

# Application Design: Prototype and User Flow

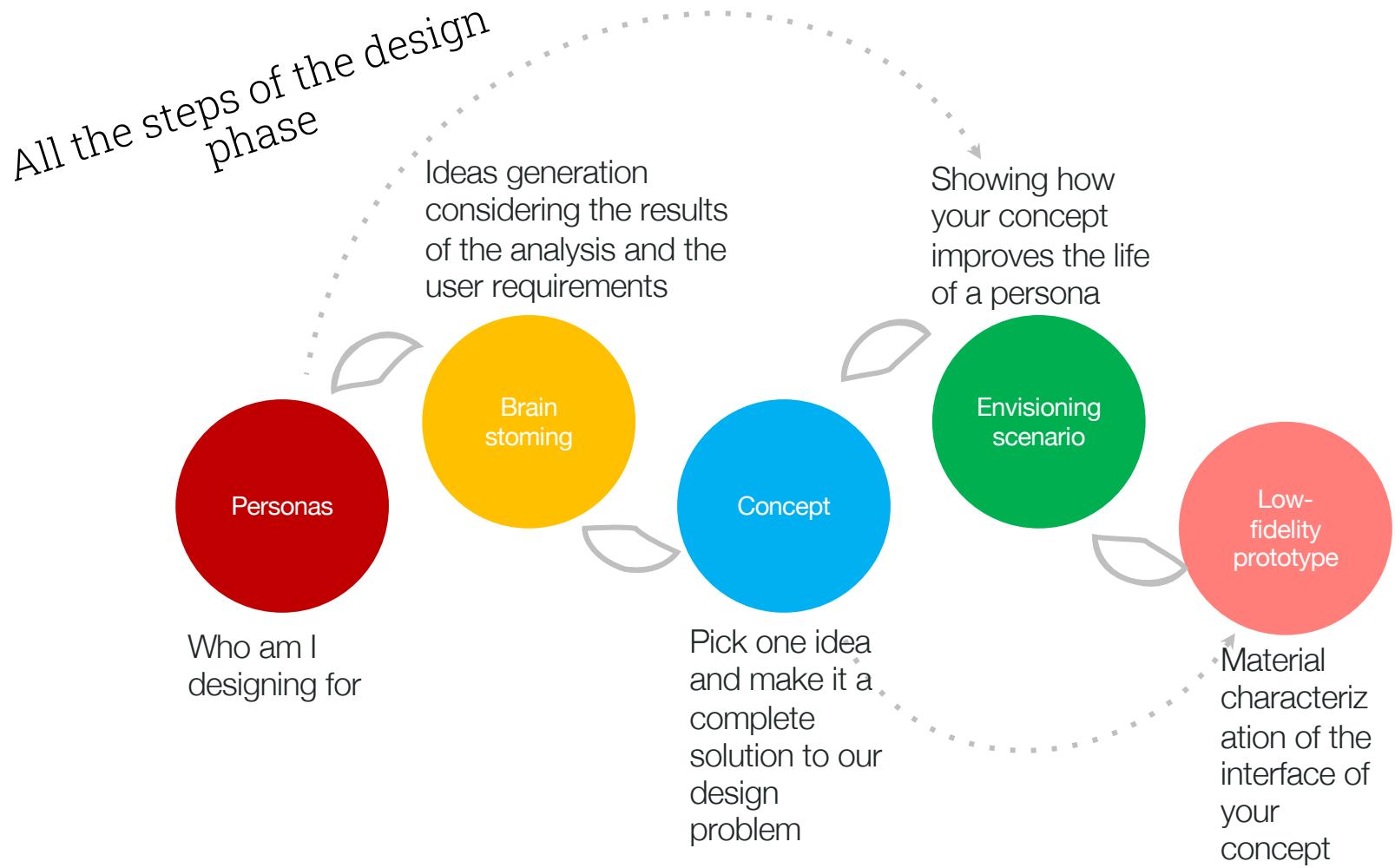
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# Learning outcomes

- Know the basic techniques for low & medium fidelity prototyping
- Understand **the use of different types of prototypes for different stages** of product development
- Know how to evaluate a prototype



# What is a prototype?

The representation of a design idea before the final artefact.

A prototype stands in between:

- Conceptual design & physical design
- Idea & product

A prototype is a model *not* a refined and finished product.



# What is a prototype?

“ (...) prototypes provide the means for examining design problems and evaluating solutions. Selecting the focus of a prototype is the art of identifying the most important open design questions”.

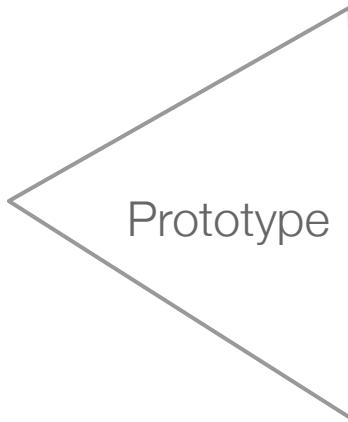
Houde, S., & Hill, C. (1997). What do prototypes prototype?

