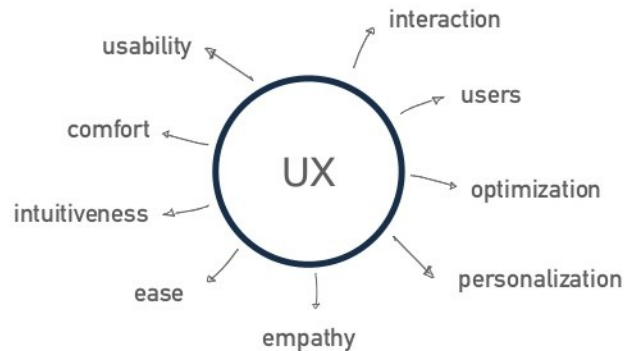


# User Experience (UX) / User Interface (UI) Design

## WHAT IS UX?

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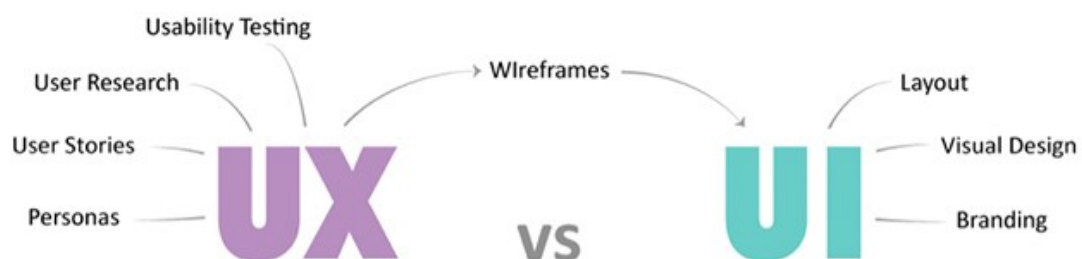


As defined by the US Department of Health and Human from *usability.gov* – User experience (**UX**) focuses on having a deep understanding of users, what they need, what they value, their abilities, and their limitations. It also considers the business goals and objectives of the group managing the project. **UX** best practices promote improving the quality of the user's interaction with and perceptions of your product and any related services.

The responsibility of the **UX** designer is to step through the entire platform to perform each step and analyze the logical flow. This research can be based on best practices, user profiling and paper prototyping. After performing their tests, they will identify the verbal and non-verbal issues, refine the application, and then iterate to create the best user experience possible.

As also defined by the US Department of Health and Human from *usability.gov* – User interface (**UI**) focuses on aesthetics of a site and its related materials by strategically implementing images, colors, fonts, and other elements

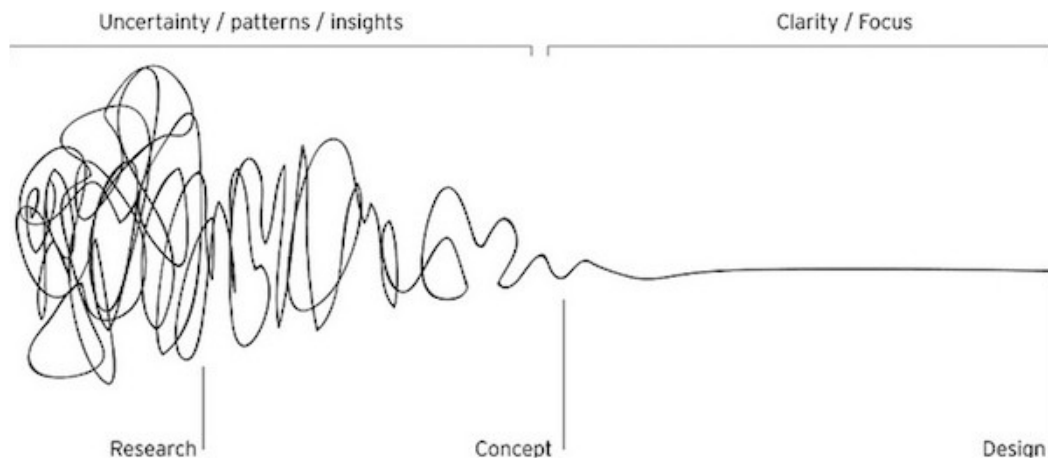
Furthermore, from Emil Lamprecht on [blog.careerfoundry.com](http://blog.careerfoundry.com), User Interface (**UI**) Design is responsible for the transference of a brand's strengths and visual assets to a product's interface as to best enhance the user's experience. **UI** Design is a process of visually guiding the user through a product's interface via interactive elements and across all sizes/platforms. User Interface (**UI**) Design is a digital field, which includes responsibility for cooperation and work with developers or code.



