Prototype

“People don't know what they want until you show it to them”- Steve Jobs

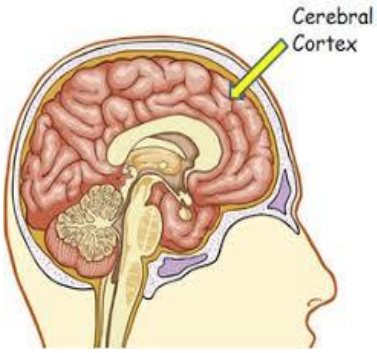
Prototyping is the shorthand of innovation

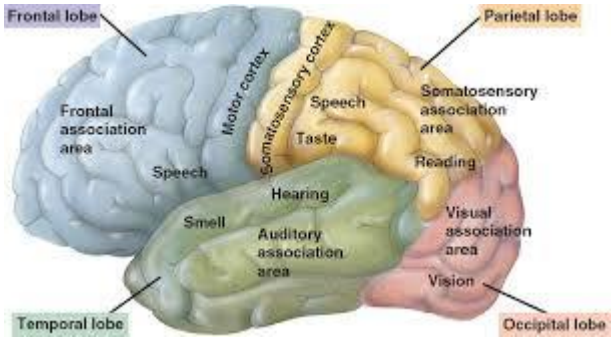
Definition:

A prototype in Design Thinking is **“A simulation or sample version of a final product, which is used for testing prior to launch”**

- The Goal of a prototype is the test products and services then its ideas before spending lots of time and money into creating the final version of the sellable product.
- The word “prototype” comes from the Greek Prototypos, a compound of protos(“first”) and typos (“mold, “pattern”, “impression”)
- Prototypes are one of the most important steps in the design process, yet it is very confusing to create and execute.
- A prototype can be almost anything from a series of sketches representing different screens of the final version of pixel-perfect product.
- Prototypes play a major role in solving the usability issues before the launch of the product.

- The prototype stage is when designer create a model designed to solve user's problems or validate ideas can test in the test phase of the process.
- Prototyping helps designers to unveil and explore these human needs, opening the door to insightful interaction and more empathetic design solutions
- Human Beings are Highly Visual. in fact, 30 percent of human cerebral cortex is devoted purely to vision.





- When human being(user) can view the prototype, then it understood all the processes involved with the product, especially areas of contention for future testing, then prototype comes to life
- In this phase, the idea selected at the best is expanded into a design concept.
- It must be clarified how the idea can be visualized and in a particular made tangible to test it and with the customer.
- According to the rules" **Be visual and make it to tangible**" and" **fail early and often**", the idea concepts are to be visualized as quickly as easily as possible are made tangible and comprehensible in order to test the effect of the customer and to learn from positive or in a particular negative feedback.
- Based on Idea concept, it must be clarified which visualization and prototyping techniques should be best be used
- As a first step it must be clear which goal is to be pursued.
  1. What do you want to learn from the customer/ users with the help of surveys interviews, observations, prototype test, pilot applications?
  2. How uncertain are the results?
  3. What can you not experience?
- The time and cost budget are also a factor to consider when selecting visualization and prototyping techniques
- Even the most experienced design thinking teams cannot design the optimum solution on the first trial. Good design is a result of several iterations.
- Iteration is a cycle of doing something, testing it, improving it, and protecting it. The most efficient method of iterative design is prototyping