A yellow circular graphic containing two black double quotes (”).

# What can we test with a prototype?

**Look & Feel**  
denotes questions about **the concrete sensory experience of using an artefact**

— what the user looks at, feels and hears while using it.



## Role

refers to questions about **the function that an artefact serves in a user's life** - the way in which it is useful to them.

## Implementation

refers to questions about **the techniques and components through which an artefact performs its function**

# Why do we need prototypes?

- For evaluation and feedback on ideas
- Stakeholders interact more easily with visual and tangible artefacts rather than with documents or oral descriptions



# What are prototypes used for?

To evoke reactions from stakeholders in the design process

- from designers
  - to encourage communication and reflection through materials
  - to find answers to questions and choose between alternatives
- from users
  - to test generic ideas or specific aspects immediately, collect feedback and clarify requirements

# What do we prototype?

Through prototypes  
we can represent:

- Technical issues
- User flows
- Task design
- Screen layouts
- Any difficult / controversial / critical area



# What form a prototype can take?

Different forms of representation:

- Series of screen sketches
- Storyboards and scenarios
- PowerPoint slides
- Cardboard mock-ups
- Videos simulating the use of the system
- Pieces of software with limited functionalities

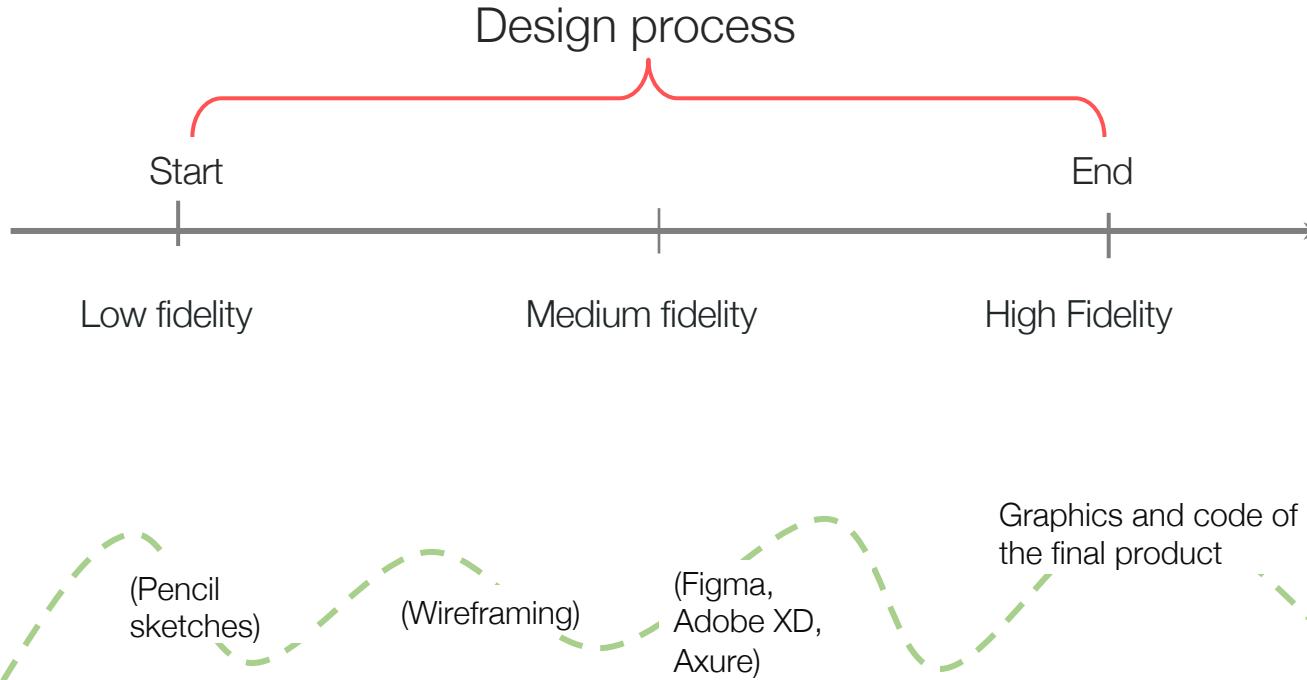
- Works like...
- Looks like...
- Is experienced like...

