

Software Engineering

Week 3: Software User Interfaces

Dr. Sridhar Iyer, IIT Bombay

Dr. Prajish Prasad, FLAME University



Software Engineering

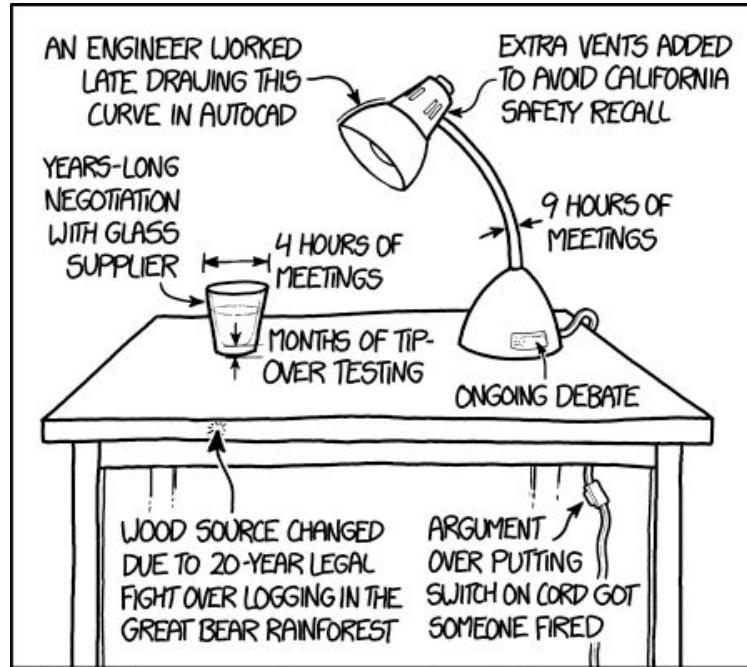
Introduction to Interaction Design

Dr. Sridhar Iyer, IIT Bombay

Dr. Prajish Prasad, FLAME University



Design in Everyday Objects



SOMETIMES I GET OVERWHELMED THINKING ABOUT THE AMOUNT OF WORK THAT WENT INTO THE ORDINARY OBJECTS AROUND ME.

<https://xkcd.com/1741/>



Reflection Spot

Can you think of experiences where you have been left frustrated by the user interface of a website or an app?



Please pause the video and written down your responses





www.ARNGREN.net

23 Butikker

Teknologi & Gadgets

el-Jeep 4WD
Drone med Kamera kr. 3.998,-

el-biler til barn 12V 24V 48V fra kr. 1.998,-

3-hjul Cargo-el-Bike
Nyhet!

Ingen ålders-grense el-scooter PEDALS

Alla Produktene på denne siden lagerføres hos ARNGREN i Oslo. Se Lagerkoden etter Prisene (lev. 2- 5 dager):

- Er på Lager
- Kommer før 3 uker
- Lengre enn 3 uker

el-sykkel el-ATV el-ATV el-scooter BMW-i6

Mercedes SUV m/ Gummi-Hjul fra kr. 2998,- el-ATV Bensin-ATV

G-Tog Nyhet 4WD el-ATV med skilt (16 år) el-bil (16 år & moped-Lappen) fra kr. 34.998,-

el-Bil ; Cross-Rider fra kr. 89.998,- el-ATV med skilt (16 år)

Fatbike-1500w el-ATV

el-bil kr. 89.998,-

Fotball-Trener fra kr. 2.998,-

Ta alltid ut 230Vac Adapteren når du ikke er tilstede, eller sover

el-jeep 9998,-

100km! Elektrisk-ATV EL-Scooter

Drone-Bike Lettevevne: 8kg kr. 19.998,-

Search el-retur Index Slik Betaler du

Elektriske-Kjøretøy Elektrisk-ATV el-biler til barn

Fjernstyrt produkter Forbruker Elektronikk Batterier & Ladere, etc Disko-Lys - Rakett Roboter

Kjøpsloven Angreskjema

Avatar

Elektronikk

Elektrisk Fra kr. 99,-

Elektro

Activities involved in Interaction Design

- Identifying needs and requirements
- Developing alternative designs that meet those requirements
- Build interactive versions
- Evaluate