## Documentation

### Design documentation

from <https://designmodo.com/ux-documents/>



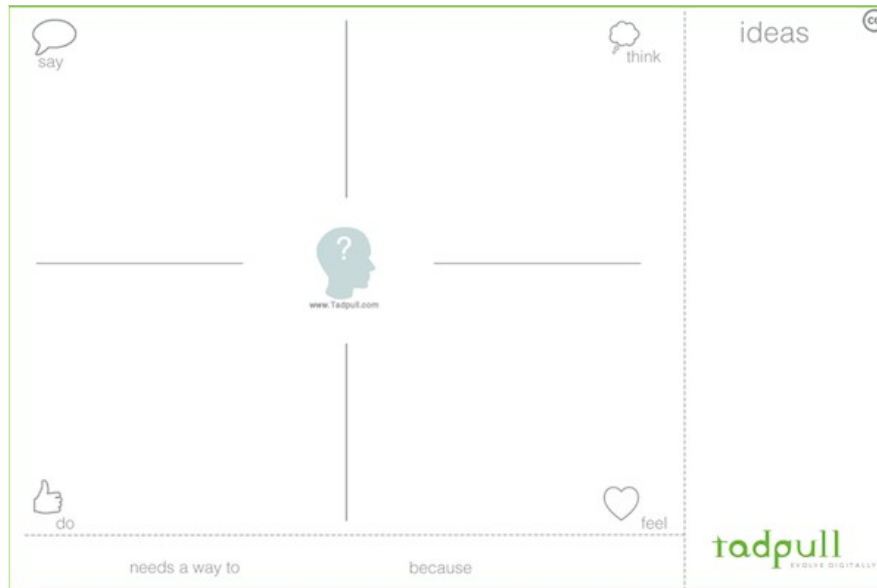
### 1. Persona

Once you have your research, you're able to construct an actual persona document. Each persona (as shown above from our template in UXPin) contain the following:

- 1.1 Photo — Almost every persona includes an image, usually a stock photo. Giving your persona a face greatly helps in thinking of them as a real persona. Choose a realistic photo, so leave out any celebrities.
- 1.2 Profile — Basically, you'll want to put all the general demographic information here — name, age, etc.
- 1.3 Personality — There is a lot of diversity in this category, depending on the company. It could be a detailed narrative delving into their psyche, or nothing more than a few keyword characteristics like "intelligent" and "ambitious."
- 1.4 Platforms — Which platforms do your personas use? How familiar are they with each? Which do they prefer and avoid? This is a great place to solidify their webographics.
- 1.5 Goals (Motivations) — Here's where you include the 3 goals discussed in the tips section: life goals, experience goals, and end goals. Remember that end goals are the most important.
- 1.6 Influences — What other brands and products influence this persona? This will factor heavily into their expectations of your site, personal preferences, and decision-making/behavior.
- 1.7 Likes & Dislikes — Another way to flesh out the persona, this section can be a practical quick-reference guide to optimizing your design for a specific user. Make a list of elements the user would appreciate, and another list of items that would frustrate or annoy them.
- 1.8 Personal Quotes/Mottos — While completely optional, including some personal quotes and life mottos will help you get inside the head of your persona, and therefore your users.