... the final system

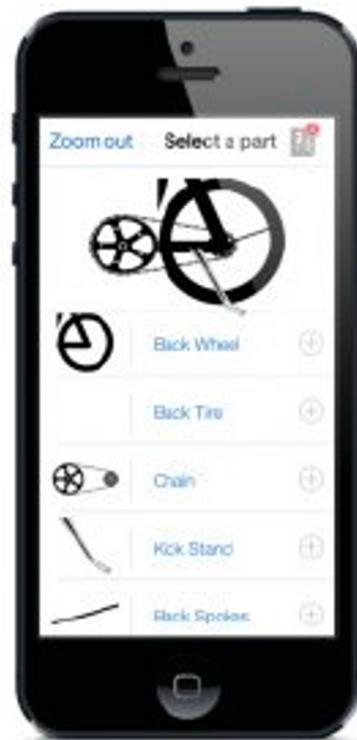
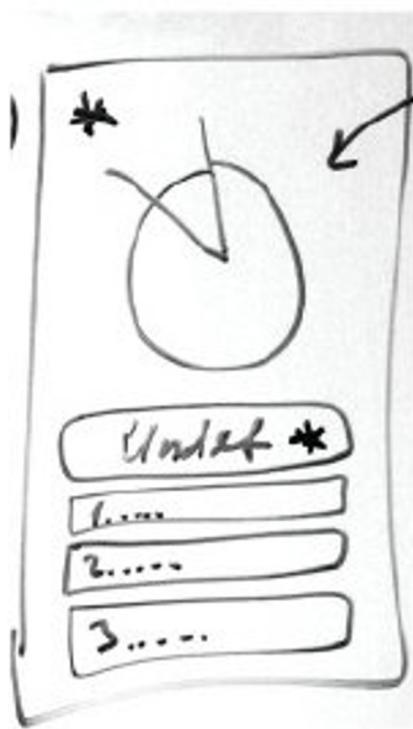


# Prototype fidelity

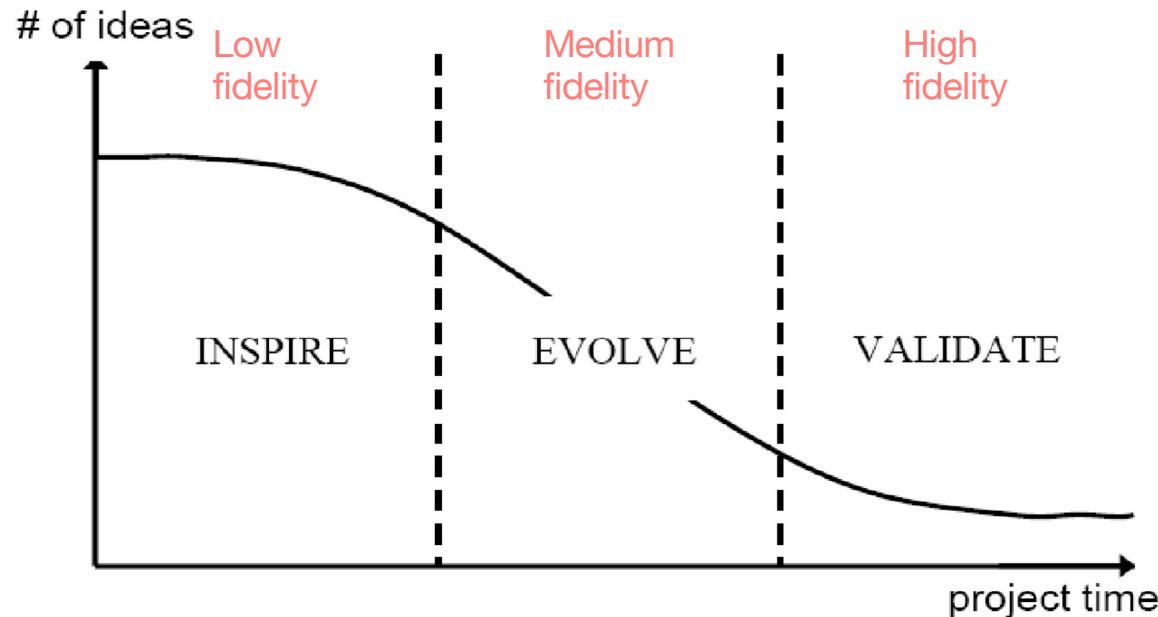
The level of *fidelity* of prototypes is a continuum