Software Engineering

Usability Goals

Dr. Sridhar Iyer, IIT Bombay

Dr. Prajish Prasad, FLAME University



Recap

- Importance of designing “good” user interfaces

Goals + principles required to design “usable” interfaces



Usability

ISO 9241-11 standard

“The extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use”

Usability Goals

- Effectiveness
- Efficiency
- Safe to use
- Learnability
- Memorability



Effectiveness

- How good a system is at doing what it is supposed to do
- Is the system capable of
 - allowing people to learn well
 - carry out their work efficiently
 - access the information they need
 - buy the goods they want etc.?



Effectiveness Examples

Gmail Images  Sign in



Google Search

I'm Feeling Lucky

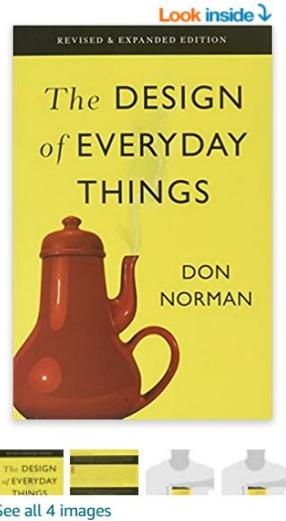
Google offered in: हिन्दी वार्ता தமிழ் மராத்தி தமிழ் முજरती ຕຳລັກ ມළයුණු ජේසා



Effectiveness Examples

[Back to results](#)

Sponsored



Hachette India The Design Of Everyday Things: Revised And Expanded Edition Paperback – 5 November 2013

by [Don Norman](#) (Author)

4.466 ratings

[See all formats and editions](#)

Kindle Edition
₹561.70

Audiobook
₹0.00

Paperback
₹677.00

[Read with Our Free App](#)

[Free with your Audible trial](#)

18 New from ₹629.00

[Save Extra with 4 offers](#)

Cashback (4): Amazon Pay Later Reward - Activate now & earn ₹150. And get surprise rewards when you shop with Amazon Pay Later. T&C apply. [Check eligibility](#) | [See All](#)

Bank Offer (4): 10% Instant Discount up to INR 1500 on ICICI Bank Credit Card Non EMI trsns (excluding Amazon Pay ICICI Credit Card) Min purchase value INR 5000 | [See All](#)

[▼ See 2 more](#)

[Buy new:](#)

₹677.00

M.R.P.: ₹899.00

Save: ₹222.00 (25%)

Inclusive of all taxes

Fulfilled

[FREE delivery Thursday, 23 June.](#)

[Details](#)

Or fastest delivery **Tomorrow, June 22.** Order within **7 hrs 49 mins.**

[Details](#)

Deliver to Prajish - Pune 411021

In stock.

Sold by [Cocoblu Retail](#) and [Fulfilled by Amazon](#).

Quantity:

[Add to Cart](#)

[Buy Now](#)



Efficiency

- How does a system support users in carrying out their tasks
- Common tasks through a minimal number of steps



Efficiency Example

Buy new: ₹677.00
M.R.P.: ₹899.00
Save: ₹222.00 (25%)
Inclusive of all taxes



FREE delivery Thursday, 23 June.

[Details](#)

Or fastest delivery Tomorrow, June 22. Order within 7 hrs 49 mins.

[Details](#)

Deliver to Prajish - Pune 411021

In stock.

Sold by [Cocablu Retail](#) and Fulfilled by Amazon.

Quantity:

[Add to Cart](#)

[Buy Now](#)

Secure transaction

Add gift options

[Add to Wish List](#)

[Add to Baby Wish List](#)



SIGN IN DELIVERY & PAYMENT PLACE ORDER COMPLETE PAYMENT

Select a delivery address



Select a payment method



Your saved credit and debit cards

Name on card

[Place your order](#)

Order Summary

Items:	₹677.00
Delivery:	₹40.00
Total:	₹717.00
Promotion Applied:	-₹40.00

Order Total: ₹677.00

Your Savings: ₹ 262.00 (28%)

- FREE Delivery
- Item discount

[Details](#)

[How are delivery costs calculated?](#)

[Why didn't I qualify for FREE Delivery?](#)

Safety

- Protecting the user from dangerous conditions and undesirable situations
- E.g. X ray machines, chemical plants



Therac - 25



Safety

- Helping users in any situation to avoid carrying out unwanted actions accidentally
 - Reduce the risk of wrong keys being pressed
 - Provide a means of recovery if you made errors



Reflection Spot

Recall software applications that you have used.