## 2. Empathy Map

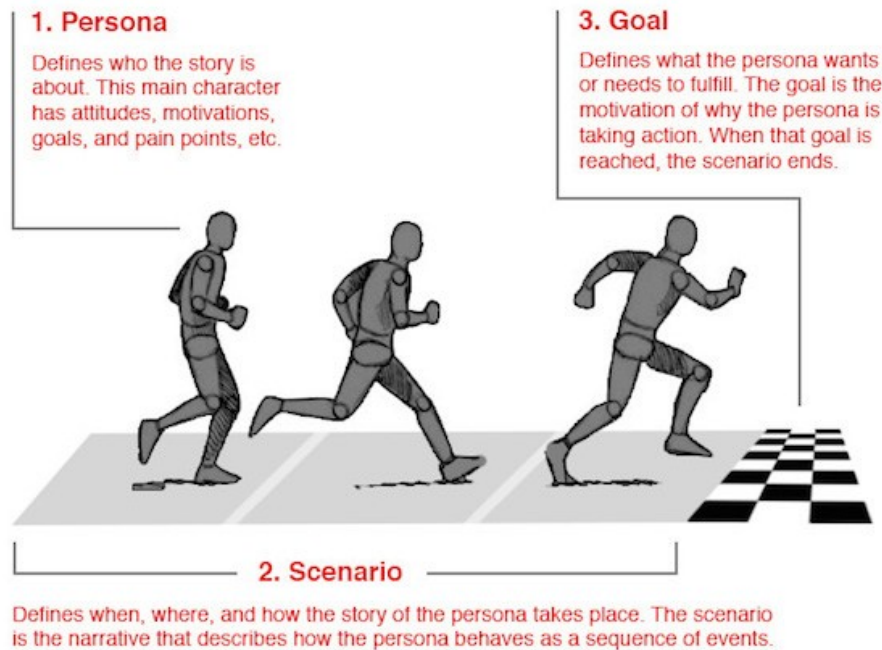
Like lightweight versions of personas, empathy maps can be made more quickly and easily in case you're short on time or resources. Empathy maps strip away the personalities of the persona, and focus only on how the user feels in a given situation.



- a. **Setup** – Collect a group of test users, or assign a persona to each participant on your team. Then, give each one a separate color of Post-It note.
- b. **Pose Questions** – Ask a series of seemingly obvious questions, such as “Why do you use this or that site,” or “How do you choose which site to use.” These questions should always be open-ended.
- c. **Map Notes** – As the answers roll in, scribble your notes and thoughts on your chosen color of Post-It. Apply notes to the appropriate section of the map.
- d. **Weed Through Ideas** – Go through all the notes and leave only the best and most useful ones.
- e. **Take a Break** – Allow the notes and ideas to ruminate for a day or two. Try hanging the empathy map in a common space like the break room so it’s not completely forgotten.
- f. **Define Goal** – See the area on the bottom that says “\_\_\_\_\_ needs a way to \_\_\_\_\_ because \_\_\_\_\_.” Now that you have some insights, fill that in for your target users. Pay special attention to the “because” part, as that will spark critical thinking about why you’re designing.

### 3. User Scenario

If your personas are the characters of a story, then user scenarios are the plot. The facts include where they click, how long it takes, even their emotional responses throughout. Foretelling the user's processes has lots of obvious advantages to UX and UI design



User

scenarios can come in several varieties. For example, your scenario could list out all the technical details, such as a step-by-step list of all the pages the user visited (and how long they spent on each). Another option is to focus more on the feelings of the user, in which case the scenario will read more like a story than a data sheet.

Regardless of which type you decide works best for you, when building your scenario, consider these factors surrounding your user:

- Behavior** – What idiosyncrasies does your user have when interacting with websites? Do they log in right away or when necessary? Are they looking at other websites simultaneously?
- Motivation** – Why does your user want to accomplish this goal? How badly? What are they willing to put up with?
- Environment** – Is the user at work, at home, or on the go? Are they using a computer, smartphone, or other mobile device? Are there any outside distractions?
- External Factors** – How fast is the Internet connection? Are they under an oppressive time constraint, or can they take their time?

Most important, try visualizing your user trying to accomplish their goal. As always, the more thorough your initial persona creation, the more accurate the user scenario will be.

## 4. Customer Journey Map

The customer journey map is similar to a user scenario, except it ranges from before and after the experience (not just during). This allows designers to get a fuller context of their product – after all, a user’s experiences begin before they even start using the product and ends later than when they’re finished with it.