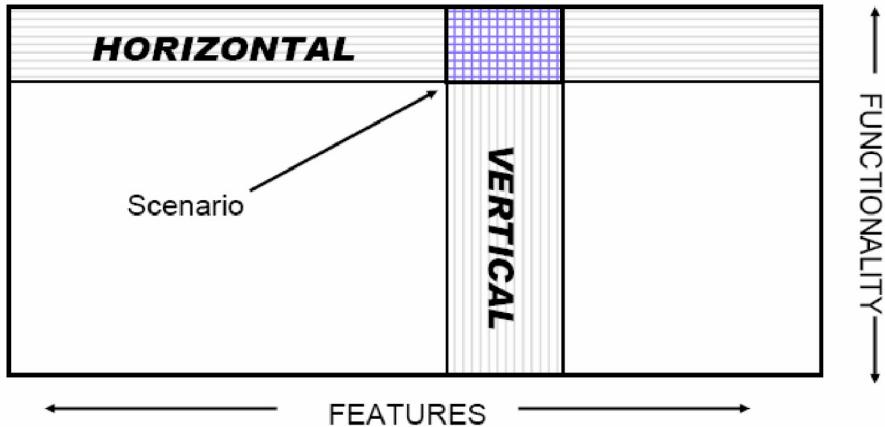
# Prototype fidelity



# Prototype fidelity evolution



# Compromise



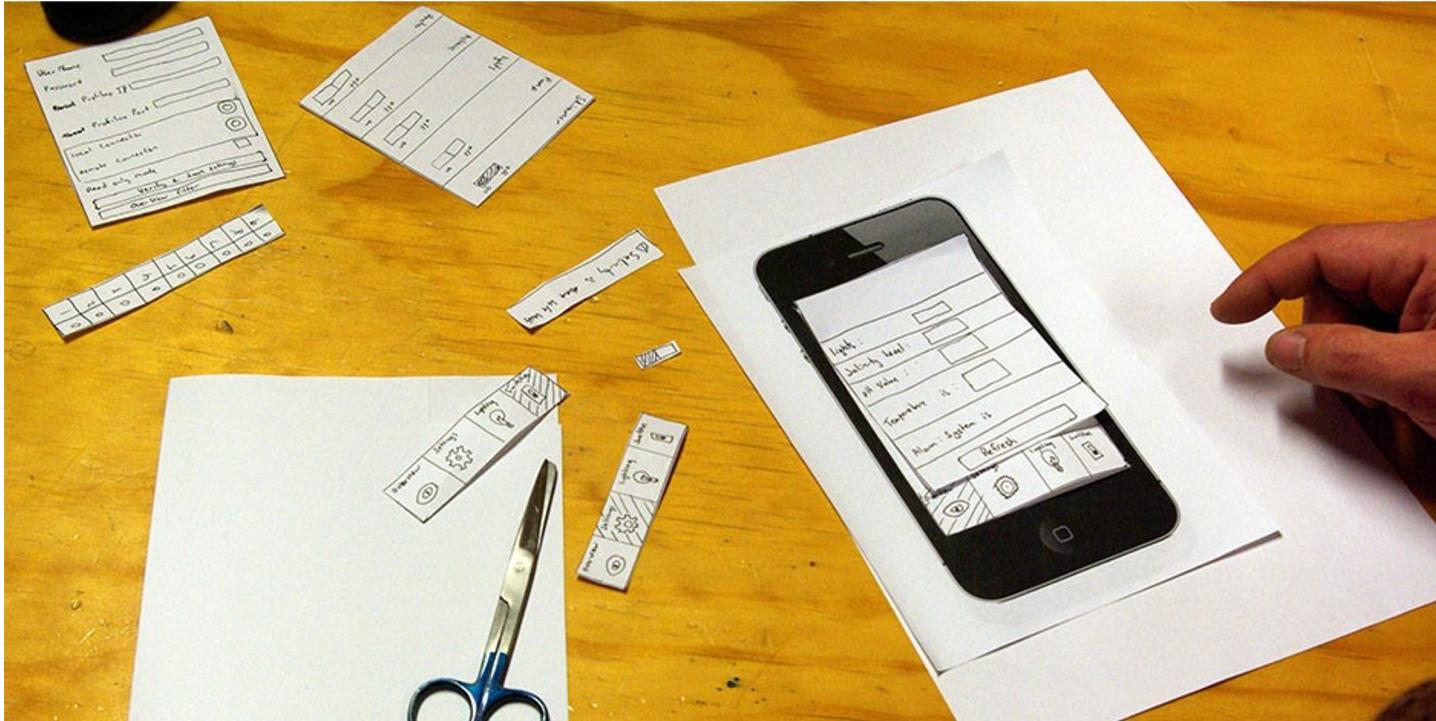
Two common types of compromise for what a prototype can represent:

- 'Horizontal' prototype: provide a wide range of functions, but with little detail (general overview).
- 'Vertical' prototype: provide a lot of detail for only a few functions (in depth view).

# — What to represent in the prototype? —

- Think about the focus of your prototype: what kind of information you need from the users?
- Then, define what you need to show to the users
- Finally, develop your prototype

