Begin the Google UX Design Certificate

Hello and welcome! The program you're about to begin is specifically designed to help every type of learner successfully earn the certificate and become an entry-level user experience (UX) designer. You may be re-entering the workforce after some time off, an artist without a formal design education, or a technology professional with a curiosity to learn about the magic of UX design. Regardless of your background, this certificate program will help you become an entry-level UX designer in less than six months, and no previous experience is necessary. To succeed in this program, you just need to be excited to learn about how user experience design influences the world around you!

Become job-ready

As the use of technology increases every day, the need for user experience (UX) designers continues to grow. UX designers focus on the experience that users have while using products like websites, apps, and physical objects. UX designers make those everyday interactions useful, enjoyable, and accessible. That's why organizations of all kinds, in varied industries, need to hire UX designers. We are excited to guide you on this journey to become a UX designer, as you learn the skills to begin a career in one of today's most in-demand professions.

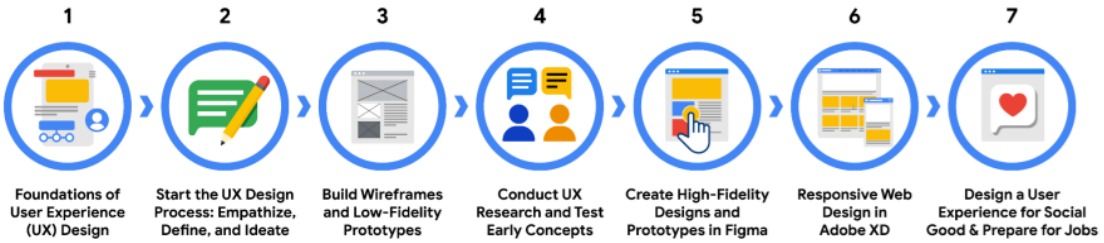
Along the way, you'll build your professional toolbox by learning how to empathize with users and define their problems; create wireframes, mockups, and prototypes; conduct research to get feedback about your designs; and design with accessibility and equity in mind. On top of that, you'll get real experience creating design projects in two of the industry's most popular tools: Figma and Adobe XD. By the end of the certificate program, you'll have an online UX portfolio that showcases your projects from these courses to potential employers.

Program overview

During each course of the program, you'll complete lots of hands-on activities based on real on-the-job skills for UX designers. There will be many types of learning opportunities, such as:

- **Videos** with a Google employee as your instructor.
- **In-video questions** that will pop up from time to time and help check your learning as you go.
- **Readings** to introduce new ideas and build on concepts from videos.
- **Discussion forums** to better understand course topics and chat with fellow learners in the program.
- **Practice quizzes** to test your knowledge and prepare you for graded quizzes.
- **Graded assessments** to measure your progress and provide valuable feedback. There is a graded assessment at the end of each week's worth of content, called a "weekly challenge." You must pass all graded assessments to obtain the certificate.
- **Peer reviews** to provide you with practical feedback from classmates and allow you to develop artifacts for your professional portfolio.

The Google UX Design Certificate has seven courses. We strongly recommend that you complete these courses in order, as projects and content build as you progress through the material. This is the first course of the program, and it covers about four weeks of material.



1. **Foundations of User Experience Design** - *this course*
2. Start the UX Design Process: Empathize, Define, Ideate
3. Build Wireframes and Low-Fidelity Prototypes
4. Conduct UX Research and Test Early Concepts
5. Create High-Fidelity Designs and Prototypes in Figma
6. Responsive Web Design in Adobe XD
7. Design a User Experience for Social Good & Prepare for Jobs

Everyone learns differently, so this program has been designed to let you work at your own pace. Although your personalized deadlines start when you enroll, they're just a guide. Feel free to move through the program at the speed that works best for you. You can always reset your deadlines by clicking the blue **reset my deadlines** button. There's no penalty for late assignments; to earn the Google UX Design Certificate, you simply have to complete all of the work.

Tips

As a learner, you're bringing all of your past experiences and best learning practices to this certificate program. The designers of this curriculum have also put together a list of helpful habits that they believe will help you to be the most successful.

1. **Plan your time:** Setting regular study times and sticking with them each week can help you make learning a part of your routine. Use a calendar or alarm clock to create a schedule. List what you plan to do each day in order to break your work down into achievable goals. If possible, create a quiet place to watch the videos, review the readings, and complete the activities, so you can really focus on the material.
2. **Learn in order:** We recommend taking the seven courses of the certificate program — and the items in each lesson — in the order they appear, as new information and concepts build on previous ones.
3. **Be curious:** If you find an idea that gets you excited, act on it! Search for more details online, ask questions on the Coursera discussion forums, check out the external links that interest you, and take notes on your discoveries. The little things you do to support your learning along the way will take your knowledge even further and will help you stand out to employers.
4. **Take notes:** Notes are useful for remembering information that you think might be important in the future, especially as you're preparing to enter a new job field. In addition, taking notes is an effective way to make connections between topics and gain a better

understanding of those topics. Search online for effective note-taking methods, if you'd like some advice.

5. **Chat (responsibly) with other learners**: If you have a question, chances are, you're not alone. Reach out in the discussion forum to chat and ask for help from other learners taking this program. You can search through existing threads or start a new one with peers about a topic you want to learn more about. You can also visit Coursera's Global Online Community. Other important things to know while you're making friends can be found in the Coursera Honor Code and the Code of Conduct.
6. **Update your profile**: Consider updating your profile on Coursera. This link appears in the menu when you click on your name at the top-right corner of this screen. When classmates find you in the discussion forums, they can click on your name to view your profile and get to know you better.

Welcome to Course 1

Welcome to Foundations of User Experience Design, the first of seven courses in the Google UX Design Certificate. We're excited you're here!

In this course, you will be introduced to the field of user experience and will start to understand its importance for consumers and businesses. We'll start with the basics and help you master foundational UX design concepts like user-centered design, the design process, and designing with equity and accessibility in mind. You'll also explore common job responsibilities of entry-level UX designers, so you can begin to envision yourself in your future job.

Each course of this certificate program is broken into weeks. You can complete courses at your own pace, but the weekly breakdowns are designed to help you finish the entire Google UX Design Certificate in about six months.

What's to come? Here's a quick overview of the real world skills you'll learn in each week of this first course.

Week 1: Introducing user experience design. You'll start to explore the world of UX and the factors that contribute to great user experience designs in mobile apps, websites, and other products. You'll understand the responsibilities of UX designers and teams that UX designers often work with. You'll also explore job opportunities and career paths that will be available to you upon your completion of this certificate program.

Week 2: Getting to know common terms, tools, and frameworks in UX design. UX designers always put the user first. In this part of the course, you'll be introduced to user-centered design and other common frameworks that UX designers use on-the-job, like the design process and the five elements of UX design. You'll also learn about the importance of equity and accessibility when designing. In addition, you'll learn how to think across platforms to design seamless user experiences.

Week 3: Joining design sprints. UX designers often host design sprints to define the direction of a product. You'll learn about the phases of a design sprint and how to plan and participate in one. You'll also learn about retrospectives, which is a way to constructively reflect on a design sprint and improve next time.

Week 4: Integrating research into the design process. As a UX designer, it's your job to put the user front-and-center in everything you do. In this part of the course, you'll explore the role of research in the design process to help you empathize with users. You'll also learn about the benefits and drawbacks of common UX research methods. And, you'll identify and account for biases that can arise when conducting research.

So what are you waiting for? Move on to the next course item to continue with the first course of the certificate program!

Your UXD Portfolio Roadmap

To earn the Google User Experience (UX) Design certificate, you must complete a portfolio that showcases 3 major UXD projects and 3 case studies. These projects are designed to help you become job-ready and enter the field of UX Design. You will develop portions of this portfolio in each of the 7 courses in the certificate program. You'll complete the assignments related to Project 1 (Mobile App) in Courses 2 through 5, Project 2 (Responsive Web Design) in Course 6, and Project 3 (Design a User Experience for Social Good) in Course 7. By the time you have finished this certificate, you'll have designed two mobile apps and two responsive websites.

The three case studies will reflect the assignments and projects you've completed throughout each course. Case studies demonstrate your design knowledge, your ability to collaborate with a team, and your skill for following through on an idea from start to finish, despite challenges. Adding case studies to your portfolio will help future employers get a better understanding of who you are as a designer and how you work through the process of building a product.

Practice Activities

Practice activities are assigned throughout each course as an opportunity to apply the concepts that you learned. Each practice activity is also a chance to develop your personal brand as a UX designer. After you complete a practice activity, you can compare your work to an example from a professional in the field.

There's one basic difference between these practice activities and your portfolio project: everyone enrolled in the course is presented with the same prompts for practice activities, whereas there is a specific prompt for each of your portfolio projects.

Practice activities are not required for the portfolio, but may be added if you feel they are an appropriate representation of your work.

Portfolio Roadmap

Here is a general overview of the graded items that contribute to your portfolio for each course in the UXD Certificate.

Course 1

Course 1, Foundations of User Experience Design is all about getting you acquainted with the basics of user experience design. Your foundational knowledge will help you succeed in starting a portfolio to present to prospective employers when you start your job search.

Course 2

Course 2, Start the UX Design Process: Empathize, Define, and Ideate is focused on learning how to empathize with potential users, defining users' needs, and coming up with ideas for design solutions. Your first project is designing a mobile app. The following assignments will help with the first project and case study for your portfolio:

- Mobile App Project Personas
- Mobile App User Journey Map
- Mobile App User Problems
- Mobile App Competitive Audit and Report

Course 3

In Course 3, Build Wireframes and Low-Fidelity Prototypes, you'll sketch storyboards, create wireframes, and build a low-fidelity prototype of your app in a design tool called Figma. The following assignments will help with your Mobile App case study for your portfolio:

- Mobile App Storyboards
- Mobile App Digital Wireframes
- Mobile App Low-Fidelity Prototype

Course 4

In Course 4, Conduct UX Research and Test Early Concepts, you'll plan and conduct research to test your mobile app designs and get feedback from users. The following assignments will help with your Mobile App case study for your portfolio:

- Mobile App Research Plan
- Mobile App Usability Study
- Mobile App Insights
- Mobile App Research Presentation

Course 5

In Course 5, Create High-Fidelity Designs and Prototypes in Figma, you'll create mockups and a high-fidelity prototype of your app for a second round of testing. The following assignments will help with your Mobile App case study for your portfolio:

- Mobile App Mockup
- Mobile App High-Fidelity Prototype
- Mobile App Case Study

Course 6

The second portfolio project, a responsive website, is introduced in Course 6: Responsive Web Design in Adobe XD. Your responsive web design will be created using Adobe XD. The following assignments will help with your responsive web design case study for your portfolio:

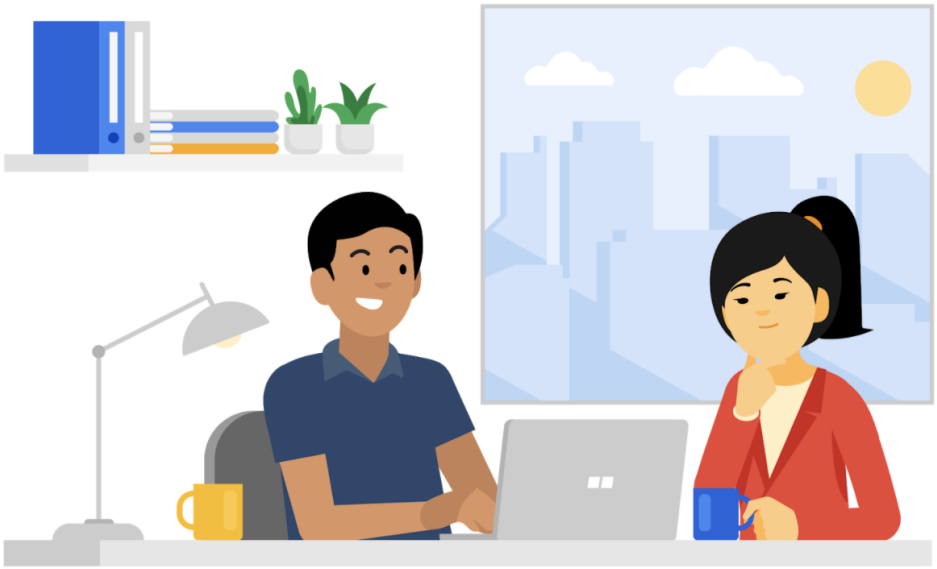
- Responsive Web Design Website Sitemap
- Responsive Web Design Wireframes
- Responsive Web Design Low-Fidelity Prototype
- Responsive Web Design High-Fidelity Prototype
- Responsive Web Design Case Study

Course 7

In the final course in the program, Design a User Experience for Social Good and Prepare for Jobs, you'll design a dedicated mobile app and a complementary responsive website focused on creating social good. The following assignments will help with your the Social Good App and Website case study and your overall portfolio:

- Social Good App and Website Research Results and Designs
- Social Good App and Website Mockups and High-Fidelity Prototypes
- Social Good App and Website Case Study
- UX Portfolio

Program surveys



During this certificate program, you will be asked to complete a few short surveys. These are part of a research study to understand how effective the certificate program has been for learners like you. This reading provides a summary of the topics that each survey will cover.

