UX·Engineer¬

Interview Prep

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HELLO THERE!

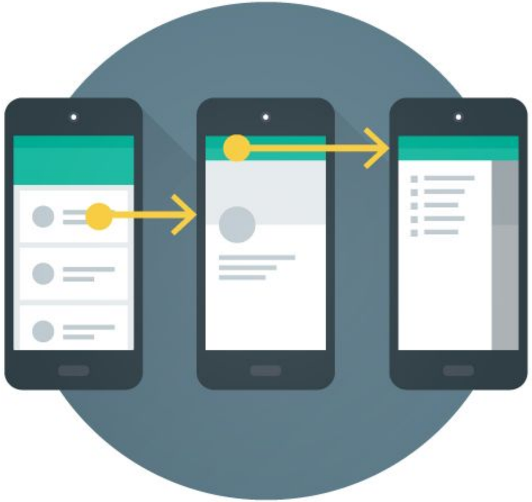
We’re looking forward to learning how you’ll envision the way people experience our products and bring that vision to life in a way that feels inspired, refined, and even magical. Use these slides as your guide to preparing for and interviewing at Google.

We can’t wait to meet you!

WHAT IS UX ENGINEERING AT GOOGLE?

“UX Engineering” (aka UXE) refers to disciplines that focus on development and/or prototyping, where primary attention is on (or in the service of) a product’s front-end, its user interactions, and user experience.

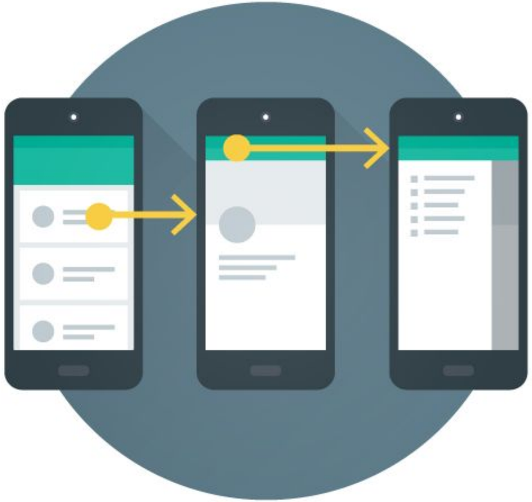
Google believes that it's important to have an area of focus on front-end technology exclusively, whether it be for prototyping new experiences or for rendering complex, pixel perfect UIs. It is a critical part of web and mobile applications, and is evolving rapidly.



UX ENGINEER ROLES

UX Engineer, Front-End

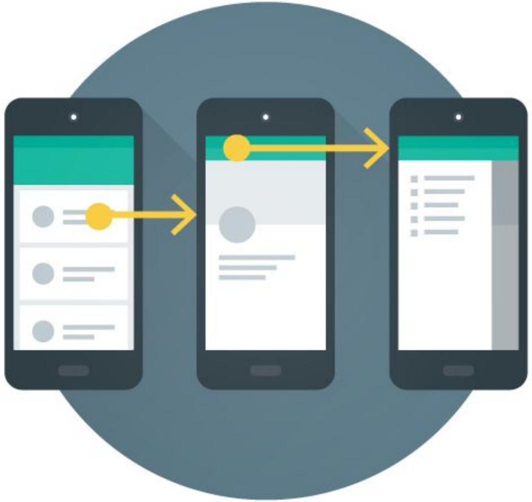
- Engineers are typically working on production code in user-facing products. Usually the front-end work is done based on a designer's specifications/mocks, but there are many cases where developers must exercise their own design judgment.
- Some engineers will be working on internal tools (instead of external-facing apps) with lots of design discretion. Such UX Engineers should have good instincts for design and usability while also writing performant, maintainable code.



UX ENGINEER ROLES

UX Engineer, Design

- Engineers are typically working on prototypes where they are defining both the design/interactions and writing code that powers those interactions; this work is employed by others in the broader UX and Eng worlds to inform product decisions, push the boundaries of technical capabilities, and define strategy.