...true both for the low and the medium fidelity prototypes



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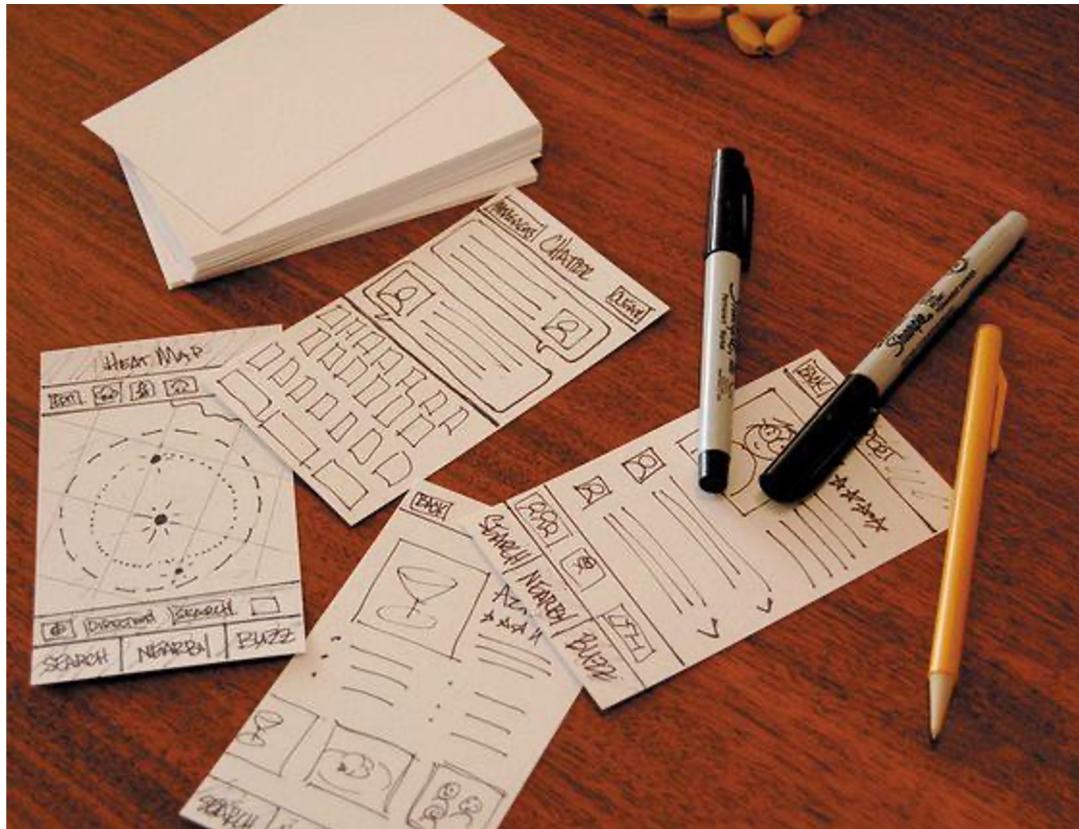
# Low-fidelity prototyping



# Low-fidelity prototype

Purpose	Form	Use
<ul style="list-style-type: none"><li>● Depicts concepts, NOT details</li><li>● Suggest screen layouts, a first hint of the UI look &amp; feel</li><li>● Find out macro usability issues as early as possible</li><li>● May present design alternatives</li></ul>	<ul style="list-style-type: none"><li>● Quick, cheap, easy to change</li><li>● Uses a medium which is different from the final one, i.e. paper, cardboard, storyboards, sketches of screens, etc.</li><li>● Non-functional</li></ul>	<ul style="list-style-type: none"><li>● The design team can reason about the different options around a tangible artefact</li><li>● It can be presented to potential future users for evaluation, although requires a facilitator</li></ul>

# Pen & paper layout



# Sketching

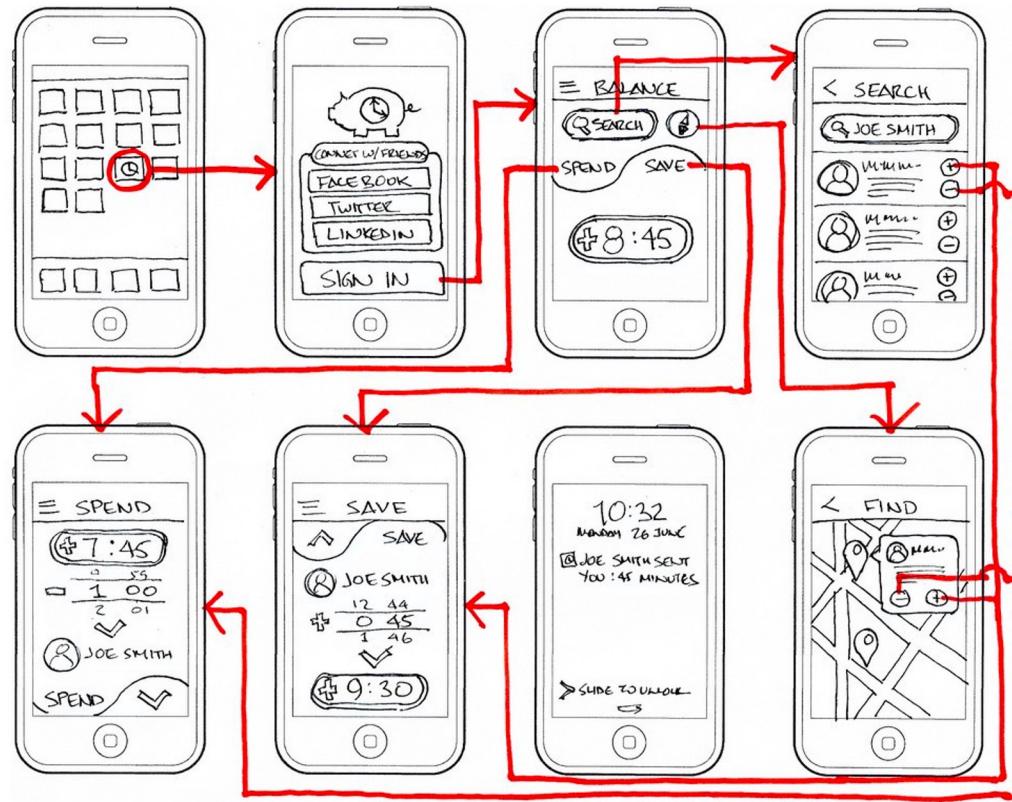
- Do not be inhibited if you cannot design
  - Use simple and clear symbols
- Provide an overview of the layout without much details
- Provide two representations:
  - One where users can “interact”
  - One for the report to show the user flow