Your survey participation is optional but extremely helpful in making this certificate program the best that it can be. There are no right or wrong answers to the survey questions. Your responses and personal data will:

- Not affect your course experience, scores, or ability to receive a certificate or job in any way.
- Be kept confidential, with your name separated from your data.
- Not be shared outside of our research team, except where you give permission to share contact information with hiring partners.

Thank you for your consideration and time!

Entry survey

In the next course item, you will have the opportunity to fill out a brief survey to help us understand why you have enrolled in this certificate program. If you don’t fill out the survey now, you will receive a reminder to fill it out after watching one video or completing one assignment.

The survey will ask about your experiences leading up to this certificate program and the goals you hope to accomplish. This is critical information to make sure we can meet the needs of learners, like you, and can continue to offer this program in the future.

Individual course feedback

When you complete the last graded assignment within each of the seven courses, you may be asked to complete a survey that revisits earlier questions and asks what you have learned up to that point in the program. Again, filling out this information is voluntary, but it's extremely beneficial to the certificate program content development team and future learners.

Certificate completion survey

After you complete the last graded assignment in the final course of the certificate program, you will be asked to answer a survey that revisits some earlier questions and asks what you have learned throughout the duration of the certificate program. This survey also asks if you would like to share your contact information with prospective employers. Both filling out the survey and sharing your contact information with prospective employers is optional. Again, participating in the survey or sharing your information with future employers will not affect your course experience, scores, or ability to receive a certificate or job in any way.

Helpful tips to get started

You're about to jump into the content of the first course of the Google UX Design Certificate! Here are three helpful tips to keep in mind as you complete the certificate program over the next few months.

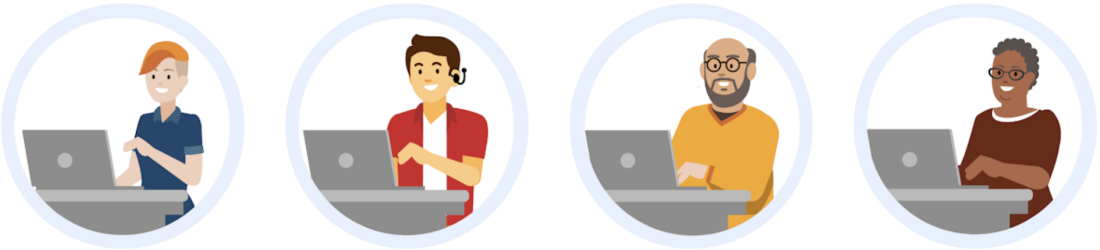
Provide feedback on course content

Give feedback about videos, readings, activities, and other course materials. Just open the resource, and find the thumbs-up and thumbs-down icons.

- Click the **thumbs-up icon** for materials that are helpful.
- Click the **thumbs-down icon** for materials that are not helpful.
- Click the **flag icon** to raise a specific issue with the item. Then, select a category, and type an explanation in the text box. This feedback goes to the course developers, not other learners, and helps create even better programs in the future.

For technical help, visit the Learner Help Center. For help accessing course materials, click the “Contact us” link at the bottom of the page.

Obtain the Google UX Design Certificate



After you complete all seven courses in this program, you will qualify for the Google UX Design Certificate. You can review videos, readings, discussion forums, in-video questions, and practice quizzes in the program for free. However, to access graded assignments and be eligible to receive your official Google UX Design Certificate, you must:

- Pass all required assignments in all seven courses with a score of 80% or higher. You can also meet the course-passing threshold of 80% with a cumulative graded score.

AND

- Pay the course certificate fee, or apply and be approved for Coursera Financial Aid.

Please note: You can review videos, readings, discussion forums, and practice quizzes for free, by auditing the courses. However, you will need to upgrade to the certificate program to unlock the graded assessments and earn the official certificate. In other words, auditors have free view access to all course materials but are unable to submit any assignments for a grade.

Learn more

Throughout this certificate program, you will learn the foundations of user experience design. We will provide a lot of information through videos, readings, and hands-on activities. But sometimes, you may need to look things up on your own for additional context. Things change fast in this

growing field, so it is critical that you do your own research and stay up-to-date on the field of UX design.

Here are some helpful UX design resources to keep in mind as you learn. You might even want to bookmark some of these websites on your computer to review on an ongoing basis!

- Interaction Design Foundation: A library of open-source UX design resources, including new articles published every day. There are also local meet-ups (virtual and in-person) that are free to attend and open to everyone.
- Adobe XD Ideas: A blog curated for entry-level UX designers. You'll find inspiring examples of great design, valuable career tips, and more.
- UX Collective on Medium: An article platform with stories on user experience, visual design, product design, and more. Articles on Medium are written by a large variety of writers and cover a range of topics.
- Nielsen Norman Group: Research-based UX guidance, including a ton of helpful articles about the design process, research methods, and user testing, which you'll learn about later in the certificate program.

User experience careers

There's a good chance that you enrolled in this certificate program hoping to find work as a UX designer in the near future. UX design is a rapidly changing field with a projected 10-year growth rate of 15% (Burning Glass, 2020). When you check out most job searching sites, you'll find tens of thousands of job postings for UX-related roles. In fact, recruiters around the world are struggling to fill open positions for UX designers because the demand for people with these skills is outpacing the supply of available UX designers. That's where you come in!

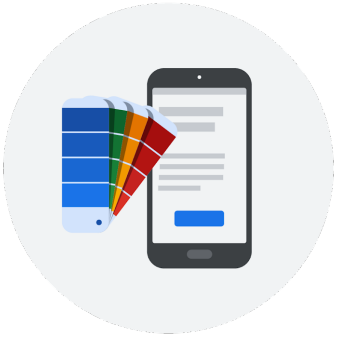
While it might be a little early to begin searching for jobs, it's important context to know that "UX designer" is just one of many job titles within the broader user experience field. As you continue with this certificate program, you might become interested in a certain specialty or career path within the field. In addition, as an entry-level UX designer, you will likely work alongside other UX professionals with various areas of expertise. To help you get started, this reading will explore a handful of different careers within the field of user experience.

Interaction designer

Interaction designers focus on designing the experience of a product and how it functions. They strive to understand the user flow, or the path, that a typical user takes to complete a task on an

app, website, or other platform. At Google and many other companies, interaction designers are a specialized type of UX designer.

An interaction designer's work answers questions like: What should happen if a user taps on this button? How do we make this action easier for users to complete? And, how are the design elements within the website laid out? Interaction designers focus less on how the product looks and instead strive to make the product easy to navigate and simple for users to interact with.



Visual designer

Visual designers focus on how a product or technology looks. They are often responsible for designing logos, illustrations, and icons, as well as deciding on font color, size, and placement. Visual designers focus on the layout of each page or screen and make all of the design elements fit together in a visually appealing way. At Google and many other companies, visual designers are a specialized type of UX designer.

The role of a visual designer is to answer questions like: What kind of visual style should icons have, in order to fit the product's branding? Or, which color and font should we use for this button? The goal of a visual designer is to delight users with designs that inspire, engage, and excite them.

Motion designer

Motion designers think about what it feels like for a user to move through a product and how to create smooth transitions between pages on an app or website. They may also create animations or visual effects to bring their design ideas to life. At Google and many other companies, motion designers are a specialized type of UX designer.

A motion designer’s work answers questions like: How should an app transition between pages? How do we show the connection between these actions? And, what’s an engaging animation that

will help tell our story? Motion designers focus on design elements that move, rather than traditional static designs.

VR/AR designer

Virtual reality (VR) and augmented reality (AR) designers create products that provide users with immersive experiences, unbounded by the limits of the physical world. **Virtual reality** involves a wearable headset that takes over a user's vision; it blocks out their physical surroundings and immerses them in a completely virtual world. For example, VR can feel like you're entering the setting of a magical imaginary land.

On the other hand, **augmented reality** uses the physical world as a backdrop and adds virtual elements on top of it. Users are still contextually aware of their surroundings, but their reality is augmented, or enhanced, by adding elements through a screen. For example, you can sit in your actual kitchen, and an AR experience can add digital images, like a new barstool or a piece of artwork, to the room around you.

A VR or AR designer's work answers questions like: How do we create a user experience that leverages 3D space? Or, will this action cause a user motion sickness? To ensure users are comfortable immersing in a VR or AR experience, designers need to carefully consider everything from sound to lighting.

UX researcher

UX researchers conduct studies or interviews that examine how people use a product. UX researchers often identify pain points that users are experiencing and explore how products can help solve those problems. They also explore the usability of existing products, by asking users to complete tasks in an app or website, for example.

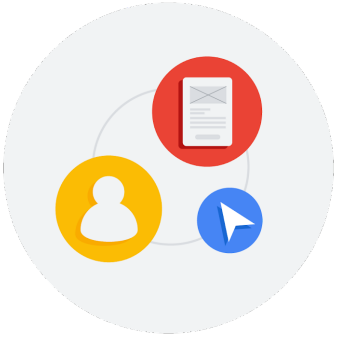
UX researchers answer questions like: What problems are users facing? Is the design of this product easy to use? And, would people be interested in this new design feature? The goal of UX

researchers is often to understand how a product can provide a solution to a real problem users are having.

UX writer

UX writers think about how to make the language within a product clearer so that the user experience is more intuitive. UX writers also help define a brand's voice and personality. The work of UX writers often includes writing labels for buttons and determining the tone of language used within an app or website.

UX writers focus on answering questions like: What words should be used to communicate this idea clearly? Should the tone for this app be friendly or technical? And, what should the language on this button label say? UX writers often become subject matter experts in order to present content that's easy to understand for all users.



UX program manager

UX program managers ensure clear and timely communication, so that the process of building a useful product moves smoothly from start to finish. This might include setting goals, writing project plans, and allocating team resources.

UX program managers answer questions like: What are the overall goals for this project, and what's the plan to achieve them? And, how can we create and improve processes within the team? UX program managers work across departments to make sure that UX is involved throughout a project lifecycle.

UX engineer

UX engineers translate the design's intent into a functioning experience, like an app or a website. They help UX teams figure out if designs are intuitive and technically feasible.

UX engineers answer questions like: How do we implement each interaction? How do we build this design in a way that stays true to its original intent? And, how might we explore alternatives to determine the best user experience? UX engineers synthesize design and development, bringing product concepts to life.

Conversation designer

Conversational interfaces are everywhere, from intelligent virtual assistants like Google Assistant and Siri, to interactive voice response systems like customer service systems you can talk to. Conversational interfaces even include automobile navigation systems and chatbots! Conversation design incorporates natural, real-world conversational behaviors into the interactions between users and these systems.

Conversation designers make it possible for users to have natural conversations to get things done. They leverage user research, psychology, technical knowledge, and linguistics to create user experiences that are intuitive and engaging. Conversation designers develop the "persona" or personality of the voice, as well as the flow and dialog of the interaction.

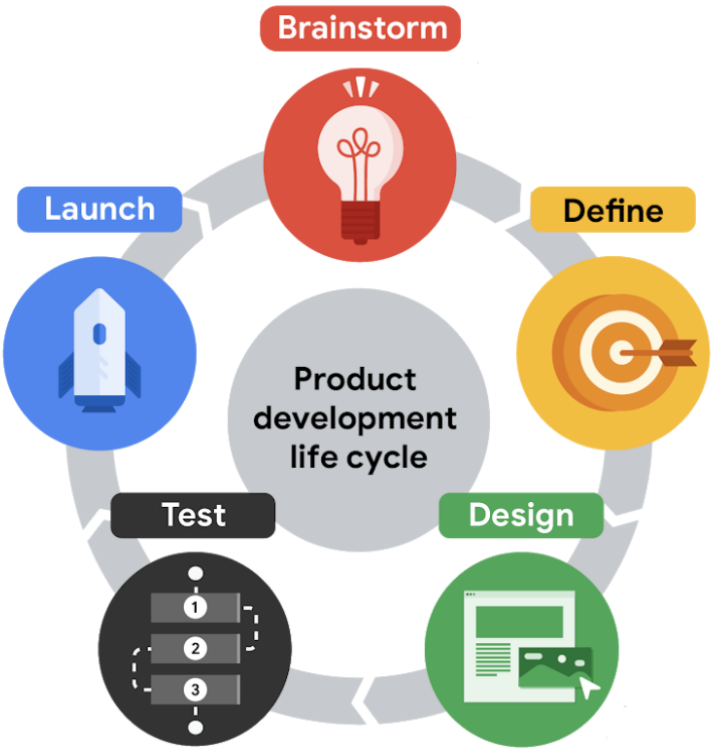
Conversation designers answer questions like: What's the ideal language and flow based on who users are, the task to be accomplished, and the context of the conversation? Does the personality of the virtual assistant seem genuine, engaging, and reflective of the brand values? How does the conversation work with on-screen elements? Does the virtual assistant offer a consistent, usable, and useful experience end-to-end?