The customer journey map draws on the information compiled in your personas, empathy maps, and user scenarios. It’s just a matter of combining the user’s personality (persona) with how they’re interacting with your site (user scenario). Each stage will offer different emotional progressions.

Phase	Before service	Before service	Before service	During service
User goal				
User expectations				
User process				
Experience (0 to 5)				
Good				
Bad				
What could we improve				

For each individual stage of the process, make sure you cover the following areas concerning the user:

- Goal – What do they hope to accomplish in this phase?
- Expectations – What does the user think will happen? What ideas are they bringing into their experience, whether justified or not?
- Process -- How do they hope to accomplish their goal? What are they actually doing?
- Rating of Experience – How would the user rate each phase of their experience?

- The Good – What does the user like about this phase? What works well?
- The Bad – What doesn't the user like about this phase? Where did problems arise?
- Improvements – Based on all the previous information, how can you make the user's experience better?

Customer journey maps can even work as a kind of "design audit." It can be used effectively in anticipating issues before the design process, but also in addressing or analyzing issues in an existing system.

## Functional and non-functional requirements

### Functional requirements

1. Functional requirements specify a function that a system or system component must be able to perform. It can be documented in various ways. The most common ones are written descriptions in documents, and use cases.
2. Use cases can be textual enumeration lists as well as diagrams, describing user actions. Each use case illustrates behavioral scenarios through one or more functional requirements. Often, though, an analyst will begin by eliciting a set of use cases, from which the analyst can derive the functional requirements that must be implemented to allow a user to perform each use case.
3. Functional requirements are what a system is **supposed to accomplish**. It may be
  - Calculations
  - Technical details
  - Data manipulation
  - Data processing
  - Other specific functionality
4. A typical functional requirement will contain a unique name and number, a brief summary, and a rationale. This information is used to help the reader understand why the requirement is needed, and to track the requirement through the development of the system.

### Non-functional requirements

1. Non-functional requirements are any other requirement than functional requirements. These are the requirements that specify criteria that can be used to **judge the operation of a system, rather than specific behaviours**.
2. Non-functional requirements are in the form of "**system shall be** ", an overall property of the system as a whole or of a particular aspect and not a specific function. The system's overall properties commonly mark the difference between whether the development project has succeeded or failed.
3. Non-functional requirements - can be divided into two main categories:
  - **Execution qualities**, such as security and usability, which are observable at run time.
  - **Evolution qualities**, such as testability, maintainability, extensibility and scalability, which are embodied in the static structure of the software system.
4. Non-functional requirements place restrictions on the product being developed, the development process, and specify external constraints that the product must meet.

The [IEEE-Std 830 - 1993](#) lists 13 non-functional requirements to be included in a Software Requirements Document.

- Performance requirements
- Interface requirements
- Operational requirements
- Resource requirements
- Verification requirements
- Acceptance requirements
- Documentation requirements
- Security requirements
- Portability requirements
- Quality requirements
- Reliability requirements
- Maintainability
- requirements
- Safety requirements

Whether or not a requirement is expressed as a functional or a non-functional requirement may depend:

- on the level of detail to be included in the requirements document
- the degree of trust which exists between a system customer and a system developer.

Ex. A system may be required to present the user with a display of the number of records in a database. This is a functional requirement. How up-to-date [update] this number needs to be, is a non-functional requirement. If the number needs to be updated in real time, the system architects must ensure that the system is capable of updating the [displayed] record count within an acceptably short interval of the number of records changing.



Article from <http://stackoverflow.com/questions/16475979/what-is-functional-and-non-functional-requirement>

References:

1. Functional requirement - [https://en.wikipedia.org/wiki/Functional\\_requirement](https://en.wikipedia.org/wiki/Functional_requirement)
2. Non-functional requirement - [https://en.wikipedia.org/wiki/Non-functional\\_requirement](https://en.wikipedia.org/wiki/Non-functional_requirement)
3. Quantification and Traceability of Requirements - <http://www.idi.ntnu.no/grupper/su/fordypningsprosjekt-2005/eide-fordyp05.pdf>



## Information Architecture

To effectively display the right features, tools and high-quality content/media is in line with the goal of the platform (LinqOp). The better the user has a chance of converting as it is easy to navigate the platform. The main goal of any platform's information architecture is to enable the user to complete the desired task.