# The incredible things you can do with paper prototyping



<https://www.youtube.com/watch?v=IAUW3ZZLWng>

# User flow



# User flow

- User Interface Flows show graphically how a user will navigate a user interface.
- They are system models that show how different pages of a user interface are connected one to the other and how a user can navigate through them.
- They are typically comprised of screens and navigation paths between various screens.
- Unlike Process or System Flows, they do not describe how a user or system completes a task/activity but rather describes how a user might physically navigate the interface system.

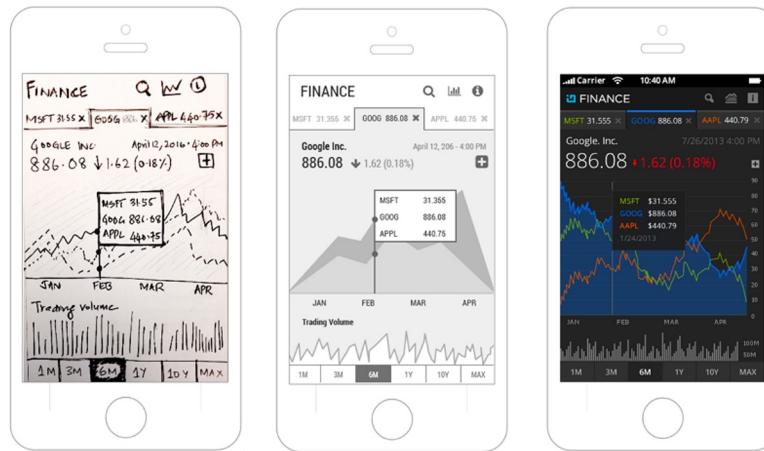
# In-between low and medium: wireframes



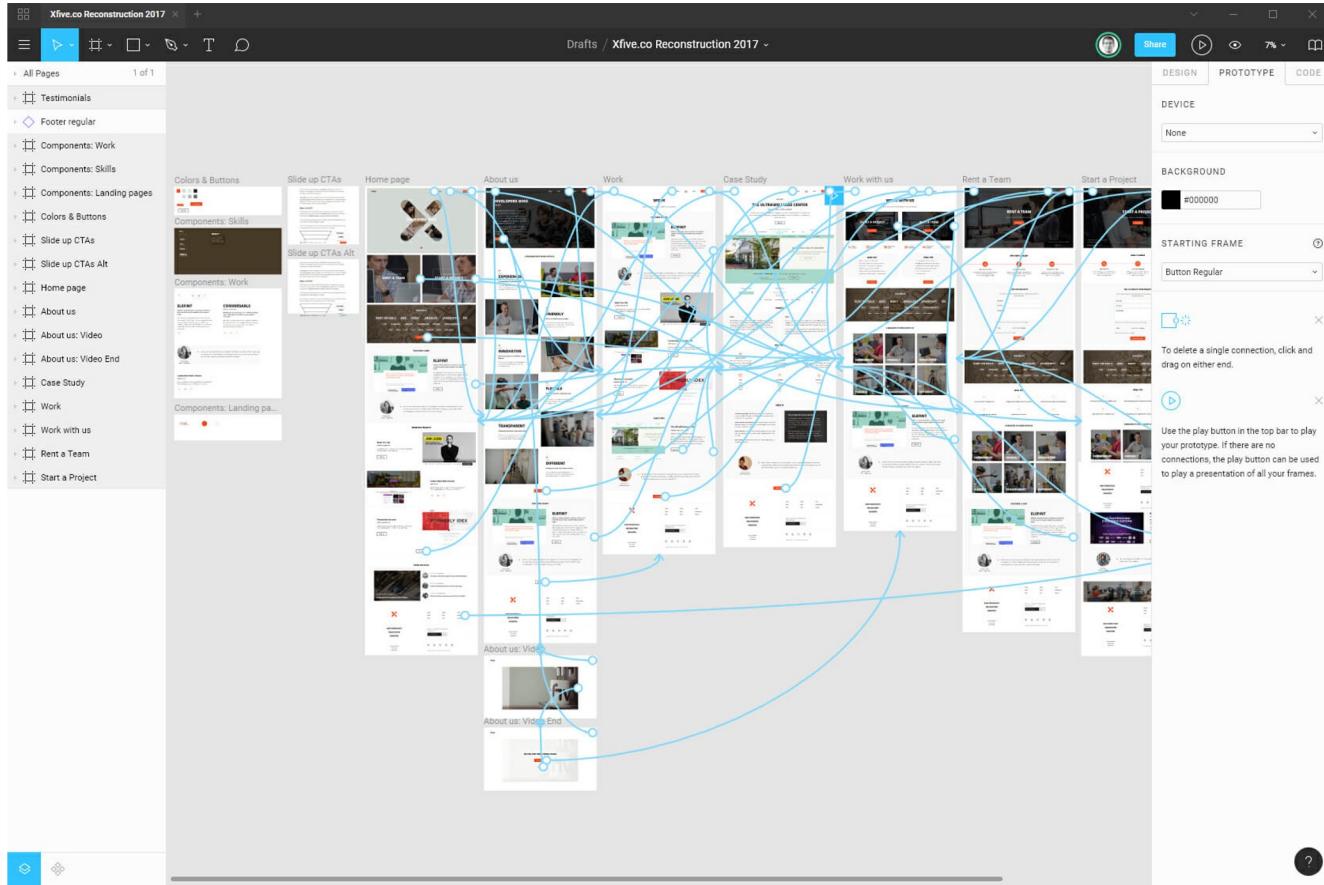
<https://balsamiq.com/>

# Medium fidelity prototypes

- Interactive
- Cleaned up – but not completely refined
- Possible tools:
  - PowerPoint
  - Figma
  - Adobe XD
  - Axure



# Figma

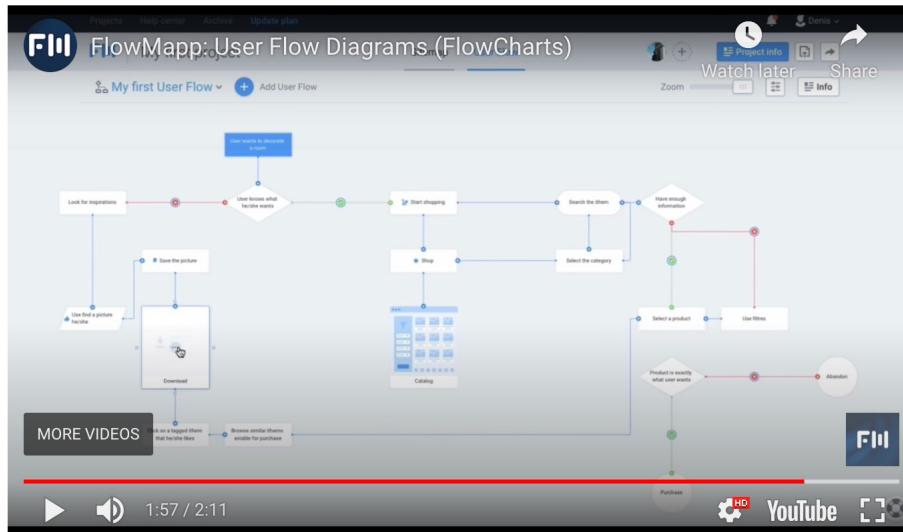


## UX tools for web design

Design exceptional UX for beautiful products, websites, and apps  
with the online collaborative tools.



<https://help.flowmapp.com/help/how-to-create-user-flow/>



# Costruzione di uno UserFlow – I

Esempio: Servizi per la Mobilità - Chiedere un permesso ZTL per la propria auto

COMPITI (TASK)		CERCARE INFORMAZIONI		
AZIONI (SUB-TASK)		Azione 1	Azione 2	Azione 3