Explore careers in the field of UX

You now know about some of the most common jobs in the field of user experience! As you begin your first job as a UX designer, you'll collaborate with fellow UXers, like the ones listed here, to create innovative and beautiful products that people love to use. Pretty exciting, right?

The product development life cycle

Every new product, whether it's an app or a physical object, follows a specific set of steps that take it from the first spark of an idea to the release of the final product. This is called the **product development life cycle**, and it has five stages: **brainstorm**, **define**, **design**, **test**, and **launch**. Depending on where you work, the exact names of each stage might be a little different, but the overall process is generally the same.



Around the circle there are icons for each phase of the lifecycle - brainstorm, define, design, test, launch

In this reading, you'll explore the product development life cycle and how UX design fits into each stage. As you might have guessed, UX designers are most engaged during the *design* stage of the product development life cycle, but they work closely with team members — like researchers, product managers, and engineers — throughout the entire life cycle.

As a product moves through the development life cycle, the team might need to spend longer working in one stage than in others, or repeat certain stages based on feedback. The success of each stage depends on the previous stage's completion, so it's important to do them in order.

Check out each of the five stages of the product development life cycle!

The first stage of the product development life cycle is the **brainstorm** stage, when the team starts thinking of an idea for a product. Your team might already know the user problem that you want to solve when you begin the product development life cycle. If not, coming up with a list of user problems is a great place to start.

It's important to pay attention to the diversity of your team at this stage. Teams that have meaningful diversity across identifiers like race, gender, abilities, family structure, age, and ethnicity are generally more effective at brainstorming because they bring together a lot of different lived experiences.

Consider this example: If you're designing a new app to help working parents and guardians, your team might start the brainstorming stage by listing common problems that working parents and guardians face, like a lack of reliable childcare, transportation concerns, or trouble managing schedules. Your team might review user feedback about other similar products or the results of user surveys to help guide your ideas. After you've brainstormed lots of user problems, your team chooses one and starts coming up with ideas for solutions to that problem.

The brainstorm stage is also an ideal time to check out your product's competitors and identify if there are already similar products available in the market. You want your product to fill a gap in the market or solve a problem better than existing products. Completing research into both your competitors and your users helps determine what problems need to be addressed by the product's design.

One more thing to keep in mind: A UX designer at a large company might not be very involved in the brainstorm stage. But a UX designer at a startup or small business could have a big role to play!

The second stage of the product development life cycle brings together UX designers, UX researchers, program managers, and product leads to **define** the product. The goal is to figure out the specifications for the product by answering questions like: Who is the product for? What will the product do? And, what features need to be included for the product to be successful?

During the define stage, your team narrows the focus of your idea. One product can't solve every user problem. Continuing with the example for an app to help working parents and guardians,

your idea should focus on helping parents and guardians find reliable childcare *or* manage their schedules, not both. In this stage, a UX designer might help the team pin down the focus of the idea, but a product lead will probably be the one to define the scope of the project.

The research you completed in the brainstorm stage comes in handy now. Using what you've learned, you will pinpoint your potential users' problems. Your team can't assume they know what problems users are experiencing without asking the users directly.

The third stage of the product development life cycle is **design**. This is when you, as a UX designer, really get to shine! At this stage, UX designers develop the ideas for the product. Generally, UX designers start by drawing wireframes, which are outlines or sketches of the product, then move on to creating prototypes, which are early models of a product that convey its functionality.

UX writers are also involved in the design stage and might do things like write button labels or other copy within the product's wireframes and prototypes.

At this point in the life cycle, UX designers make sure to include all of the product specifications that were outlined in the define stage. You might also check to ensure that each part of the design fits together in an intuitive way. For example, UX designers might check that the screens of an app flow in a way that makes sense to the user. Or that each interaction, like tapping a button, has a correlating action, like an item getting added to a cart. On the other hand, with a physical product, UX designers might check that one piece of a physical object matches up to the connecting piece. Finally, UX designers also make sure that each task a user needs to complete is clear and easy to understand, like navigating from the homepage to the checkout confirmation page in an app.

Next, your designs move into the **test** stage. UX designers work with engineers to develop functional prototypes that match the original designs, including details and features that fit the company's brand, like font and color choices. This also means writing the code and finalizing the overall structure of the product.

Or, if you want to test your designs earlier, another option is to test a functioning prototype of the product, using a design tool like Figma or Adobe XD. You'll learn how to create prototypes of your designs later in the certificate program.

At this stage, the designs go through at least three phases of testing: internal tests within your company, reviews with stakeholders, and external tests with potential users. A **stakeholder** is a person you need to work with to complete the project or anyone who has some interest in the project, either within or outside of the company.

Running these tests is typically the responsibility of the UX researcher on your team, if you have one.

- First, the team **tests the product internally** to look for technical glitches and usability problems. This is often referred to as alpha testing.
- Then, the product undergoes a **test with stakeholders** to make sure the product is aligned with the company's vision, meets legal guidelines for accessibility, and follows government regulations for privacy, for example.
- Finally, there's an **external test with potential users**. This is the time to figure out whether the product provides a good user experience, meaning it's usable, equitable, enjoyable, and useful. This is often referred to as beta testing.

Gathering and implementing feedback at this stage is absolutely critical. If users are frustrated or confused by your product, UX designers make adjustments or even create new versions of the design. Then, the designs are tested again, until there's little or no friction between the product and the user.

It's important to call out that the product development life cycle isn't a completely linear process. Your team might cycle between designing and testing a few times before you're ready to launch the product!

Finally, you've arrived at the fifth and final stage of the product development cycle: the **launch** stage, when the product is released into the world! This might involve listing an app in the Google Play Store or Apple's App Store, making a website go live, or putting a physical product on store shelves.

The launch stage is a time to celebrate your work and start promoting the product. Marketing professionals on your team might post about the new product on social media or publish a press release. The customer support team might get ready to help new users learn how the product works.

Program managers also meet with the cross-functional team to reflect on the entire product development life cycle and ask questions like: What worked and what could be improved? Were

goals achieved? Were timelines met? Making time for this reflection is super important, since it can help improve the process going forward.

For a physical product, the launch stage might be the end of the product development life cycle. But for a digital product, like an app or website, launching the product to a wider audience provides another opportunity to improve on the user experience. New users might find problems with the product's functionality or features to improve that no one noticed before. So, after the launch stage, teams will often cycle back to the design and testing stages to start working on the next version of a digital product.

Beyond the product development life cycle

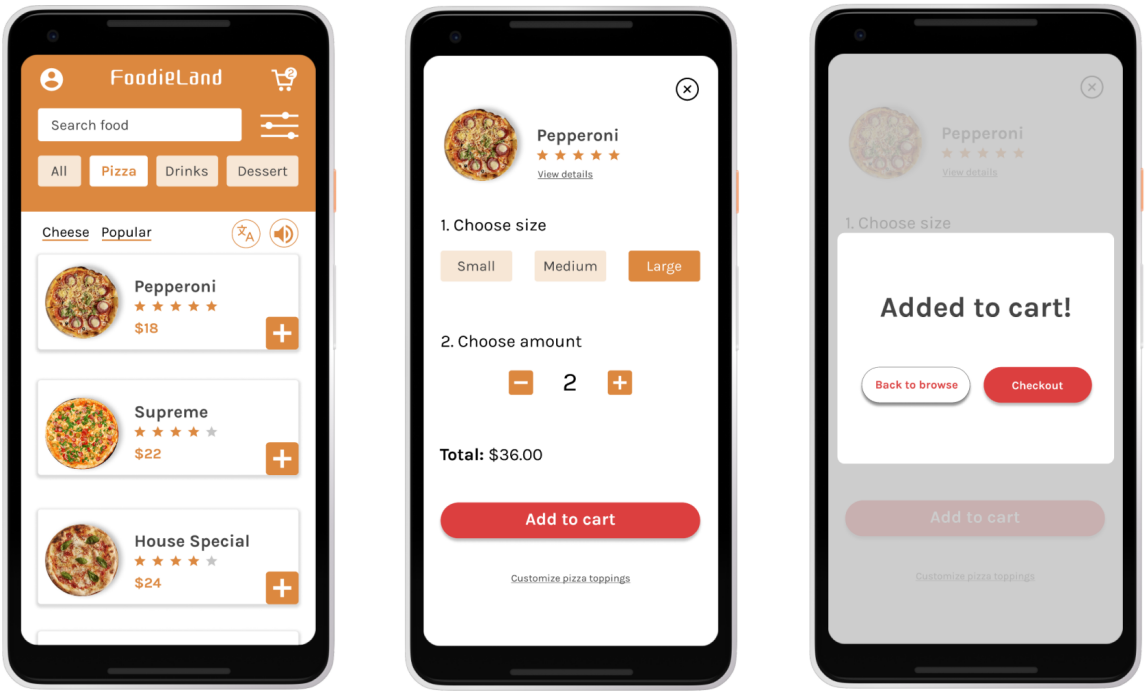
You now understand how products are developed and the role UX designers play in the life cycle. Everywhere you look, you'll find products of all kinds — big, small, physical, or digital — that have been through this very process. The more you see the intention and thought put into everyday objects, the closer you'll get to becoming a UX designer!

Activity Exemplar: Identify good user experience

Here is a completed exemplar along with an explanation of how the exemplar fulfills the expectations for the previous activity.

Completed Exemplar

The app images are provided below for easy reference:



Here is the completed Identify Good UX Design exemplar. To see the completed exemplar for this course item, click the link below and select “Use Template.”

Link to exemplar: Identify Good UX Design.

OR

If you don’t have a Google account, you can download the exemplar directly from the attachment below.

Google UX Design Certificate - Identify Good UX Design [Exemplar]

DOCX File

Identify Good UX Design Template

Google UX Design Certificate

Prompt 1: Identify at least one aspect of the FoodieLand app that demonstrates usable design. Explain your reasoning in 1-2 sentences.

Hint: Is the app's design, structure, and purpose clear? Does the app have any elements or features that make it easy to navigate?

Usable	The "Add to cart", "Back to browse", and "Checkout" buttons in the Foodieland app are examples of usable design because they clearly indicate what will happen next when users interact with them.

Prompt 2: Identify at least one aspect of the FoodieLand app that demonstrates equitable design. Explain your reasoning in 1-2 sentences.

Hint: Does the app address the needs of people with diverse abilities and backgrounds?

Equitable	The Foodieland app's translation feature is an example of equitable design because it is helpful for people who speak different languages.

Prompt 3: Identify at least one aspect of the FoodieLand app that demonstrates enjoyable design. Explain your reasoning in 1-2 sentences.

Hint: Does the app inspire a positive reaction from the user by considering their thoughts and feelings? Does the app engage users and make them excited to keep using the app?

Enjoyable	The images used in the Foodieland app are examples of enjoyable design because they are visually appealing and help the user understand what they're ordering.

Prompt 4: Identify at least one aspect of the FoodieLand app that demonstrates useful design. Explain your reasoning in 1-2 sentences.

Hint: Does the app solve the problem of "how to help a busy person working from home select a meal to be delivered?" How does the app help solve this problem?

Useful	The Foodieland app's filter feature allows users to narrow down their search. This is an example of useful design because it helps the user easily select a pizza to order.

Assessment of exemplar

Your responses may differ from the exemplar, but your work should clearly identify one example of each design criteria—usable, equitable, enjoyable, and useful—in the FoodieLand app.

The completed exemplar identifies aspects of the Foodieland app that demonstrate how the app is usable, equitable, enjoyable, and useful.

1. The FoodieLand app's buttons were identified as making the app usable.
2. The FoodieLand app's translation feature was identified as making the app equitable.
3. The FoodieLand app's use of images was identified as making the app enjoyable.
4. The FoodieLand app's filter feature was identified as making the app useful.

Now, compare this exemplar to your answers in the template. What did you do well? Where can you improve? Take this feedback with you as you continue to progress through the course.

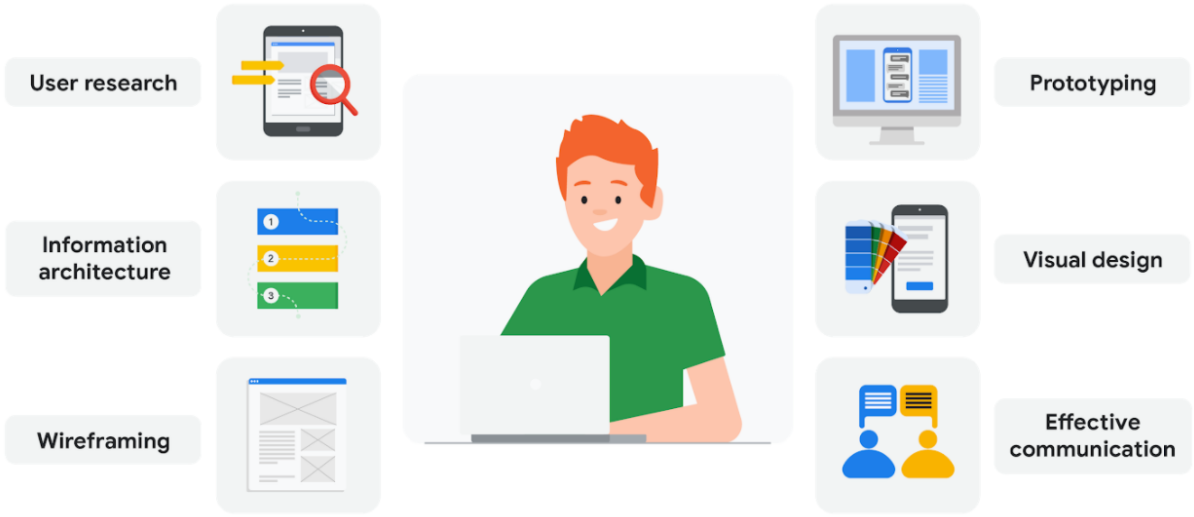
The role of a beginner UX designer

As you start out on your path to becoming a UX designer, you're probably curious about the actual work your new career might involve. In this reading, you can explore the different responsibilities that entry-level UX designers commonly take on during a project. You'll also review the differences between generalist, specialist, and T-shaped UX designers.