Are there ways in which these applications helped -

- Reduce the risk of wrong keys being pressed
- Provide a means of recovery if you made errors

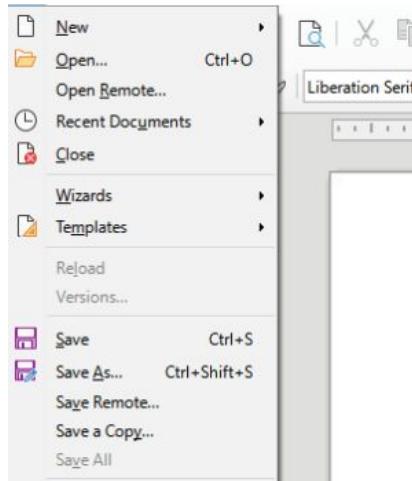


Please pause the video and written down your responses



Safety

- Helping users in any situation to avoid carrying out unwanted actions accidentally
 - Reduce the risk of wrong keys being pressed



Save and close
are far apart



Safety

- Helping users in any situation to avoid carrying out unwanted actions accidentally
 - Provide a means of recovery if you made errors
 - Accidentally deleted a file → recover from trash
 - Computer accidentally shut down while editing a document → recovery options
 - Undo - Ctrl Z
 - WhatsApp - Delete a message!



Learnability

- How easy a system is to learn to use
- Want to get started right away and carry out tasks without much effort
- E.g. - FB, Instagram, WhatsApp, Amazon



Reflection Spot

But what about complex tasks?

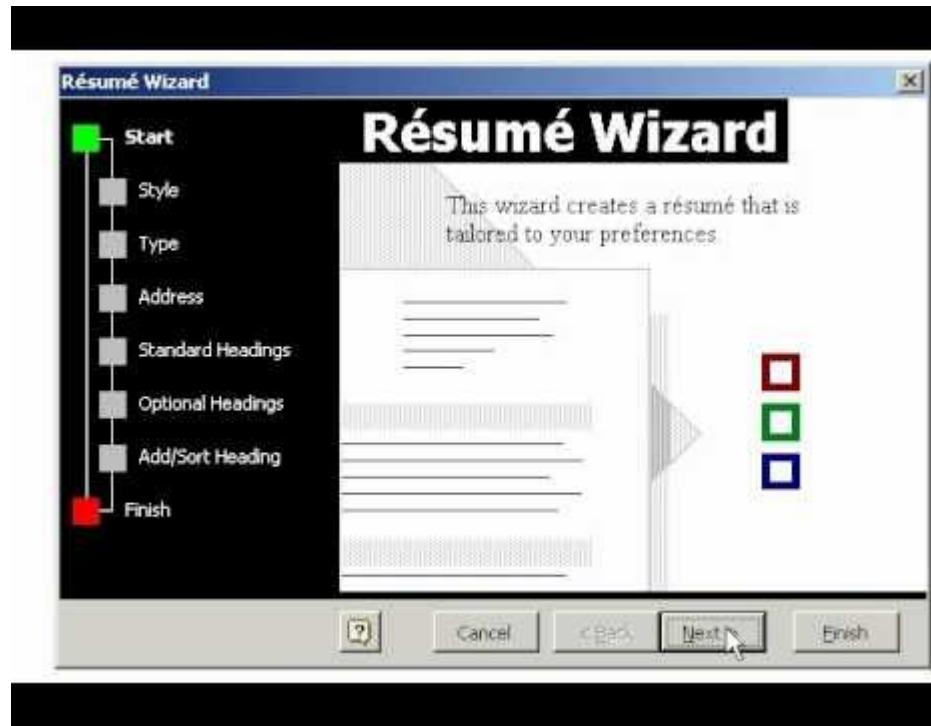
What are ways in which you can help users learn how to use your system?