Descrizione dell'azione		trovare la sezione Servizi	trovare la sezione Servizi per la Mobilità	trovare la sezione dedicata ai permessi ZTL
Risposta del sistema	(Area pubblica del sito)	> Servizi comunali	Servizi > Servizi per la Mobilità	Servizi > Servizi per la Mobilità > permessi ZTL
Funzione				
Contenuto	homepage Comune	Servizi: elenco dei servizi comunali	Servizi: elenco dei servizi per la Mobilità	scheda del servizio: requisiti per richiederlo, modalità per richiederlo, tempi di erogazione, adempimenti necessari
Possibili criticità/errori				
Note				

# Costruzione di uno UserFlow - II

(ALT) NUOVO UTENTE 1		CERCARE INFORMAZIONI	
AZIONI (SUB-TASK)		Azione 1	Azione 3
<b>Descrizione dell'azione</b>		utilizzare il campo di ricerca per "permesso ZTL"	selezione del risultato che interessa
<b>Risposta del sistema</b>	(Area pubblica del sito)	risultati della ricerca	Risultati ricerca > permessi ZTL
<b>Funzione</b>		motore di ricerca con suggerimenti	
<b>Contenuto</b>	homepage Comune	lista dei risultati	scheda del servizio: requisiti per richiederlo, modalità per richiederlo, tempi di erogazione, adempimenti necessari
<b>Possibili criticità/erri</b>		la lista contiene molti risultati e non è semplice individuare quello rilevante per l'utente	
<b>Note</b>		i risultati della ricerca dovrebbero essere contrassegnati da tag che indichino di che tipologia di contenuto si tratta (servizio on-line, descrizione del servizio, news etc.) in	