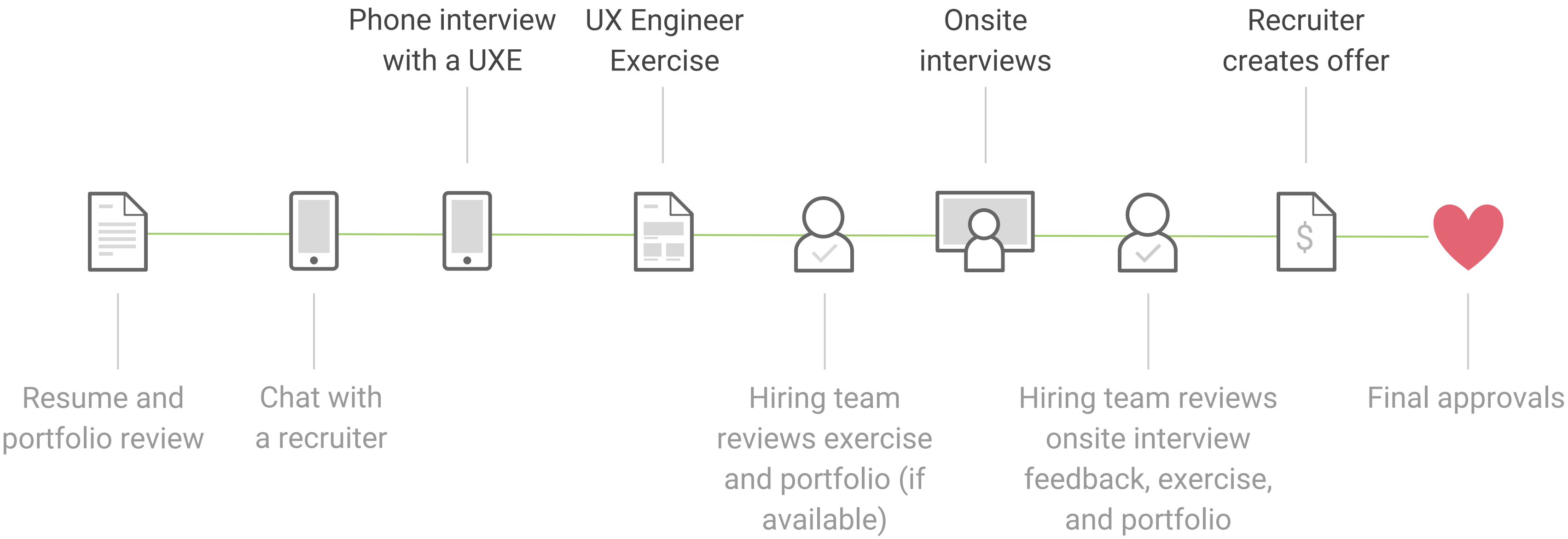


Interview Process

We would love to start learning about you! The estimated timeline for this process can range from 5 to 8 weeks. That said, sometimes things vary, so your interview process may not match the one described here. But remember, being comfortable with ambiguity is a core Google trait!

Ready, set, go!

UX ENGINEER - INTERVIEW PROCESS OVERVIEW



Resume and portfolio review

Chat with a recruiter

Phone interview with a UXE

UX Engineer Exercise

Hiring team reviews exercise and portfolio (if available)

Onsite interviews

Hiring team reviews onsite interview feedback, exercise, and portfolio

Recruiter creates offer

Final approvals

Resume & Portfolio Review

[UXE, Design]

Good UX Engineer portfolios will typically showcase 3 or more projects, include documentation on design process, and demonstrate a reasonable diversity of skills or technologies.

[UXE, Front-End]

Candidates may or may not have a portfolio, but are encouraged to submit one if available.

Candidates from both roles are encouraged to submit their GitHub (or equivalent) profile, provided that it contains meaningful content (do not submit a profile that only contains tutorial projects, or forked projects with no additional contributions).

For general portfolio advice, check out “Hiring a product designer: how to review portfolios.”

Recruiter Phone Chat

Connect with a recruiter for 15-20 minutes to discuss your technical background and design journey, professional goals and interests, portfolio and/or coding projects, an overview of the interview process, and UX Engineering roles. Feel free to ask any questions you might have in regards to Google's design culture, benefits, relocation, or even myths about the Google interview process.

Technical Phone Interview

A Google UX Engineer will call you for a 45 min technical phone interview. You will work off of a shared coding doc, and could also potentially end up coding on a live-render site such as JSFiddle, CollabEdit, etc., which will then be copy/pasted back into the doc at the end of the interview. All the areas under the Technical Preparation Areas section (slides 24 - 31) are fair game! Please make sure you have good service and wifi during the call (although you shouldn’t be Googling answers during the call).

Please have a computer with internet access handy for your phone interview. In addition, remember to find a quiet place with good reception and don’t be afraid to show your enthusiasm!

UX Engineer Exercise

Your recruiter will send you two prompt options and give roughly a week to complete the exercise. We're looking for:

- Clean, well-organized code
- Attention to detail
- Smooth transitions
- Intuitive gesture handling
- Creativity with your solution - Did you evolve from the basic spec at all?

If you are invited onsite, you will be asked to present/discuss this exercise as part of an in-person interview.

Hiring Team Reviews Your Phone Interview Feedback, Exercise, Portfolio, and Resume

The feedback from your phone interview, UX Engineer exercise, portfolio (if available), resume, and any other information you have given us will be reviewed by a panel of Senior Engineers, Designers, Managers, and UX Leaders from across Google.