But first, a quick call out: You'll probably notice a lot of new vocabulary and unfamiliar terms in this reading. Don't worry! You'll learn about each of these concepts in more depth throughout the certificate program. We'll also provide a glossary of important terms and their definitions at the end of each week of content.

Responsibilities of an entry-level UX designer

As an entry-level UX designer, you'll have a lot of exciting opportunities to gain experience. When you first start out, you'll probably take on a lot of different roles and responsibilities.



Icons include user research (a tablet with magnifying glass over it)
Information architecture (a series of 3 colored, numbered bars)
Wireframing (a graphic of a wireframe)
Protoyping (a graphic of a desktop monitor with protoype of mobile device on screen)
Visual design (a mobile phone next to paint swatches)
Effective communication (a graphic of two people talking)

User research: User research is about understanding the people who use your product. Through research, you'll learn about users' backgrounds, demographics, motivations, pain points, emotions, and goals. Your research methods might include surveys, observations, and interviews. We'll explore user research in much more detail in an upcoming course.

Information architecture: Information architecture, or IA for short, involves deciding how your product is organized and structured. Think of IA as a skeleton that outlines how users interact with your product. Everything in your product should be organized in ways that make sense to the user and meets their expectations.

Wireframing: A wireframe is a basic outline or sketch of a product or a screen, like an app or website. As the name suggests, wireframes look like they were created with wires. They're mostly lines and shapes, with some text. Wireframes can be drawn by hand or created digitally using software. Wireframing helps you bring your design ideas to life, so other people on your team can provide input and feedback.

Prototyping: A prototype is an early model of a product that demonstrates its functionality. Prototypes can be in physical or digital formats and can vary in complexity. Sometimes a prototype is made to demonstrate one specific feature of a product, like the transition between screens or the way the product physically looks and feels. You'll make multiple prototypes for any given product throughout the design process.

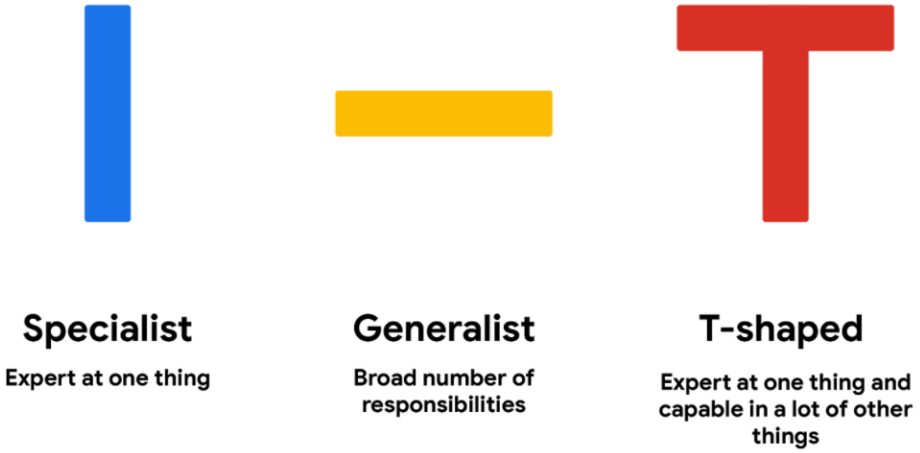
Visual design: Visual design focuses on how the product or technology looks. As a UX designer, you need to understand the foundations of visual design in order to communicate the connection between a product's functionality and its appearance to users. You'll learn some of the most important principles of visual design throughout this certificate program.

Effective communication: Effective communication as a UX designer means connecting with your colleagues through emails, meetings, presentations, and design software. UX design is a very collaborative field, so being able to communicate both digitally and face-to-face with

teammates is important. You need to be a good listener, be receptive to feedback, and share your ideas in a clear way.

Specialist and generalist designers

As you get further along in your career, you can choose to specialize in a certain area of UX design or keep your skill set more broad. What exactly are the differences between specialist and generalist UX designers? Read on to learn more!



Vertical line - representing a specialist, expert at one thing.

Horizontal line - representing a Generalist, broad number of responsibilities

T-shaped - expert at one thing and capable in a lot of other things
Specialist: A specialist dives deep into one type of UX design, like interaction, visual, or motion design, and becomes an expert. Specialist UX designers are more common at large companies that have a lot of designers, like here at Google. Some of the benefits of becoming a specialist include:

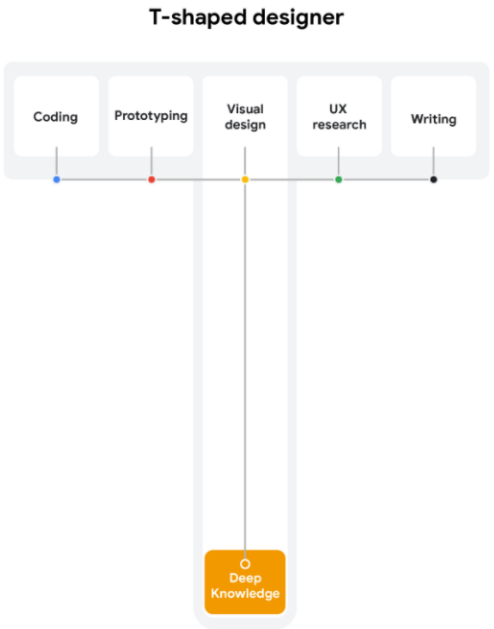
- Focusing on one type of design that you enjoy more than others.
- Gaining deep knowledge of one type of design.
- Becoming well-known in the industry for your expertise in a particular type of design.

Generalist: A generalist has a broad number of responsibilities. A majority of UX design jobs are generalist positions, especially at companies with fewer UX designers. Typically, entry-level UX designers work in generalist roles, and some people choose to stay in generalist design roles for their entire careers. There are a lot of benefits to being a generalist UX designer, like:

- Expanding your skills in many different types of UX work.
- Trying a variety of responsibilities and finding an area of UX that you're especially passionate about.
- Keeping your job feeling fresh and new, while doing a variety of tasks.

T-shaped: A T-shaped designer is a specialist who also has a lot of capabilities in other areas. T-shaped designers get their name because the stem (or vertical line) of a T represents their expertise in one area, while the top (or horizontal line) symbolizes their related skills in a broad

number of areas. T-shaped designers are great to have on your team, since they come with the benefits of both specialists and generalists. The image below highlights some of the skills a T-shaped UX designer might have. In this example, the person is a visual design specialist but also has knowledge in other areas, like coding and prototyping.



Each designer tends to naturally have a little T-shape in their abilities, even at the beginning of their career. As you start to work on projects, you'll probably notice where your strengths and interests lie. As you get better at one area of design, you'll likely find yourself working on that part of design projects more often, which helps you continue to improve in one area.

You can also decide to direct your T-shape by developing specific skills that will open up future job opportunities. For example, you might work extra hard on your prototyping skills, in addition to your general UX design skills, which can lead to new experiences and professional growth.

Your future as a UX designer

There are so many different paths you can take within the field of UX design. After you land your first entry-level job and start working in the field, you'll get a better idea of whether you want to be a UX design generalist or specialize in one specific type of design. There are plenty of benefits to being a generalist, specialist, or T-shaped designer, so it's all about finding what works best for you!

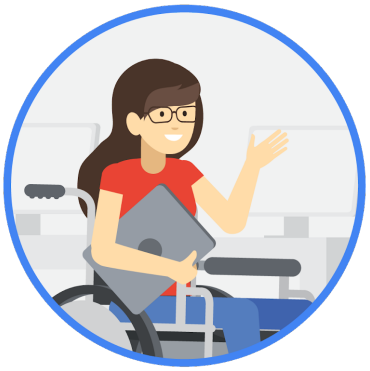
Interact with cross-functional teammates

UX design is a highly collaborative field, where designers typically work in cross-functional teams. Your future teammates might include engineers, UX researchers, program managers, product leads, fellow designers, and others. Working with a diverse group of people across functions helps you learn from their areas of expertise and explore other domains within the field

of UX. In this reading, you'll learn about cross-functional team members you're likely to work with as a new UX designer.

Teams that UX designers work with

Cross-functional teams come in lots of shapes and sizes, depending on the organization you work for and the project you're working on. In general, though, there are a handful of key team members that you'll get to work with as a UX designer.



Engineer

Engineers: Engineers translate designs into a functioning experience, like an app or a website. They help UX teams figure out if designs are feasible from a technical standpoint and bring that idea to life. Working closely with engineers and involving them early in the design process is critical to ensure your project is set up for success.

UX Researcher

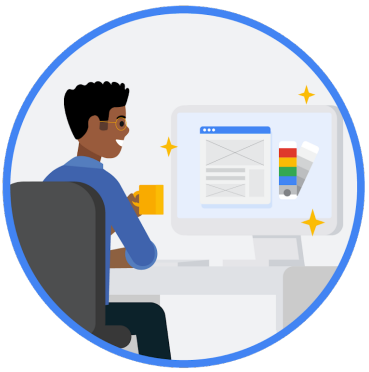
UX researchers: UX research is all about understanding what users need and expect from your product. UX researchers use methods like observations, interviews, and surveys to understand users' unique perspectives. Findings from research can inform your design decisions each step of the way. If you work at a startup or small business, there's a good chance you'll get to do your own UX research. At larger companies though, you'll likely work with designated UX researchers who will provide research findings to inform your design work.

Program Manager

Program managers: Program managers ensure clear and timely communication across the team, so that the process of building a useful product moves smoothly from start to finish. Program managers supervise, support, and keep track of the project as a whole. They assign tasks to team members, monitor the project budget, and manage timelines, among other things. Think of your team's program manager as your go-to source of support when facing any setbacks or issues with your work.

Product Lead

Product leads: Product leads are in charge of ensuring the final product's success and communicating with stakeholders. Your product lead will define the project's core goals and deliverables, so you can focus on creating innovative design solutions. At some companies, product leads are known as product managers.



Other UX Designers

Other UX designers: In many cases, you won't be the sole designer working on a given project, especially if you work at a larger company and when you're a new designer. For example, as an entry-level UX designer, you might collaborate with a more experienced visual designer who can ensure that your designs adhere to the company's brand standards for things like color and font. Working with other designers is a great chance to learn and ask questions!

Working together

Creating a strong product requires working with a cross-functional team of brilliant minds, all contributing their unique skills. As a UX designer, you'll play a vital role that contributes to the team's success!

The influence of company size and industry

Have you always dreamed of working with a close-knit group at a startup? Or landing a job at your favorite company? Depending on where you end up working, your job as a UX designer could be quite different! In this reading, you'll explore how UX design roles can vary depending on the company's size and industry.

Startups and small businesses

Startups are new businesses that want to develop a unique product or service and bring it to market. **Small businesses** are privately owned businesses with few employees. A lot of UX designers are excited to start work at startups or small businesses because they can see the impact of their work more quickly and develop a broader range of skills.

- **Team size:** Close-knit team and able to work directly with upper management.
- **Growth:** Opportunity for growth due to taking on many responsibilities (visual design, interaction design, user research, and more).
- **Creativity:** Usually more creative freedom with fewer guidelines and processes.

- **Impact:** Lots of impact on final products, with few people working on a project.

- **Mentorship:** Fewer mentors to choose from within a smaller company.
- **Responsibility:** Most of the responsibility for a UX project falls solely on you, which can be stressful if you have little UX experience.
- **Speed:** Have to be comfortable working quickly and launching work that isn't perfect, with little oversight.

Big companies

At a big company, like Google, you're likely to work in teams on a specific project. Lots of UX designers want to work at big companies with the people who developed some of the most well-known products in the world. UX teams at larger companies tend to be more compartmentalized by specialization, making it easier for you to become an expert in one particular area of UX.

- **Mentorship**: A variety of experienced designers and other UXers to learn from.
- **Growth**: Lots of opportunity for growth because there are many levels of designers and management.
- **Guidelines**: Clearer guidelines to keep products uniform and on brand.
- **Team size**: More people working on one project, which means you're better able to focus on your specific responsibilities.
- **Specialization**: Opportunity to focus on one particular area of design.

