones asked at Amazon interviews to SEs or Senior SDEs. They require in-depth understanding as well as advanced practical experience to solve. Here are some common Amazon coding interview questions that are asked:

1. Given an integer array arr of size n, find all magic triplets in it. A magic triplet is a group of three numbers whose sum is zero. Note that magic triplets may or may not be made of consecutive numbers in arr. (Click here for solution)
2. Given a variety of coin types defining a currency system, find the minimum number of coins required to express a given amount of money. Assume an infinite supply of coins of every type. (Click here for solution)
3. Given the daily prices of a stock, what's the maximum possible profit one can generate by first buying one share of that stock on a certain day and then selling that share at least one day later? (Click here for solution)
4. Given an integer, check whether it is a palindrome. (Click here for solution)

Read Amazon Coding Interview Questions for more.

Graphs/Trees Related Interview Questions Asked at Amazon

About 39% of all Amazon Senior SDE interview questions or SE interview questions are based on concepts related to graphs and binary trees that involve sub-concepts like nodes. Some of the most frequent questions asked by Amazon related to this subject are:

1. Given: A weighted, undirected, and connected graph of V vertices and E edges
   Task: Write a code to find the sum of weights of the edges of the minimum spanning
2. Given: Adjacency list of a bidirectional graph
   Task: Write a code to return the adjacency list for each vertex
3. Given: A directed graph
   Task: Write a code to perform breadth-first traversal of this graph starting from 0

4. Given: A connected undirected graph
    Task: Write a program to perform depth-first traversal of the graph

Check out the Problems page for more coding questions with solutions.

Arrays/Strings Related Amazon Interview Questions Asked at Amazon

About 26% of all the technical questions asked during Amazon interviews are related to arrays and strings, which are an important basic concept for all software developers and senior SDEs.

1. Given: Two arrays a1[0..n-1] of size n and a2[0..m-1] of size m
    Task: Write a code to check whether a2[] is a subset of a1[] or not
2. Given: A set of N nuts of different sizes and N bolts of different sizes — there is a one-one mapping between nuts and bolts
    Task: Write a code to match the nuts and bolts
3. Given: An array A[] of N positive integers, which can contain integers from 1 to P, where elements can be repeated or can be absent from the array
    Task: Write a code to count the frequency of all elements from 1 to N
4. Given: Two arrays A and B of equal size N
    Task: Find if the given arrays are equal or not

Check out our Learn Page to brush up on your basics.

Dynamic Programming Related Interview Questions Asked at Amazon

About 12% of all the questions asked at Amazon interviews require software engineers to use their skills in stacks and queues. Some of these questions are:

1. Design a stack to push, pop, top, and retrieve the minimum element in constant time.
2. Given: n non-negative integers representing an elevation map. The width of each bar is 1.
    Task: Find out how much water rainwater it can trap.
3. Given: An m x n matrix with the following properties: Integers in each row are sorted in ascending order from left to right, and Integers in each column are

sorted in ascending order from top to bottom.
Task: Write an algorithm that searches for a value in the matrix.

Recursion-Related Amazon Interview Questions Asked at Amazon

Another 12% of all Amazon Senior SDE interview questions or questions for SEs are related to recursions and linked lists. Some of the most frequently asked questions of this type are:

1. Task: Write a code to print a sequence of numbers starting with N, where A[0] = N, without using a loop, in which A[i+1] = A[i] - 5, until A[i] > 0. After that A[i+1] = A[i] + 5. Repeat it until A[i] = N
2. Given: A round table of n persons
   Task: Write a code to find out in how many ways they can shake hands such that no two handshakes cross each other
3. Given: n number of people in a circle and a number k, such that k-1 persons are skipped, and the kth person is eliminated
   Task: Write a code to figure out the safest place in the circle

Geometry-/Math-Related Amazon Interview Questions Asked at Amazon

About 11% of all mathematical questions asked during Amazon interviews are related to algebra and geometrical calculations, concepts, and theories. For example:

1. Given: The first 2 terms A1 and A2 of an arithmetic series
   Task: Find the Nth term of the series
2. Given: The first term and common ratio X and R of a GP series
   Task: Find the nth term of the series
3. Given: Two non-zero integers N and M
   Task: Find the number closest to N and divisible by M. If there are more than one such number, then output the one having a maximum absolute value

System Design Amazon Interview Questions Asked at Amazon

These are higher-level interview questions meant for Amazon Senior SDEs or software engineers who are ready to prove their practical competencies in system design and software development. For example:

1. How would you design a warehouse system for Amazon.com?
2. How would you design Amazon.com so it can handle 10x more traffic than today?
3. How would you design Amazon.com's database (customers, orders, products, etc.)?
4. Design a counters system for online services.
5. Design a game of chess.
6. Design a parking garage.