If the committee comes to a consensus and recommends moving forward, you will be connected with a recruiting coordinator to set up the onsite interviews.

Finding a Team

Typically we try to identify a team prior to inviting you for onsite interviews, and we'll have members of that team participate in the interview. If multiple teams are interested, your interview panel may be a mix of those teams.

If we do not identify a team prior to your onsite, it may mean we need some more information from you, which we'll gather over the course of your onsite interview.

However, the team matching process is **not finalized until the offer stage of the process.** Things often change quickly around here! Throughout the matching process you will have the opportunity to have a phone chat, video call, grab coffee, or maybe even grab lunch with the prospective teams. Ultimately the goal of these conversations is to ensure you are joining a team that you're excited about.

Onsite Interviews - UX Engineer, Design

You can expect 4-5 interviews during the day, typically with 2-3 UX Engineers, and 1-2 UX Designers. A typical interview consists of 5-10 minutes of introductions / background, ~30 minutes of coding or design exercise, and ~5 minutes of questions for the interviewer.

You will have two types of interviews throughout the day: design exercises and coding exercises. Design exercises typically involve talking through or whiteboarding a UI of medium-complexity, given a set of constraints. Examples could be digital (designing an application or interaction) or physical (designing a product). Coding exercises typically involve outlining the implementation for some fairly small, well-scoped UI using a shared coding doc. Examples include a simple photo gallery or travel app.

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Onsite Interviews - UX Engineer, Front End

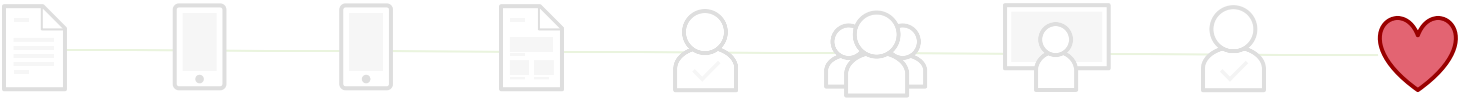
You can expect 4-5 interviews during the day, typically with 2-3 UX Engineers, a UX Designer, and a Software Engineer. A typical interview consists of 5-10 minutes of introductions / background, ~30 minutes of coding or design exercise, and ~5 minutes of questions for the interviewer. You will be solving real world technical problems using a shared coding doc.

You will have two types of interviews throughout the day: design exercises and coding exercises. Design exercises typically involve talking through or whiteboarding a UI of medium-complexity, given a set of constraints. Examples could be digital (designing an application or interaction) or physical (designing a product). Coding exercises typically involve outlining the implementation for some fairly small, well-scoped UI using a shared coding doc. Examples include a simple photo gallery or travel app.

Hiring Team Reviews Onsite Interview Feedback, Portfolio, Design Exercise and Resume

Your interview feedback, UX Engineer exercise, portfolio (if applicable), resume, and any other information you have given us will be reviewed by a panel of Senior Designers, Managers, and UX Leaders from across Google.

If the committee comes to a consensus and recommends moving forward, a recruiter will begin putting together an official offer for you.



Final Approvals

Your recruiter will compile a packet of your information and submit it to our executive team for a series of approvals. Your packet will be reviewed by senior executives over a period of 2-3 days. Simultaneously, we'll be working on other important details such as compensation.

Assuming all goes well, your recruiter will share the details of your offer: compensation, relocation, immigration, and more. Once the offer is approved, your recruiter will extend an offer and we hope that you will join us here at the Googleplex as a Noogler!

How You'll Be Evaluated

Interviewers will be looking at your approach to questions as much as your answer. There are no perfect answers, but there are bad ones!

Google is a casual place but treat the interview day as a professional interview. You don't need to wear a suit (in fact, we discourage that), but arrive prepared and be mindful of coming across as too informal.

DON’T FORGET...

Interviewers will be looking at the approach to questions as much as the answer:

- If you’re thinking through a problem, try to talk us through your thought process.
- Do you listen carefully and comprehend the question?
- Are the correct questions asked before proceeding? (important!)
- Are hints heard and heeded? You won’t be penalized for needing hints.
- Are things assumed without first checking? (not good!)
- Are you slow to comprehend / solve problems? (not good!)
- Do you enjoy finding multiple solutions before choosing the best one?
- Are new ideas and methods of tackling a problem sought?
- Are you inventive and flexible in your solutions and open to new ideas?

REMEMBER TO BE YOURSELF!

Bring your whole self to Google and don’t be afraid to let your personality show. There’s no one kind of Googler, so we’re always looking for people who can bring new perspectives and life experiences to our teams. If you’re looking for a place that values your curiosity, passion, and desire to learn, or if you’re seeking colleagues who are big thinkers eager to take on fresh challenges as a team, then you’re a future Googler.