- **Team size:** May feel less impactful or important as a contributor with lots of other designers on the project.
- **Impact:** May feel small at a company with so many features and products.
- **Guidelines:** Defined guidelines can be restrictive to creativity.

Design agencies

A **design agency** is a one-stop-shop for visual brands, products, and services. Working at a design agency can be similar in some ways to working at a small business or startup, except you have multiple companies as your clients. Many agencies tend to work on a broad range of products, so you can explore many kinds of styles and approaches to UX design.

- **Impact:** Lots of impact on projects, if you're the only UX designer on the team.
- **Networking:** Opportunity to work with senior stakeholders, different teams, and diverse clients.
- **Exposure:** Exposure to lots of companies and industries with different clients.
- **Resume:** Potential to work with large brands and display that work in your portfolio.

- **Mentorship:** Lack of mentorship if you are the only UX designer on a project.
- **Monotony:** Depending on the agency, you could work only on the same type of projects.
- **Ownership:** Might not be able to work on a project from start to finish.
- **Finished product:** Products you work on might not launch, depending on client priorities.

Advertising agencies

A lot of UX designers work at **advertising agencies,** which are teams of creatives hired by clients to build marketing campaigns. Sometimes called "creative technologists," these designers work to create ads for brands using UX principles. This is a great option if you're open to learning some interesting skills outside of a core UX design role.

- **Autonomy:** Little to no middle management means more autonomy over your work.
- **Learning:** Opportunity to learn about other disciplines, like branding, marketing, and graphic design.
- **Variety:** Every project is different based on the client.
- **Networking:** Work with a bunch of different brands, clients, and teams.

- **Specialization:** Wide variation in projects, so you might not be able to hone in on specific skills easily.
- **Relevance:** Work may often involve branding and marketing, and might not focus on UX design.

Freelancers

Freelancers are self-employed UX designers who are hired by clients for their independent services. Being a freelancer gives you a lot of freedom, and it's a great way for new UX designers to gain experience in the field and add work to their portfolio.

- **Schedule:** Set your own hours since you're self-employed.
- **Flexibility:** Can freelance while working another job or balancing competing priorities.
- **Autonomy:** Choose the work that you want to do.
- **Experience:** Build your portfolio, especially if you don't have a full-time UX job.

- **Structure:** No one to report to, which means you have to be responsible for getting work done on time.
- **Stability:** Less stable than working for a company or agency, since work is not always guaranteed.
- **Business:** Manage the logistics of your own business, such as filing taxes, billing clients, and more.
- **Mentorship:** Lack of readily available mentors since you're working by yourself.

Deciding where to work

Everyone's goals as a UX designer are different, so think about what's most important to you when choosing a place to work. Consider questions like:

- Do you enjoy a lot of structure and processes, or do you like to define your own work and schedule?
- Do you value working on a big team, or are you more comfortable working alone?
- Do you want to focus mainly on UX design, or are you interested in broadening your skill set?

Considering your career goals and how you work best will help you start to figure out the kind of company that might be the best fit for you. Good luck!

Who are my users?

In the field of user experience design, the "user" comes first. A **user** is a person who is trying to solve a problem and is looking for a product or service to help them solve it. The **user experience** is the journey that the user takes with that product or service. As a UX designer, your goal is to keep the user at the center of every decision you make, and to do that, you need to get to know your user.

Most of the initial UX research that you conduct at the beginning of the project will be focused on getting to know the characteristics of your users, their goals, and their pain points. Understanding the user empowers you to design experiences that are helpful or easy to use.

One of the key challenges of getting to know your users is avoiding taking a narrow view of the user, or making assumptions about what users need based on stereotypes. Users who seem to be different from one another might actually have shared wants and needs. Make sure to step back and get a clear picture of *all* your potential users–which often means that you'll need to specifically plan to address the needs of users who are often overlooked.

To reach as many users as possible, you'll consider questions such as these as part of your user research approach:

- Do my users have impairments or disabilities to consider–whether temporary, situational, or permanent?
- How familiar are my users with technology?
- How are my users accessing the product or service?
- Where and when are my users accessing the product or service?
- Have I considered all my potential users?

The goal for user research is to get the widest possible selection of potential users to include as research participants. Make sure to consider income level; demographic data such as age, gender, and ethnicity; educational background; and geographic location.

Do my users have impairments or disabilities to consider?

You might be surprised to find out that more than 1 billion people around the world have a disability, out of a global population of 7.8 billion. In the U.S., one in four adults identifies as having a disability. The term **accessibility** refers to the design of products, devices, services, or environments for people with disabilities. As a UX designer, it's important to keep users with disabilities in mind as you design features or new products. Designing for accessibility isn't an obstacle, but a way to get your products to as many users as possible.

Accessibility is about making products accessible to all people, whether they have a disability or not. Think about inclusive product features that increase magnification, like enlarged fonts. Or features that help everyone understand videos, like closed captions.

Throughout the rest of the certificate program, you'll learn more examples of how features that were initially designed for users with disabilities became universally used by non-disabled people as well. You'll also learn more about how to effectively apply accessibility principles to your designs.

How familiar are my users with technology?

User experience doesn't just focus on the experience of existing users, however. It also includes paying attention to the needs of people who are about to become users. Nearly a billion people, of all ages, all around the world, are getting online for the very first time.

When it comes to designing for this emerging population of potential users, their level of **digital literacy** is a key consideration. The American Library Association defines digital literacy as “the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills.” People with limited digital literacy might not be familiar with certain design patterns, calls to action, or icons that those of us with more online experience take for granted. For example, they might not know what “swipe” means in relation to a touchscreen. They may not even know what a touchscreen is. This can affect their confidence and willingness to explore new technology.

How are my users accessing the product or service?

It’s important to keep in mind that not all users will access your product or service in the same way due to the cost and availability of devices and internet services. These factors are often due to other broader and historical factors in the markets you might be designing for.

Some users might not have reliable or unlimited access to the internet. This might be because the data they have purchased has run out or because their network coverage is inconsistent or sporadic. As a UX designer, you should try to find ways to take the offline experience into account as well. For more examples of ways you can create a rich offline experience for your users, check out the article *Offline UX design guidelines* on web.dev.

Where are my users accessing the product or service?

In some cases, you might be designing a product or service intended for use by people in various locations around the world, which creates some additional considerations, like local languages and cultural norms. Keep in mind that cultures and norms are ever-changing as people integrate and recontextualize technology in their lives, so you’ll need to continue to research potential users to identify shifts in user problems, preferences, and usage patterns over time.

Users who speak languages other than the primary language of the product or service you’re designing might want or need to switch languages on their device depending on what they’re trying to accomplish. For example, a user might want to read in Hindi but type using the English keyboard. Or the user might encounter a concept that cannot be easily translated from one language to another. Designing a multilingual keyboard option, and using universally-recognized icons, like an icon with a local currency sign for a banking app, are just a few key ways UX designers can make it easier for users in different locales.

Key takeaway

Your goal as a UX designer is to solve a user problem by creating a design that makes every user feel like you designed the experience just for them no matter who they are, where they live, how much they earn, what their abilities are, or how highly they're educated. Gaining a comprehensive understanding of your user's context is an important place to start, and you're already on your way.

Throughout the rest of the certificate program, you'll learn more about the considerations discussed in this reading, dig deeper into user research methodology, and complete some practice activities to learn more about your users.

Resources for more information

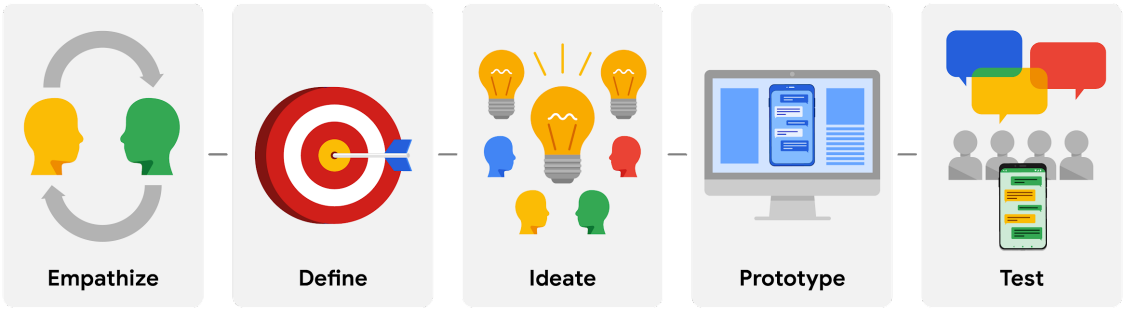
If you want to learn more about some top reasons why user research is important to the field of UX design, check out the article *What is user research, and what's its purpose?* on CareerFoundry.

Design Thinking: A UX design framework

In the world of UX design, a **framework** is a conceptual tool that provides guidance on the best practices and processes for solving problems and building solutions that solve the problems of real users. Frameworks provide structure for the design process and foster collaboration, which can spark innovations. Most UX designers follow a specific framework or process when approaching their work, from the first idea all the way through to the final launch of a product.

In this certificate program, you'll follow the **Design Thinking** framework to sequence the assignments that contribute to the designs that you'll create throughout the program. The Design Thinking framework is a user-centered approach to problem-solving that includes activities like research, prototyping, and testing to help you understand who your user is, what their problems are, and what your design should include.

The Design Thinking framework involves the following phases: empathize, define, ideate, prototype, and test.



Though it may sound like a linear process, the Design Thinking framework should be iterative, which means that you'll repeat certain phases as you refine your designs. For example, depending on the feedback you receive during testing, you might need to conduct additional research, brainstorm new ideas, or develop new prototypes.

Let's look at the five phases of the Design Thinking framework to learn more about which activities you'll perform during each one. Keep in mind that the Design Thinking framework as presented here is an idealized model for UX designers to follow, so you might see some variation in its implementation between different companies, teams, or projects.

Empathize

During the **empathize** phase, your primary goal is to learn more about the user and their problems, wants, and needs, and the environment or context in which they'll experience your design. The most important part of the empathize phase is to step away from your assumptions and guesses and let your research findings inform your decision-making in later design phases.

Your user research might include user surveys, interviews, and observation sessions, and you might also need to conduct some research on the competitors' products to determine how your user frames competitors' products as part of their daily life and daily problem-solving.

Define

In the **define** phase, you'll analyze your research findings from the empathize phase and determine which user problems are the most important ones to solve, and why. This will drive you toward a clear goal for the design of the product.

The most important outcome of this phase is a clear problem statement, which is a description of the user's need that your designs will address. You might also develop a value proposition, which is a summary of why your user would or should use the product or service that you're designing.

Ideate

After you land on a user problem and establish why it's an important one to solve, it's time for the **ideate** phase. The goal of ideation is to come up with as many design solutions as possible—don't settle for your first solution because the most obvious solution is not always the right one.

Ideation involves collaborative brainstorming with other members of your team to generate as many solutions as possible to a problem. This could include marketing, engineering, product management, or any other stakeholders for the product or service. During brainstorming sessions, you should explore all possible solutions. Don't focus on whether something is a "good" or "bad" idea, just collect as many ideas as you can. The important thing here is to keep this process judgment-free.

After brainstorming, you'll then analyze your potential solutions and start to make choices about which ones are the best options to pursue as prototypes. You might return to user or competitive research to help you narrow down your ideas, and you might also create user flows to illustrate how the user will interact with your solution.

Prototype and Test

After you have an idea of how to solve the problem, you're ready to enter the **prototype** phase, where your goal is to produce an early model of a product that demonstrates its functionality and can be used for testing. The **test** phase is critical to developing the right solution to address your user's problem, and an organized approach to testing can help you create exceptional user experiences.

Prototyping and testing are interconnected, which means that you'll test your designs at each stage of prototype development rather than waiting to test until after the working prototype is complete. If the design is too polished the first time you present it to users, you might not get as much feedback. Think about ways to include testing throughout the design process, so that you're iterating your designs based on user feedback instead of other reasons.

For example, you might test the concepts behind your design by presenting users with a simple sketch, wireframe, or a sitemap. Taking what you learned, you might iterate on that design to a more detailed design on paper (known as a low-fidelity prototype) and conduct another round of user testing. At some point, you'll iterate the design again into a working, interactive model using a software program (also known as a high-fidelity prototype) and test that as well. You might also consider testing more than one prototype at the same time to get feedback on multiple solutions, or testing the same prototype on multiple platforms, such as a laptop, tablet, and smartphone.

The goal of testing prototypes is to continue to refine the prototype as you gain insight into whether the design for your product or service is easy to use and solves the user's problem.At some point, you'll finalize a prototype, and then you'll provide it to developers, who will then turn your design into a product.

Key takeaways

The Design Thinking framework is only one type of framework that UX designers use to organize their approach to designs, often based on the product they're designing and the organization they're working for. No matter which frameworks you use in your career, they all have a few core principles in common:

- Focus on the user.
- Create solutions that address the user's problems.
- Collaborate with teammates across departments.
- Validate your designs.
- Iterate as needed to design the right user experience.