Read *Amazon System Design Interview Questions* for more.

Behavioral Interview Questions Asked at Amazon

These Amazon behavioral interview questions for Senior SDE or SE are usually asked to most applicants and are based on the leadership principles of Amazon. For example:

1. Tell us about a time when you faced a problem that had multiple solutions. How did you go about the situation?
2. Tell us about a time when you took a calculated risk and failed. What were your learnings from it?
3. Tell us about a time when you had to take the lead in a project. How did you fulfill your role?
4. Tell us about a time when you had to work with an uncooperative colleague. How did you go about it?
5. Tell us about a time when you leveraged massive chunks of data to build a strategy. How did you execute it?

Read *Amazon Behavioral Interview Questions* for more.

Skills Required to Crack the Amazon Software Engineer Interviews

During the Amazon interview process, software engineers or senior SDEs are asked several different types of questions. The key skills required by applicants to successfully crack the behavioral as well as technical interview are:

Technical Skills:

- Problem Solving
- Coding
- Object-Oriented Design
- Data Structures

Behavioral Skills:

- Communication
- Responsibility
- Teamwork
- Time Management
- Innovation
- Social Skills
- Flexibility

In addition to the above skills, all Amazon employees are expected to adhere to the 14 Amazon leadership principles.

How to Prepare for Amazon Software Engineer Interview Questions?

If you're thinking about applying for a software engineer or senior SDE position at Amazon, here are certain things that you'll have to consider, apart from having a splendid resume:

- As mentioned earlier, leadership is of utmost importance to Amazon. It always helps to study Amazon's leadership principles and how they relate to the overarching customer-obsessed business model of the company.
- As is common with most interviews, conducting some nifty background research into your employer is always encouraged and can be an intelligent way of interview prep.
- Amazon's 'Bar Raiser' round pits you against the existing employees of Amazon. To face such Amazon interview questions, software engineer applicants need to develop high-end competencies.
- The Amazon senior SDE interview questions or the ones for software engineers are faced with are highly abrupt, inconsistent, but not incoherent. This means, as

an applicant, you often have no clue as to what pattern of questioning you may face.

Check some more [Amazon SDE Interview Preparation Tips](#) here.

FAQs on Amazon Software Engineer Interview Questions

Q1: What are the eligibility criteria for applying to the post of SDE I, II, or III at Amazon?

A: You will need a bachelor's degree or more in computer science and about two to three years of experience in software development.

Q2: What kind of work experience does Amazon look for when recruiting software engineers?

A: Amazon requires software development applicants to have an excellent track record of developing large-scale, low latency software products and also values in-depth understanding of algorithms, data structures, and databases.

Q3: What other technical competencies are required to apply to Amazon as a software developer?

A: You will need to have knowledge of diverse software like EC2, S3, DynamoDB, Elasticsearch, Lambda, ECR, ECS, Lex, and API Gateways. You will also need to be highly adept at programming languages like Java and Scala.

Q4: Is it always necessary that I need to be a leader to crack the Amazon interviews as a software engineer?

A: No, it is not necessary, but you should have some prior knowledge of the leadership principles practiced at Amazon.

Q5. How can Interview Kickstart help me ace the Amazon software engineer interview?

A: Having trained over 9,000 software engineers, we know what it takes to crack the toughest tech interviews. Since 2014, Interview Kickstart alumni have been landing

lucrative offers from FAANG and Tier-1 tech companies, with an average salary hike of 49%. The highest ever offer received by an IK alum is a whopping $933,000!

IK is the gold standard in tech interview prep. Our programs include a comprehensive curriculum, unmatched teaching methods, FAANG+ instructors, and career coaching to help you nail your next tech interview.

Sign up for our FREE webinar to uplevel your career!