Technical Preparation Areas

The following slides should provide guidance on how to prepare for the technical portion of your onsite interview. However, technical areas that are not included in this list may be fair game as well!

Javascript

Make sure you are very familiar with the core concepts of JavaScript, including prototypical inheritance, closures, and function invocation. You should also have a good grasp on writing JavaScript in the context of a web browser (event handling, the DOM API, AJAX, and Developer Tools), various application design patterns, JavaScript-based performance debugging, and JavaScript-based animation techniques. It's generally good to be familiar with at least one client-side JavaScript application framework (Angular, Backbone, React, etc.) as well. Be careful not to rely too much on JavaScript utility / convenience libraries such as jQuery or Underscore -- you should be comfortable writing JavaScript without them.

Bonus: ES6, Node.js, Polymer
Not expected to know: Google Closure Toolchain

HTML5

You should be familiar with writing semantically correct, well-organized HTML, and be familiar with at least a few HTML5 APIs (audio/video, touch, geolocation, local storage, etc.). Avoid div soup.

Bonus: Web Components, Shadow DOM, Accessibility

TECHNICAL PREPARATION AREAS

CSS

Don’t underestimate the complexity of writing good CSS. You should know how to write scalable, modular CSS, with a good understanding of the box model, position & display, selector specificity, transforms, transitions, animations, and media queries. It’s also good to have experience using at least one CSS preprocessor, such as LESS or SASS.

Bonus: The role of hardware-acceleration in CSS performance

Prototyping

As a UX Engineer, you'll be creating and working with prototypes on a fairly frequent basis. While we won't enforce that you be familiar with any particular prototyping tool, you should have a good idea of what kind of prototyping is useful in what situations. More specifically, you should be able to reason about when you would use lower-fidelity solutions (paper prototyping, wireframing), medium-fidelity solutions (Framer, Pixate, Form), and higher-fidelity solutions (custom code) and why.

Programming / Source Control

You should know at least one programming language really well, and be proficient in a few others. Web candidates are expected to know JavaScript (plain JavaScript, not just jQuery), while native development candidates are expected to know either Objective-C/Swift or Java and the Android SDK, depending on platform. Experience in at least one other high-level language used at Google (Python, C++) is also a plus, but not strictly required. You should be familiar with a source control system (such as Git, Perforce, or Subversion) and how to use it to collaborate with other developers.

Consuming Web Services

Regardless of whether or you're doing work on the web or native applications, you should be familiar with requesting / receiving data over the internet. It's good to have a working knowledge of HTTP (headers, status codes), and potentially the various security concerns involved with transmitting data over the web.

Bonus: Authentication, XSS

System

You should have at least basic skills with a unix-based terminal, and the ability to perform simple scripting tasks with a language of your choice.

Not expected to know: Memory allocation, file systems

TECHNICAL PREPARATION AREAS

Algorithms

Though UX Engineer candidates aren't expected to know as much in this area as Software Engineering candidates, you should still be generally familiar with big-O complexity analysis, and be able to recognize and debug performance problems in algorithms. A basic knowledge of various sorting algorithms is a plus, though we probably won't ask you to implement one from scratch on a white board.

Not expected to know: Proofs, Discrete Math, NP-complete algorithms questions, etc.

TECHNICAL PREPARATION AREAS

Data Structures

Again, UX Engineer candidates aren’t expected to know as much as Software Engineering candidates, but should still have a working knowledge of basic data structures (including hash tables, trees, graphs) and when each might be useful.

Not expected to know: Advanced data structures (red/black trees, splay trees, dynamic graphs, etc.)

Recommended Reading

The following slide contains links to various great resources for information about UX Engineering and Design at Google. You’re not required to read anything before interviewing at Google, but brushing up on your core skills never hurts.

Continuing to learn is a big part of Google’s culture!

RECOMMENDED READING

Websites

- JavaScript Inheritance Models
  - Live playground and visualization resource for various inheritance models.
- JavaScript Design Patterns
  - A fantastic list of various JavaScript application design patterns, their pros and cons, and sample implementations.
- Mozilla Developer Network (MDN)
  - Good general resource for the web platform -- HTML5, CSS3, JS.
- CSS-tricks.com
  - Contains various articles on CSS techniques, usually with examples and explanations.
- HTML5rocks.com
  - Articles from various experts on web technologies.

Books

- JavaScript: The Good Parts
  - A good resource on core concepts of JavaScript, including prototypical inheritance, closures, function invocation, etc.

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RECOMMENDED READING

Google + UX

- Google Design (Check out the UXE page!)
  - Our thoughts on design and what we're up to these days.
- Design for Simplicity
  - Interested in having an impact? Here is how one of our designers decided to hop right in after three months.
- Google by Design
  - Verge article detailing our changes in philosophy.
- 10 things we know to be true
  - Our own version of self-evident truths.

Good Luck!