Throughout the rest of the certificate program, you'll learn more about each of the phases of the Design Thinking framework and complete practice activities to gain more experience with designing user experiences end-to-end.

Resources for more information

For more about the Design Thinking framework, check out the following resources:

- *Design Thinking 101* by Nielsen Norman Group
- *The Design Thinking Process - An Introduction (2021)* by CareerFoundry
- *UX Design Process: Everything You Need to Know* by Adobe
- *What is Design Thinking?* by The Interaction Design Foundation

Optional - Additional resources on designing for accessibility

You're starting to understand the importance of accessibility–designing products, devices, services or environments for people with disabilities. Accessible designs allow users of diverse abilities to navigate, understand, and use your product.

One way to better empathize with your users who identify as having a disability is to experiment with assistive technologies–which includes any product, equipment, or system that enhances learning, working, and daily living for people with disabilities.

When you're designing digital experiences like websites and apps, it's important to become familiar with the types of assistive technologies (ATs) that people might use to access it. Nearly all devices–especially computers, tablets, and smartphones–on the market today include some type of accessibility support. As a UX designer, it'll be important to become personally familiar with many types of the ATs covered in the video Assistive technology, so that you can provide easy-to-use and enjoyable user experiences for those users who depend on them to experience your product.

Different device types and operating systems have different accessibility features available, and those features are updated all the time! The best way to learn about what's available on the device you're using right now is to check the Help. Here are a few links to get you started:

- Google Accessibility is a YouTube playlist that includes general information about various assistive technologies and how-to videos for using accessibility features in Chrome and on Chromebooks. If you're using a Chromebook, there's some additional guidance in the Chromebook Help. If you're an Android user, you can learn how to use accessibility features in the Android Accessibility Help.
- Microsoft's guide for accessibility features on Windows includes descriptions of all available features, along with links to how-to content for using accessibility features on a Windows device.
- For Apple products, there's Get started with accessibility features on Mac and the Accessibility Support page for iPhone.

Learn more about accessibility from Google

If you're ready to learn more about accessibility, check out this three-part series from Google UX researchers about building globally accessible products.

1. Designing for Global Accessibility, Part I: Awareness is everything outlines how you can increase your awareness of accessibility issues and check your assumptions about users.
2. Designing for Global Accessibility, Part II: Context matters explores why it's critical to consider logistics during the design process, in order to expand your app's usability and usefulness.

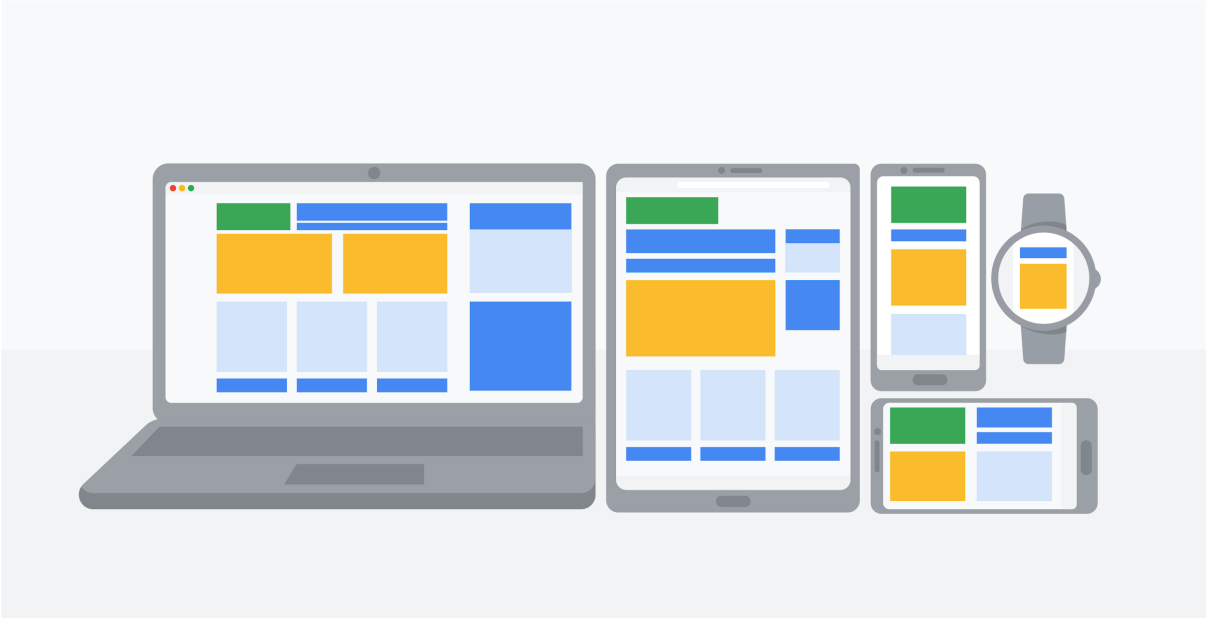
3. Designing for Global Accessibility, Part III: Be inclusive by default discusses how UX designers can make tactical decisions to create inclusive apps.

You can also start to familiarize yourself with design principles that keep accessibility front-and-center by reviewing the Accessibility Guide for Google Material. Don't worry if the topics outlined in this guide are advanced or unfamiliar. We'll cover some key considerations for accessible designs in more detail as you progress through this certificate program. For now, simply focus on laying a foundation for designing with accessibility in mind. As you progress through the certificate program, you'll complete activities that will continue building your knowledge and experience with designing for accessibility.

Designing cross-platform experiences

When designing a new product or feature, it's important to think about the different types of platforms that the design will be experienced on. As a refresher, a **platform** is the medium that users experience your product on. Some common platforms are:

- Desktop computers
- Laptop computers
- Mobile phones
- Tablets
- Wearables, like smart watches
- TVs
- Smart displays



A product might be experienced on countless different platforms, but desktop computers, laptop computers, and mobile phones are the most commonly used platforms for interacting with apps and websites. These are the platforms that you'll spend the most time focusing on during this certificate program. In this reading, you'll learn about key considerations when designing for different platforms to help you get started.

Screen size

The first consideration when designing for various platforms is adjusting design elements and features to fit different screen sizes. For example, you have a lot of screen space when you design for desktop and laptop computers. But when you design for smaller screens, like mobile phones, you have to carefully decide which parts of the design you'll prioritize including in the limited space. This means making every word, icon, and image count!

In the first five courses of this certificate program, you will design an app for a mobile phone. In the sixth course of the program, you will design a responsive website, which allows the design of a website to change automatically depending on the device's screen size. This means you'll learn a lot more about designing for different screen sizes later in the certificate program, so stay tuned.

Interaction

In addition to the size of the screen, you also need to consider the way users interact with each platform and how those interactions might affect your design decisions.

It’s also critical to consider accessibility when developing your designs at each point. Different groups of people will interact with your product in different ways, like using a screen reader, closed captioning, or a switch device. To get started, it’s helpful to try using some of these technologies yourself, in order to understand how people with disabilities might interact with your product on different platforms.

Content layout

In the world of UX design, layouts refer to the way that information is organized on the screen. For example, when designing for desktop or laptop computers, you have the advantage of working with a familiar, standardized size: landscape (horizontal) mode. The screen is wide, content can be laid out in columns, and there’s much more flexibility to design.

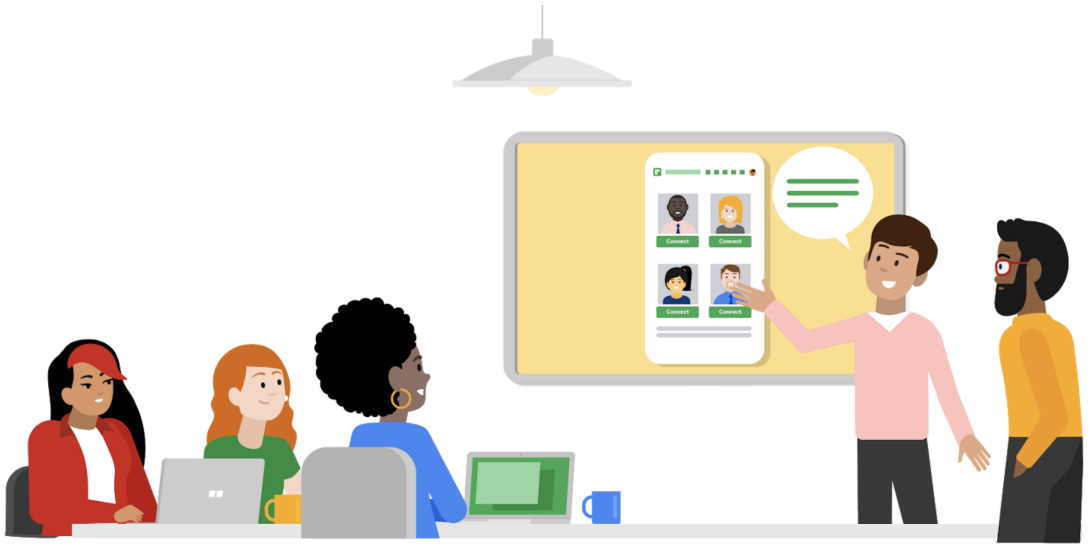
In contrast, mobile phone content is usually laid out in portrait (vertical) mode, which is ideal for scrolling. In addition, mobile phones often allow users the option to use landscape (horizontal) mode by rotating their device. Implementing this in your designs requires more work from you as a designer, but provides users with a wider range of options.

Consider the layout of content on a couple more platforms: tablets combine both the desktop and mobile phone user experience, which means you can incorporate aspects of desktop and mobile phone content layouts in your designs. Smartwatches tend to have compact square or rectangular screens, offering very little digital real estate to lay out content.

Functionality

There are a lot of reasons why users might choose one platform over another, but functionality and the kind of tasks they want to complete is a huge driver. Your designs for each platform will likely vary based on how and when you expect users to need the product.

Optional - Learn more about design sprints



If you're looking for a deeper dive into design sprints, why not take it up with the source? The Google Design Sprint Kit is an open-source resource for anyone who is learning about or running design sprints. The website includes case studies about design sprints that have solved all kinds of challenges, templates for decks and activities, and more.

In addition, check out this article on Medium about the importance of design sprints. Or, to be really inspired, read the book Sprint by the creator of design sprints, and former Googler, Jake Knapp. Pay special attention to the chapters "Start at the End" to get an overview of how to establish long-term goals for a sprint, and "Liftoff" to motivate you to get started with your first sprint. Happy reading!

An entry-level designer's role

If you're just starting out as a UX designer, you might also be curious to learn about an entry-level UX designer's role in a sprint. We've got the inside scoop for you! Check out this post from the INKONIQ BLOG about how a design sprint works at Google and this article on Medium about what one UX designer learned from their very first design sprint.

Congratulations on getting the hang of all things design sprints! Use these resources as you continue to explore the stages and purpose of this key part of UX design work.

Common retrospective questions

Every design sprint is an opportunity for your team to learn something new. This is especially useful for entry-level UX designers joining a design sprint for the first time.

During a design sprint, the focus is on:

- Understanding the design challenge
- Ideating solutions
- Deciding which solutions to build
- Prototyping a few solutions
- Testing those prototypes

Immediately following the design sprint, your team should hold a retrospective. A **retrospective** is a collaborative critique of the design sprint. The goal of a retrospective is to make sure everyone who took part in the sprint has the chance to give feedback and think about opportunities for improvement.

The key questions to ask during a retrospective are:

1. What went well?
2. What can be improved?

Answering these questions will help you work better as a team and as an individual. Make sure everyone feels empowered to share their experiences, and that personal identifiers, like race or gender, don't prevent members from being honest. Before the retrospective begins, tell the group that any feedback provided will be used to reflect on the experience and improve the process for the next sprint.

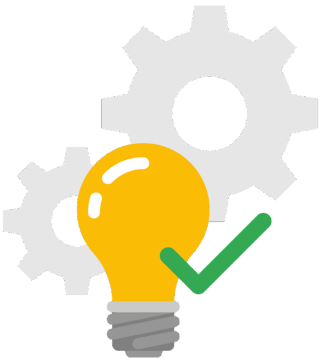
What went well?

Start the retrospective by discussing the parts of the design sprint that were successful and areas where the team did well. Maybe a new process was created that could be applied to future sprints. Or maybe the addition of a new digital tool enhanced the team's productivity. Analyze your team's wins, and think about how they could be applied to future sprints.

Questions you might ask during this part of the retrospective include:

- Which tools saved you the most time and effort?
- When did you feel the most satisfaction?
- What helped you make your best contribution to the team during this sprint?

This is also a good time to acknowledge a team member's strong performance. Celebrating successes builds relationships and increases cohesion and harmony within the team!



What can be improved?

After highlighting everything that went well, it's time to shift gears and think about areas for improvement. Your team will want to know what went wrong, so that you all can do better next time.