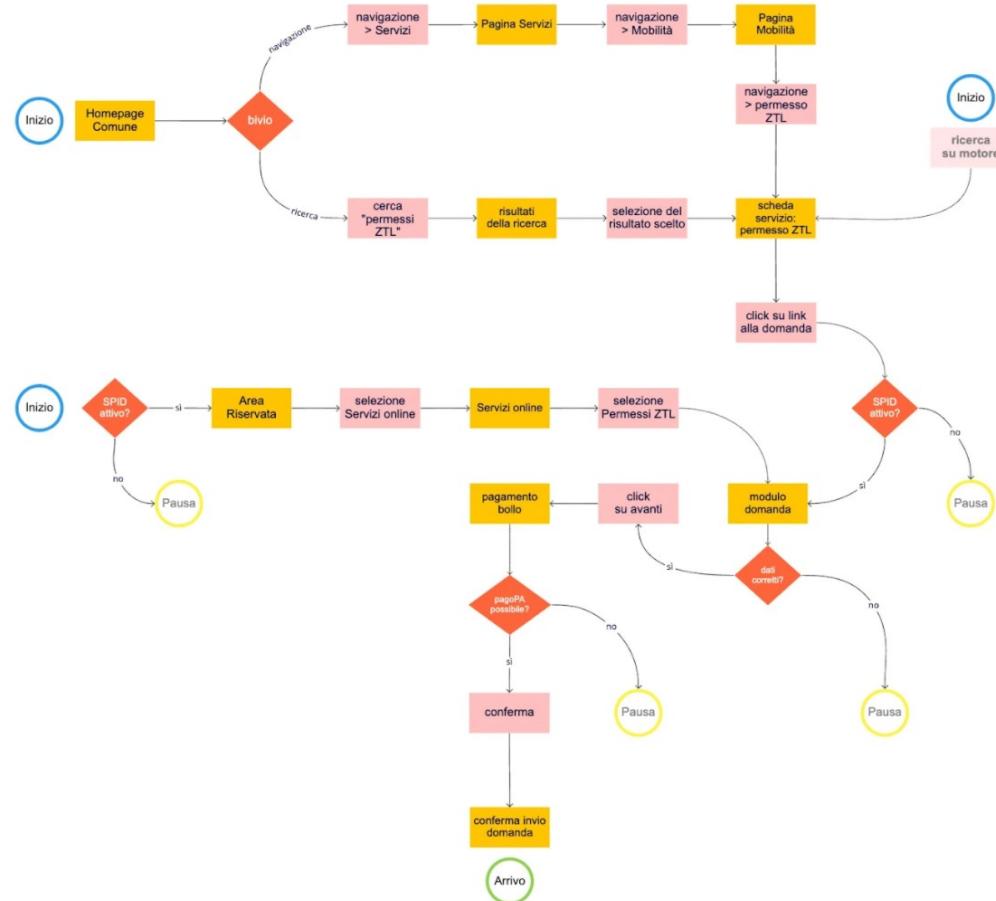
# Costruzione di uno UserFlow - III

(ALT) UTENTE ESPERTO		UTILIZZARE IL SERVIZIO		
AZIONI (SUB-TASK)		Azione 1	Azione 2	Azione 3
Descrizione dell'azione		Click su Area Riservata	selezione dell'area desiderata: Servizi online	selezione del servizio di richiesta permessi ZTL
Risposta del sistema	(Area pubblica del sito)	Area riservata - Homepage	Area riservata - Servizi online	Servizi online - permessi ZTL
Funzione		accesso con SPID		pre-compilazione dei dati anagrafici
Contenuto	homepage Comune	lista sezioni disponibili: Servizi online, Profilo, Le mie domande etc.	Servizi online: lista dei servizi, organizzata per aree tematiche	form di domanda
Possibili criticità/erori				
Note				

# Visualizzazione di uno UserFlow

Flusso nr. 1 - ESEMPIO

## Chiedere un permesso ZTL per la propria auto



### STRUMENTI

punti di ingresso/uscita



decisioni



azioni



risposte del sistema



transizioni



# — Summary points —

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- Different kinds of prototyping are used for different purposes and at different stages
- Prototypes answer questions, so prototype appropriately
- Prototypes and scenarios are used throughout design

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# Recommended readings

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- Houde, S., & Hill, C. What do Prototypes Prototype?
  - <https://plotblog.typepad.com/Prototypes.pdf>

# ToDo

- Creare uno **User Flow** per la vostra applicazione identificando un insieme di pagine “core”.
- 1 Foglio Excel e un diagramma di flusso come quelli spiegati a lezione ( e un **Mockup delle pagine?**)