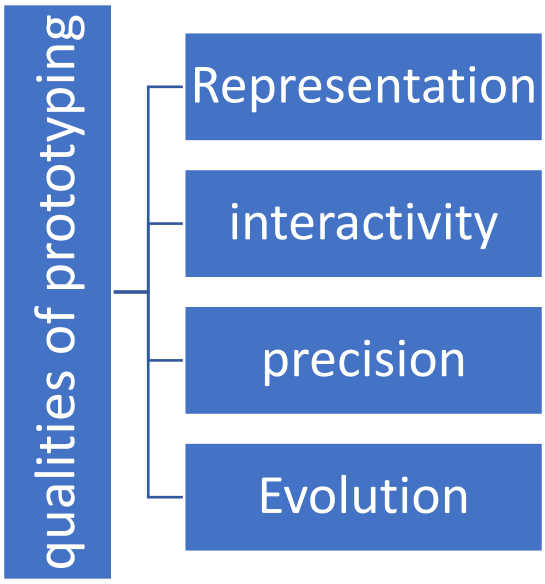
- In general, the design teams have identified vetted solution concepts that are worth bringing farther along the design path.
- Solution concepts need stakeholder feedback as early and as often as possible in the design process.
- Prototypes are the most effective means by which stakeholders can understand what the design team intends.
- Prototyping as a creative tool requires the design team to clarify a solution concept's intentions and make decisions regarding what the concept is and is not.
- By being forced to shape the solution concept into something that can be experienced, constraints and dependencies of logical flow, time and space, human dynamics, and other principles and conventions force concepts to transform into designs.
- Prototyping causes the solution concept to evolve before the first stakeholder encounter.
- In prototyping stage three things are mainly taken care of
  1. Creation of experience
  2. Getting Feedback
  3. iteration
- The step of prototyping is the one in which the end user comes into picture. The end user is actively involved in this component of design thinking.
- All the feedback is taken from the customer, and based on the criticisms, suggestions, and appreciations received, the design thinkers create a better solution after iterating the process of design thinking's first three steps, viz. Empathize, Define, and Ideate.
- Prototyping requires thinkers to create tangible products, which can be small-scale models
- One of the best ways to gain insights in a design thinking process is to carry out some form of prototyping
- Prototyping involves producing an early, inexpensive, and scaled down version of the product to reveal any problems with the current design.
- Prototypes are often used in the final, Testing Phase in a design Thinking process in order to determine how the users behave with the prototype, to reveal new solutions to problems , or to find out whether or not the implemented solutions have been successful.
- In prototype stage the design team produces several inexpensive, scaled down versions of the solution.
- In this stage it is recommended to share prototype within the design team and if possible, with a wider audience.

- In this stage designers accept, improve, and re-examine or reject solutions based on the user's experience. Though this process, the design team will be better able to tell how a real user would behave, think, and feel when interacting with the learning solution.
- In this stage, designers move from the abstract idea to a more tangible product.
- Think about prototypes as primitive forms of what you envision the final product to be.
- A drawing something pulled together on paper, a digital representation or even a prototype printed by a 3D printer can all serve as an adequate example of the product that designer imagined.
- Think of open questions that the user can shoot towards designer when he experiences the prototype

Four Qualities of Prototyping:

The Qualities of prototyping are:

Representation	This form of the prototype is mainly structured for presentation and keynote uses. That may be a paper-pen, digital or code
precision	The fidelity of the prototype is defined here. It explains the level of details, realism, and final design. Such as Low-fidelity and high-fidelity.
Interactivity	The functionality opens for the user. i.e fully functional, partially functional or no interactions at all
Evolution	The life cycle of the prototype. some are built to re iterate and re-iterate until it is precisely done and some are just designed and thrown it away after the certain outcome is made.



- A prototype is one manifestation of Design that allows stakeholders (users and designers) to interact with it and to explore its suitability
- "A prototype is an early sample, model or release of a product built to test a concept or process.it is a term used in a variety of contexts, including semantics, design , electronics, and software programming----Wikipedia.
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Primary Guidelines for Prototyping:

- ❖ Take the first step and start to build the prototype. Do not procrastinate.
- ❖ Do not waste too much of time on building a single prototype.
- ❖ The prototypes must be built with the end user in mind.
- ❖ The prototype must not be a mere piece of trash; it must create an experience for the user.

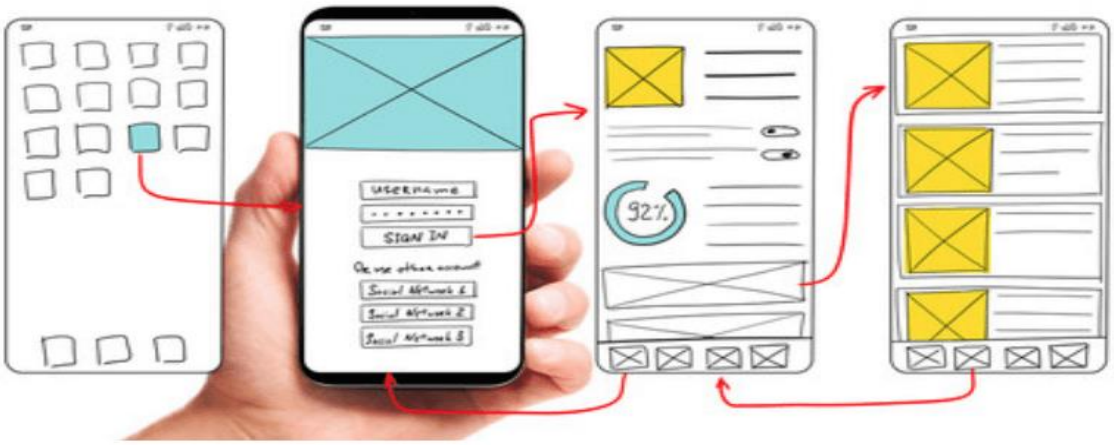
Types of Prototyping:

- Prototyping does not have to be time-consuming, expensive, or difficult.
- Different fidelity levels allow designers to come up with solutions quickly.
- Fidelity means the level of details, functionality, or interactivity that a prototype has
- "Fidelity" can be a defined (according to Oxford Dictionary) as "the Degree of exactness with which something is reproduced"
- In other words, a prototype's level of fidelity answers the question, how precisely does this present the final solution.
- Prototypes are of two types

(i) Low- Fidelity prototype
(ii) High-Fidelity prototype

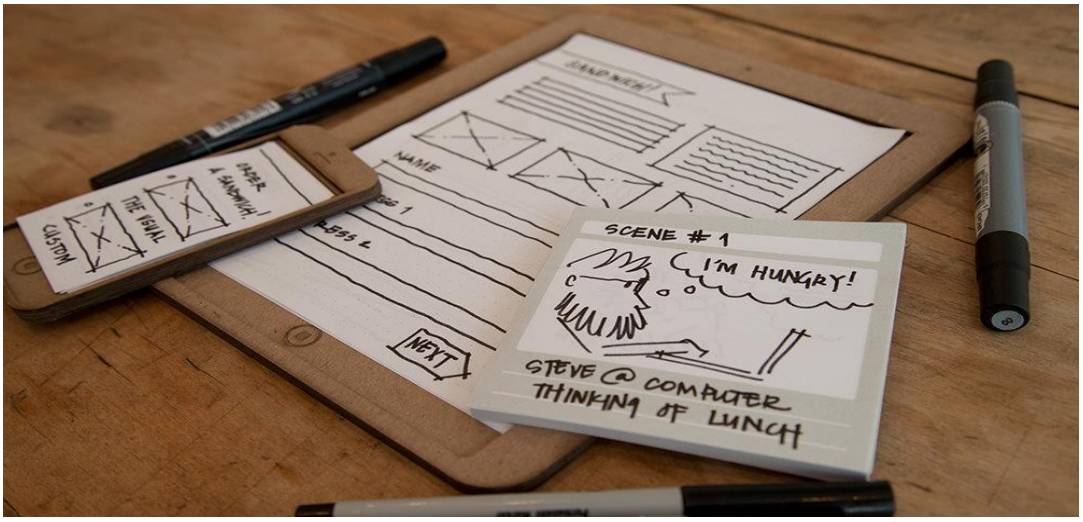
Low-Fidelity Prototyping:

- Low-Fidelity prototyping is intended to provide designers with Basic model or example of the product that requires testing
- With a low-Fidelity prototype, it is likely going to be incomplete or utilize a limited number of its intended features.
- The low-fidelity prototype-Known as **low-tech**, **low-fi** or **lo-fi** prototype, is a semi-finished prototype that focus on function, structure, process, and provides the simplest framework and elements of web/app.
- It can even be constructed using materials such as **wood**, **paper**, and **metal** that are not intended to be used for the finished article.
- Low -Fidelity prototypes are usually simple and in-expensive ways to communicate, explore and modify ideas in the early stages of developments and their purpose is to support and provide answer to the question of the designers
- Low -Fidelity prototyping is used generally show the overall shape of the design idea and the primary functionalities , which are required to work fully but rather serve as the proof of concept and to help generate insight about the final look.



- Typically speaking, when design a low-fidelity prototype it can be inexpensive, quick, and simplified version of what the final product will be.
- Low-Fidelity means that the prototype does not have a lot of detail, no images, or colors
- Instead, it uses placeholders for images and text, but shows the flow and functionality of a solution

- It is often used to translate design ideas into testable and tangible artifacts for collecting and analyzing the user demands at early stage.



- Building a low-fidelity prototype is very helpful for exposing the idea for user feedback and finding major issues that need to be fixed the early stages of design when re-designing cane be cheaper and quicker

Advantages of low fidelity prototypes:

1. Low cost: The cost of low Fidelity prototype is extremely low

2. Fast: Without focusing on every interface detail, designers can just follow their design ideas and create a simple and testing product within a few minutes

3. Easy to demonstrate, co-operate and iterate: Without too many details, hello why prototype does not require money professional skills. And more people can join and collaborate on the same project it is also easy for designers to make changes and iterate the prototype during the calibration

4. Easy to get feedback: Since a low fertility easy to carry and demonstrate designers can also directly share it with other people to collect design feedback

5. Easy to detect and tackle potential issues: A low Fidelity prototype also allows designers to test use flows, interactions. It is good good for designer to detect and tackle potential issues quickly