Encourage everyone to participate in sharing areas for improvement. You might even take turns going around a circle and adding challenges to a shared list. If anyone is nervous about speaking up, invite each person to write their thoughts anonymously on individual sticky notes. Then, all of the improvements can be reviewed together. This eliminates concerns about causing offense and reduces the chance of groupthink. **Groupthink** can occur in a group discussion when one person shares an opinion and everyone immediately agrees with the opinion, instead of sharing their own feelings about a topic. Groupthink prevents each person from having an equal say, and it might mean certain areas for improvement are overlooked.

Consider each phase of the design sprint to structure the feedback: understand, ideate, decide, prototype, and test. At what point were there missteps? What caused those challenges? Share your perspective if a phase or two didn't go according to plan.

Questions you might ask during this part of the retrospective include:

- What went wrong that caught you off guard?
- Which problems came up the most often?
- When do you think we experienced the biggest challenge as a team?

Then, examine the sprint's outcome or final product, and ask questions like:

- Did the team overestimate or underestimate the work required to complete the design?
- Did an external factor derail your productivity?
- And most importantly, does the final design actually solve the user problem?

Identify ways that the team could have ended up with a better solution.

Keep in mind, retrospectives are about empowering, not shaming. This is not the time to call out an individual for poor performance. If you have issues with a team member's work, it's best to address it with that person privately, not during a team-wide retrospective.

Lessons learned

By the end of the retrospective meeting, your team will have a better understanding of what went well and what could be improved. Naturally, you'll want to take lessons learned into your next design sprint.

Before your next sprint, review the conclusions you reached at the end of the last retrospective. Your conclusions should inform how you conduct the next sprint. Perhaps you need to include a more diverse team, allow more time for ideating, or test with additional users before moving forward with a design.

Questions you might ask include:

- What did you discover during the sprint that you're still wondering about?
- How could the current process be holding the team back from creating better solutions?

Takeaways

Remember: Speak up and share your suggestions for how the next design sprint could be better. Don't be afraid to suggest anything you think will improve the project or next sprint. The only bad suggestion is the one not shared!

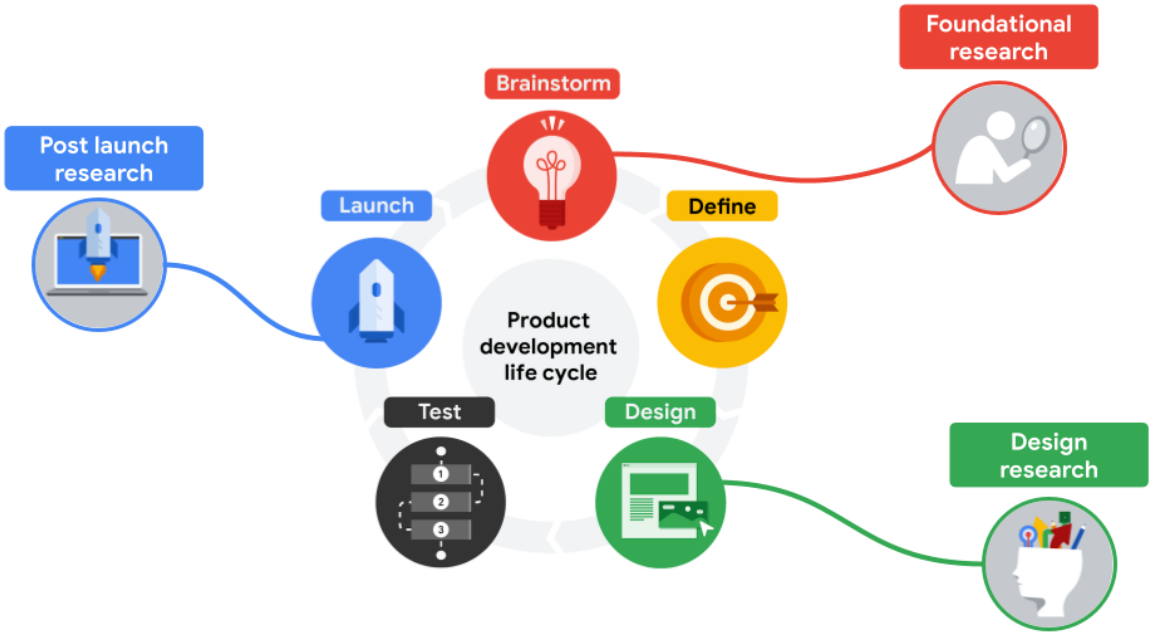
Learn more about UX research

There are two key parts to every UX design project: conducting research to learn about the users you're designing for, and gathering feedback about their perspectives. UX design is all about putting the user first, and research helps designers understand those users.

UX research focuses on understanding user behaviors, needs, and motivations through observation and feedback. Your product design should be built upon research and facts, not assumptions. UX research aligns what you, as the designer, *think* the user needs with what the user *actually* needs.

Remember the product development life cycle from an earlier course of the program? The **product development life cycle** has five stages — brainstorm, define, design, test, and launch — that take an idea for an app, website, or product to its launch.

Let's check out how research fits into the product development life cycle.



Foundational research

Foundational research is always done *before* you start designing. Within the product development life cycle, foundational research happens during the brainstorm stage (stage one) to help you empathize with users, understand their needs, and inspire new design directions. During this stage, you will also make personas and user stories, which you'll learn about soon.

In foundational research, your goal is to figure out what the user needs and how to address those needs with your product. Strong foundational research can contradict your personal perspective on what a good solution might be.

Questions you might consider during foundational research include:

- What should we build?
- What are the user's problems?
- How can we solve those problems?
- Am I aware of my own biases, and am I able to filter them as I do research?

There are lots of research methods for conducting foundational research, but many of them are based on observations. Common foundational research methods include:

- **Interviews:** A research method used to collect in-depth information on people's opinions, thoughts, experiences, and feelings. You'll often conduct interviews of your target users themselves.
- **Surveys:** An activity where many people are asked the same questions in order to understand what most people think about a product.

- **Focus groups:** A small group of people whose reactions are studied. For example, your focus group might bring together eight users to discuss their perspectives about new features in your design. A focus group is usually run by a moderator who guides the group on a certain topic of conversation.
- **Competitive audit:** An overview of your competitors' strengths and weaknesses. You'll conduct your own competitive audit later in the course, so you will understand this research method well!
- **Field studies:** Research activities that take place in the user's context or personal environment, rather than in an office or lab.
- **Diary studies:** A research method used to collect qualitative data about user behaviors, activities, and experiences over time. Often, a user will log, or diary, about their daily activities and provide information about their behaviors and needs, which can help inform your designs.

Design research

Design research is done *while* you design. Within the product development lifecycle, design research happens during the design stage (stage three) to help inform your designs, to fit the needs of users, and to reduce risk. Each time you create a new version of your design, new research should be done to evaluate what works well and what needs to be changed.

In design research, your goal is to answer the question: How should we build it?

The amount of design research you conduct will vary depending on where you work and what you're building. The most common method used to conduct design research is a **usability study**, which is a technique to evaluate a product by testing it on users. The goal of usability studies is to identify pain points that the user experiences with your prototypes, so the issues can be fixed before the product launches. You'll conduct your own usability study in the next course of this certificate program.

Additional research methods that might be used to conduct design research include:

- **A/B testing**: A research method that evaluates and compares two different aspects of a product to discover which of them is most effective. For example, you might have users evaluate two layouts for the homepage of your app to find out which layout is more effective.
- **Cafe or guerrilla studies:** A research method where user feedback is gathered by taking a design or prototype into the public domain and asking passersby for their thoughts. For example, you might sit in a local coffee shop and ask customers if they would be willing to test your app design for a couple of minutes and provide feedback.
- **Card sorting:** A research method that instructs study participants to sort individual labels written on notecards into categories that make sense to them. This type of research is largely used to figure out the information architecture of your project, which we'll discuss in the next course of the program — Course 3: Build Wireframes and Low-Fidelity Designs.

- **Intercepts:** A research method that gathers on-site feedback from users as they engage in the activities being researched. Intercepts are often conducted in the field, so this type of research is often considered a subset of field research. An intercept study can provide quick, high-level feedback.

Post-launch research is done *after* the design is complete and your product has launched. Within the product development life cycle, post-launch research happens after the launch stage (stage five) to help validate that the product is meeting user needs through established metrics.

In post-launch research, your goal is to answer the question: Did we succeed? This research will tell you how your final product is performing based on established metrics, such as adoption, usage, user satisfaction, and more.

You should use research methods that give insight into what the user thinks of your product and if their experience using your product aligns with how you intended it to function. Research methods you might use to conduct post-launch research include:

- **A/B testing**
- **Usability studies**
- **Surveys**
- **Logs analysis:** A research method used to evaluate recordings of users while they interact with your design, tools, etc.

The key to a user-focused product: Research

Research is crucial to creating a product that satisfies users. As an entry-level designer, it might be tempting to assume what the user needs based on your own experience, but as you know: The user comes first. Always make sure that your opinions are backed up by your research. You should get feedback from your users before, during, and after you design!

Learn more about research methods

Understanding your users is one of the most essential parts of UX design. You've already learned about the problems that can come up when designers make assumptions about their users and their needs. So how do you avoid making those assumptions? By doing research! In this reading, you'll explore some common research methods used by UX designers.

Types of research

There are two ways to categorize research: *who conducts* the research and the *type of data* collected.

The first way to categorize research is based on who conducts the research: primary research and secondary research.

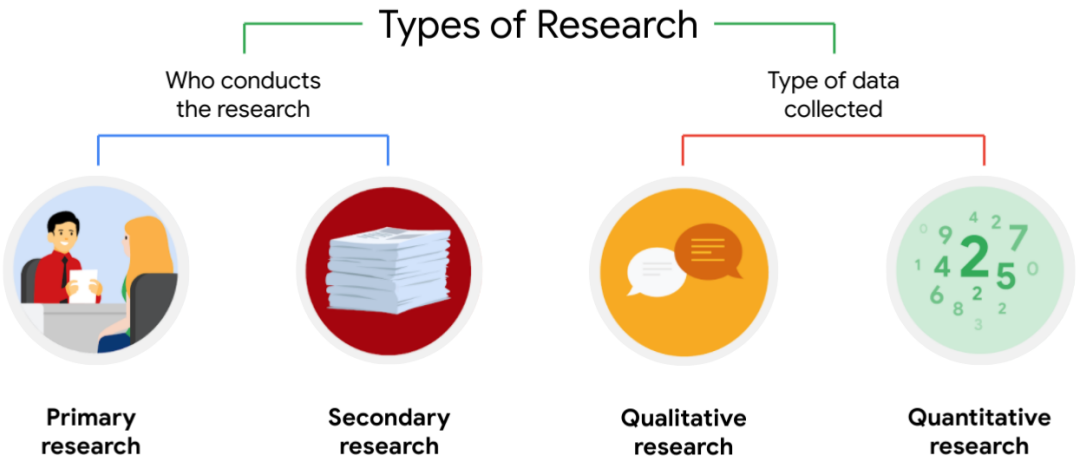
Primary research is research *you* conduct yourself. Information from direct interactions with users, like interviews, surveys, or usability studies, are considered primary research.

Secondary research is research that uses information *someone else* has put together. For example, using information from sources like books, articles, or journals is considered secondary research.

The second way to categorize research is based on the type of data collected: qualitative or quantitative.

Qualitative research is primarily collected *through observations and conversations*. Qualitative research is based on understanding users' needs and aims to answer questions like "why" or "how did this happen?"

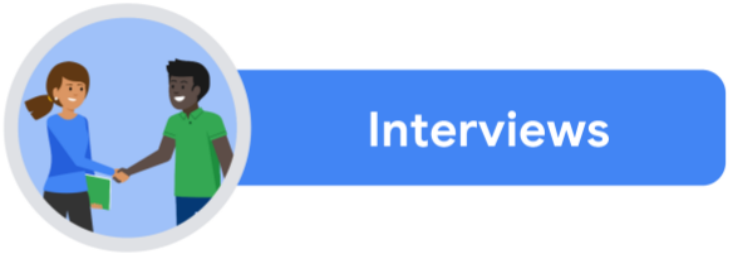
Quantitative research focuses on data that can be *gathered by counting or measuring*. Quantitative research is based on numerical data that's often collected from large-scale surveys. This type of research aims to answer questions like "how many?" and "how much?"



All four of these types of research can intermix. Primary and secondary research can be both qualitative and quantitative. For example, an interview is *qualitative* research. An interview conducted by you is *primary* research. If you review an article about an interview conducted by someone else, it's *secondary* research. It's important to be able to identify the difference between these types of research because the data you collect forms the basis of your design decisions.

Primary research methods

Now that you understand the different types of research, let's review some common primary research methods for gathering information.



Interviews are a research method used to collect in-depth information on people's opinions, thoughts, experiences, and feelings. Interviews can be performed one-on-one or in a group setting, like a focus group.

Interviews can take the form of qualitative and quantitative research. A qualitative research method includes open-ended questions that require participants to explain their answers by providing more details. A quantitative research method includes only close-ended questions, like questions that require only “yes” or “no” responses or set multiple choice questions.