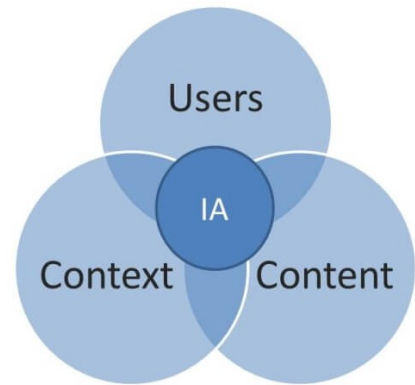
### What is information architecture?

Information architecture (IA) focuses on the organization, structure, and labeling of information so that it is effectively delivered and sustainable. To successfully do this, the architect needs to understand how information fits together and how this information relates to each other.

Information architecture can be broken into four components. Those components are organization, labeling, prioritization, and findability.

The goal of information architecture is to:

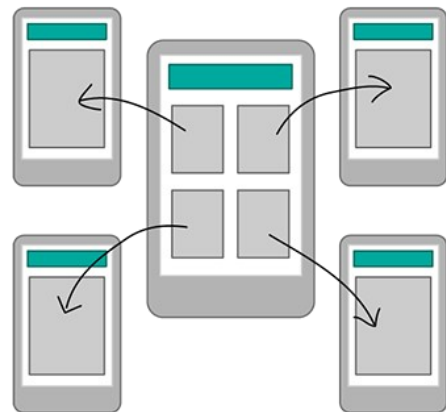
- Create a website that is easy to use
- Create a website that has easily findable information



### Organization: Categorize and Structure Information

Organization is the first component of effective information architecture. An architect can group information together based on the characteristics that are shared between information.

An example of a grouping could be grouping information together in a logical sense. We've all experienced alphabetical order. We've also all experienced date modified order.



These are all experiences of organization in information architecture.

Below are a few more examples of groupings that could happen with information architecture:

- Date/time
- Alphabetical
- Format
- Geography/location
- Social
- Topic/subject
- Target audience
- Task/process
- Attributes/facets

A skilled information architect can understand the business needs and understand the needs of the user. They can then organize information in such a way that it will maximize the ability to find and consume information.



## **Labeling: Representation of Information**

A label is very prevalent in our society. It's hard to not spot a label within sight. The point of a label is to identify something and in information architecture, this fact should still hold true.

In typical information architecture, there should be three very important label types:

- Document
- Content
- Navigation

Users should be able to easily understand labels (users). Technology should also very easily understand labels (code). The point of the label is to be descriptive for both the user and the technology.

The most important part of a label and label structure is that it should be consistent throughout the information architecture. No need to be overcomplex either. Keep it simple and your users will thank you.

## **Priority: Relative Information**

Ordering and placement of information is extremely important for the information architecture process. The goal of any architect is to maintain balance between user expectations and the goals of the business.

Information architects must have a good understanding of how much data is overwhelming to the user. Too much complexity and users will have trouble finding information. Adding too little and users will have problems finding information as well. For example, a huge menu can easily be disregarded by the user. But having almost no navigation menu will also have a similar effect.

Information architects need to try to find that 'sweet spot' and ensure that the number of choices that the user can have is the amount that they end up having once the site has been implemented.

## **Findability: Searching Information**

A good information architect has the ability to connect information so users have the ability to find the information that they need. Information architecture is not necessarily the site's navigation or the site's search. It is just the way that the site helps the user find the information that they need.

Louis Rosenfeld, renowned information architecture consultant and co-founder of the Information Architecture Institute says it best: “**IA** is about helping people to find and, ultimately, understand information. Successful finding means enabling people to do a few things—searching, browsing, and asking — often at the same time, in the same session. Not only is the sum greater than those parts, but it’s also how people naturally interact with information.”

Information architecture is about the user being able to find information.

Redacted article from Kyle Szives - is the co-founder of ANTLR Interactive. While not working, he spends his time eating great food, running, and experimenting with astrophotography.

Article - <http://www.antlr-interactive.com/blog/why-is-information-architecture-important/>

Kyle Szives <http://kyleszives.com>