Best practice is to conduct at least five user interviews during your research. As you conduct your interviews, you’ll start to find similarities in the feedback that users provide about what works and what doesn’t work about your product. This is exactly the kind of feedback you want!

Advantages

- You’re better able to understand what a user thinks and why.
- You can adjust your questions or refocus the discussion based on the user’s answers.
- You have the ability to ask follow-up questions in real time.
- You have the ability to ask questions specific to a user’s needs.
- You’ll receive direct suggestions from the user.

Disadvantages

- It’s time-consuming to interview each user.
- It’s expensive to pay participants and to rent space for the interviews.
- The sample sizes are smaller, due to time and money constraints.
- Group interviews can be affected by the bandwagon effect, or going along with the group’s opinion instead of thinking creatively, which can discourage open discussion by people who have an opinion that doesn’t align with the majority of the group.

If you want to learn more about interviews, check out an article about user interviews from the Nielsen Norman Group.

A **survey** is an activity where many people are asked the same questions in order to understand what most people think about a product. Surveys are a great way to measure the success of your

product, during development and after it's launched. For example, sending surveys after a product is released can help you measure the effectiveness of your product and provide a foundation for future improvements.

You can design surveys to include open-ended questions for qualitative research, which allow research participants to clarify their survey responses, as well as close-ended questions for quantitative research, which generate numerical data.

Advantages

- You can learn more from a larger sample size.
- You are able to gather results and insights quickly.
- Surveys are usually inexpensive because they don't take as much time for participants to complete, and they can be done remotely.

Disadvantages

- Surveys often do not allow for in-depth feedback; most questions will have responses drawn from a set of multiple-choice answers.
- There are some types of research questions that won't work in a survey format.
- Surveys usually do not allow for personalization.

If you want to learn more about surveys, check out usability.gov's article about online surveys.

A **usability study** is a technique used to evaluate a product by testing it on users. Usability studies help demonstrate if a product is on the right track or if the design needs to be adjusted. There are lots of ways to test usability, both in person and online. It's a good idea to record your usability sessions, either audio or video, so you can reference the user data as you make design decisions later on in the process.

Qualitative research is based on observations, and a critical part of conducting usability studies is observing how participants interact with the product you've designed. Focusing on qualitative research during usability studies can generate more personal insights by assessing the behavior of users as they experience the product. Quantitative research can also be used when conducting usability studies to understand participants' impressions of the product.

Advantages

- You can learn from first-hand user interaction and observation.
- Usability studies can challenge your assumptions about your product by demonstrating a completely different result than you were expecting.

- Users can provide in-depth feedback.

Disadvantages

- Usability studies only measures how easy it is to use a product.
- This type of research can be expensive, especially if it's conducted in person.
- There can be differences between a "controlled" usability study in a lab versus how a user experiences the product in their real life.

If you want to learn more about usability tests, check out the Nielsen Norman Group's article on usability testing.

Secondary research methods

Secondary research can be completed at any phase of the project, since you're using information from outside sources. In other words, secondary research is not a direct result of your product or the user you're designing for. The information you discover during secondary research might lay a foundation for your primary research, so you have a better idea of where to focus your efforts. Or, secondary research might supplement the findings from your primary research for a project, to reiterate or strengthen your conclusions.

Advantages

- Secondary research is generally cheaper and faster than primary research. This means you'll save time and money.
- You can often find secondary research via online searches and subscription research publications.
- Secondary research can be a good supplement to findings from your primary research.

Disadvantages

- You will not learn from any first-hand user interaction.
- You will not receive user feedback specific to your product.
- Secondary research can be misleading and generalizing if not done appropriately.

If you want to learn more about secondary research, check out an article about secondary research from Formplus.

Research in practice

As you move forward in your UX design career, you'll likely get to experience using several different types of research methods. Knowing the advantages and disadvantages of each method, and when to use each, can make your research more effective and can improve your product's design.

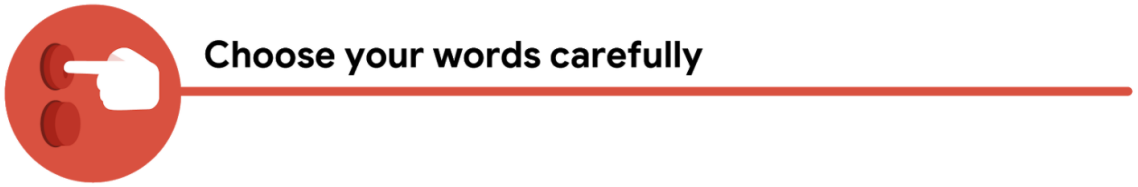
If you want to explore research further, check out this user-experience research methods article from NN Group. It will guide you through choosing the best research method for you out of 20 popular options.

Learn more about bias in UX research

The human brain is an incredible processing machine, and it can store an amazing amount of information. One way brains are able to store so much information is by creating mental shortcuts based on repeated patterns. These shortcuts allow humans to relate and group information together for quicker processing. But, these repeated patterns of thinking can lead to inaccurate or unreasonable conclusions that are **biased** — favoring or having prejudice against someone or something. Biases can seriously impact your user research and negatively influence the design of your final product. So, let's explore how bias can affect your work as a UX designer and how to combat it during your research.

Preventing bias in data collection

It's important to note that everyone has biases. It's just a natural part of being human. Being able to recognize your own biases and prevent them from affecting your work is what really matters. As a UX designer, you'll need to know how to anticipate, identify, and overcome biases in your research, in particular.



Choose your words carefully. While conducting research, it's important to use words that don't lead the user in one direction or another. Of course, as a designer, you're going to be partial to the designs you've created, and you'll likely assume that users will appreciate them too. That's why you designed them! But when asking users questions about their experience using your product, you don't want them to answer in a particular way just to please you. Choosing leading words can cause the **framing effect**, where users make a decision or choice based on the way information was presented to them.

This is especially critical in usability studies. For example, imagine a participant is testing your designs. You ask the participant: "Do you like or dislike the improved layout of these buttons?" Because you used the word "improved," the user will most likely reply positively. But, this isn't very useful feedback because you framed the question in a way that led the participant to respond accordingly. To improve your product, you need *honest* feedback.

Instead, a better way to frame the same question is: "Explain how you feel about the layout of the buttons." This phrasing allows the user to come to their own conclusions without any outside influence, which will give you better data about their thought process and experience.

Foster independent thinking

Foster independent thinking. Group interviews can be affected by the **bandwagon effect**, or going along with the group's opinion instead of thinking creatively, which can discourage open discussion by people who have an opinion that doesn't align with the majority of the group.

For example, imagine you're conducting research with a group of five participants. You ask each person in the group to share their thoughts one at a time about a particular product design choice, like the placement of a button on the home page. By the time the last person shares their thoughts, their feedback will be affected by all of the answers that were shared before them. To combat the bandwagon effect, ask participants to write down or record their thoughts before discussing as a group.

Avoid specific language

Avoid specific language. It's important to be mindful about the types of questions you ask users and how those questions are framed. You'll need to be careful to avoid **confirmation bias,** which is trying to find evidence to prove a hypothesis you already have.

Confirmation bias is particularly prevalent in online surveys. For example, imagine that you're conducting an online survey with a large group of participants. One of your survey questions is: "How do you use our product?" As the designer, you have a few ideas about how you *think* people use your product, so you provide four options with specifically worded language that the participant has to choose from. If none of the options you've provided apply to the user, they can't select "other" or skip the question, so they'll be forced to choose one of the multiple-choice answers that doesn't match their actual experience. That means you'll end up with false information that skews your research data and potentially provides incorrect evidence for a hypothesis you already had.

Remember, in a survey, you want measurable results, which is known as quantitative data. You can reframe the question in your survey to ask participants to rate their experiences using the product, which will be a more accurate way to gauge how they felt about using it.

Limit the guidance you give users

Limit the guidance you give users. Everyone learns and thinks in different ways. When you're conducting any type of UX research, you have to be cautious to avoid experiencing

any **false consensus**, which is the assumption that others will think the same way as you do.

If you're conducting a usability study, some of the participants will not follow the product's user flow in the way that you might expect. For example, a user might click through the menu, select a folder, and then select a subfolder to complete a task you assigned them, when there's actually a simple hyperlink on the homepage that could have saved them time. In addition, some participants may use assistive technology to navigate the product and might follow an entirely different flow.

It's important to let participants follow their own paths through your product, without interrupting them. Interrupting a participant while they're experiencing your product will deprive you of useful data that can help you understand how to improve your designs. Instead, ask participants to narrate or break down their user journey with your product, as they move through the flow. This will allow you to better understand their thought process as they navigate through your designs.

Consider users' tone and body language

Consider users' tone and body language. You'll work with many different users and participants throughout your UX career, and part of your job will involve interpreting their nonverbal cues, like vocal tone and body language. To avoid experiencing **implicit biases**, which are based on the collection of attitudes and stereotypes you associate with people without your conscious knowledge**,** it's important to clarify when you think you're getting mixed signals from a participant.

For example, imagine you're conducting a one-on-one interview, and the participant has their arms crossed over their chest. This can be interpreted as a sign of feeling defensive or insecure, which might contradict the positive feedback they are sharing verbally about your product. This is a great time to ask the participant questions, like "Is any of this making you uncomfortable?", which can encourage them to explain that it's cold in your office and they're just trying to warm themselves up. Always ask questions if you're unsure about the intention of a user's tone or body language!

For this feedback process to work, however, it's important to make sure participants are comfortable sharing their thoughts with you. Before the research begins, ask participants about themselves or make light conversation. Starting with easier questions can help reduce anxiety or awkwardness throughout the study.

Be careful of your own body language and reactions

Be careful of your own body language and reactions. You also have to be mindful of your *own* tone and body language while interacting with participants. **Social desirability bias** can happen when a participant answers a question based on what they *think* you want to hear. If you ask a question to a participant, and they notice you exhibiting a visual or audible clue that suggests your own opinion about the question, they might answer in a way that they think will please you.

For example, imagine you're describing a feature of the app you've designed that really excites you, and your tone of voice changes. If this happens, it's likely that the participant won't be honest about their negative opinions of the feature, since you're so positive about it. If you want the data you collect to be useful, the user has to feel comfortable sharing their true, unfiltered feelings about the product. It's your job to guide them through the process without accidentally influencing their answers. One way to do this is to reassure participants that their answers won't hurt anyone's feelings and that you really want to hear their honest opinions in order to improve your work.

Plan your research effectively. Tight deadlines are inevitable. But as a UX designer, it's essential you get enough time to recruit the right users for your research. **Availability bias** occurs when you rush the user recruitment process or skip screener questions to attract a bigger pool of users, even if they don't fit the qualifications or characteristics that you've already determined are present in your ideal user.

The research that you collect is vital to your product design process. So interviewing users that don't fall under your personas won't give you the data you need to improve your designs. If you're having trouble recruiting the right users before your deadline, offer a better incentive for participating in your study, adjust your recruitment strategy, or ask your project manager for more time. Don't just take any user who's available.

Remain open minded. One more tip: When you're conducting research, you have to work hard to treat all information equally to avoid both **primacy bias,** which is remembering the first user more than others, and **recency bias**, which is most easily remembering the last thing you heard. To help combat these biases in your own research, it's helpful to space out the scheduling of interviews, ask your colleagues to join you during interviews to provide additional opinions, and take careful notes.

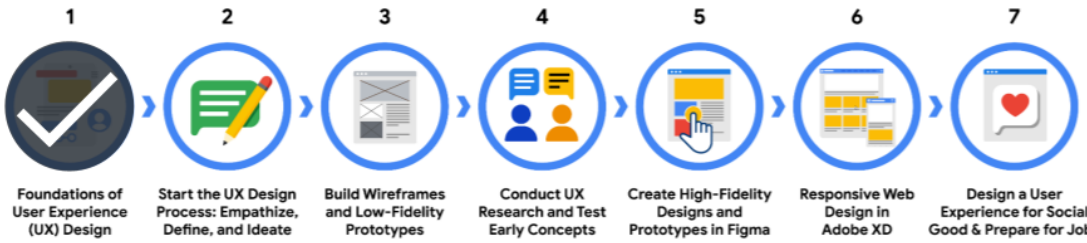
Combating bias as a UX designer

Although having biases is normal, it's essential to try to eliminate bias from your research process to get the most accurate understanding of your users' needs. Knowing the types of biases that exist and how you can avoid them will help you recognize when it's happening, so you're already off to a great start!

If you'd like to learn more about biases in UX research, check out this article on overcoming cognitive bias in user research from Design at NPR.

Start the next course

Congratulations on completing Course 1 of the Google UX Design Certificate!



To make continuing with the certificate program easy, here is a link to Course 2: Start the UX Design Process: Empathize, Define, Ideate. You may need to enroll in the next course, if you have not already.

In Course 2, you will complete the first steps of the design process for a project that you'll be able to include in your professional portfolio. You will learn how to:

- Empathize with users and understand their pain points
- Define user needs using problem statements
- Come up with lots of ideas for solutions to those user problems

Keep up the great work!