Please pause the video and written down your responses



Learnability - Complex Tasks



Learnability - Complex Tasks

The screenshot shows the homepage of the Intro.js website. At the top, the title "Intro.js" is displayed with a red circular badge containing the number "2" to its left. Below the title, a large button reads "Step-by-step guide and feature introduction". To the left of this button, a text box contains the message: "This is a simple step-by-step guide made using Introjs". Above this text box are two buttons: "DOWNLOAD" and "DEMO". Below the text box is a "COMMERCIAL USE" section. At the bottom of the main content area are three icons with corresponding text: "No dependencies, fast and small" (with a double arrow icon), "User-friendly" (with a person icon), and "Browser compatibility" (with a globe icon). Each of these sections also includes a brief explanatory text.

2

Step-by-step guide and feature introduction

This is a simple step-by-step guide made using Introjs

DOWNLOAD DEMO

COMMERCIAL USE

Skip ← Back Next →

No dependencies, fast and small

10KB JavaScript and 2.5KB CSS,
that's all (minified, gzipped).

User-friendly

Navigate using keyboard or mouse.
Easily change the themes for your

Browser compatibility

Works on Google Chrome, Mozilla
Firefox, Opera, Safari and even



Learnability - Complex Tasks

Recently used



Blank



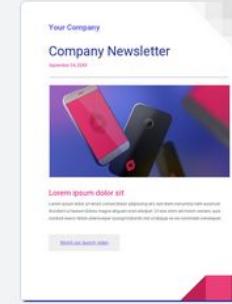
Sales quote
by PandaDoc



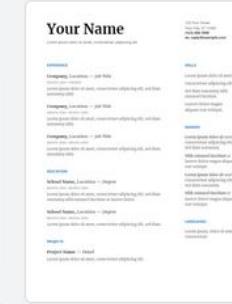
Statement of work
by Upwork



Brochure
Geometric



Newsletter
Geometric



Resume
Serif

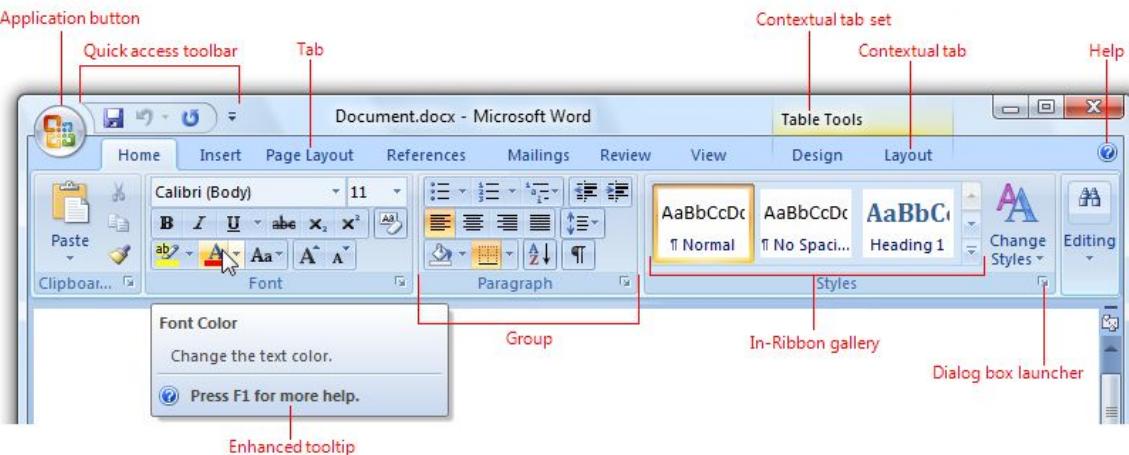


Resume
Coral



Memorability

How easy a system is to remember how to use, once learned



User Experience Goals

- Want users to experience positive emotions while using the software
- E.g. - satisfying, enjoyable, fun, helpful, entertaining, helpful, motivating, emotionally fulfilling etc.
- More subjective
- How users experience a product from their perspective



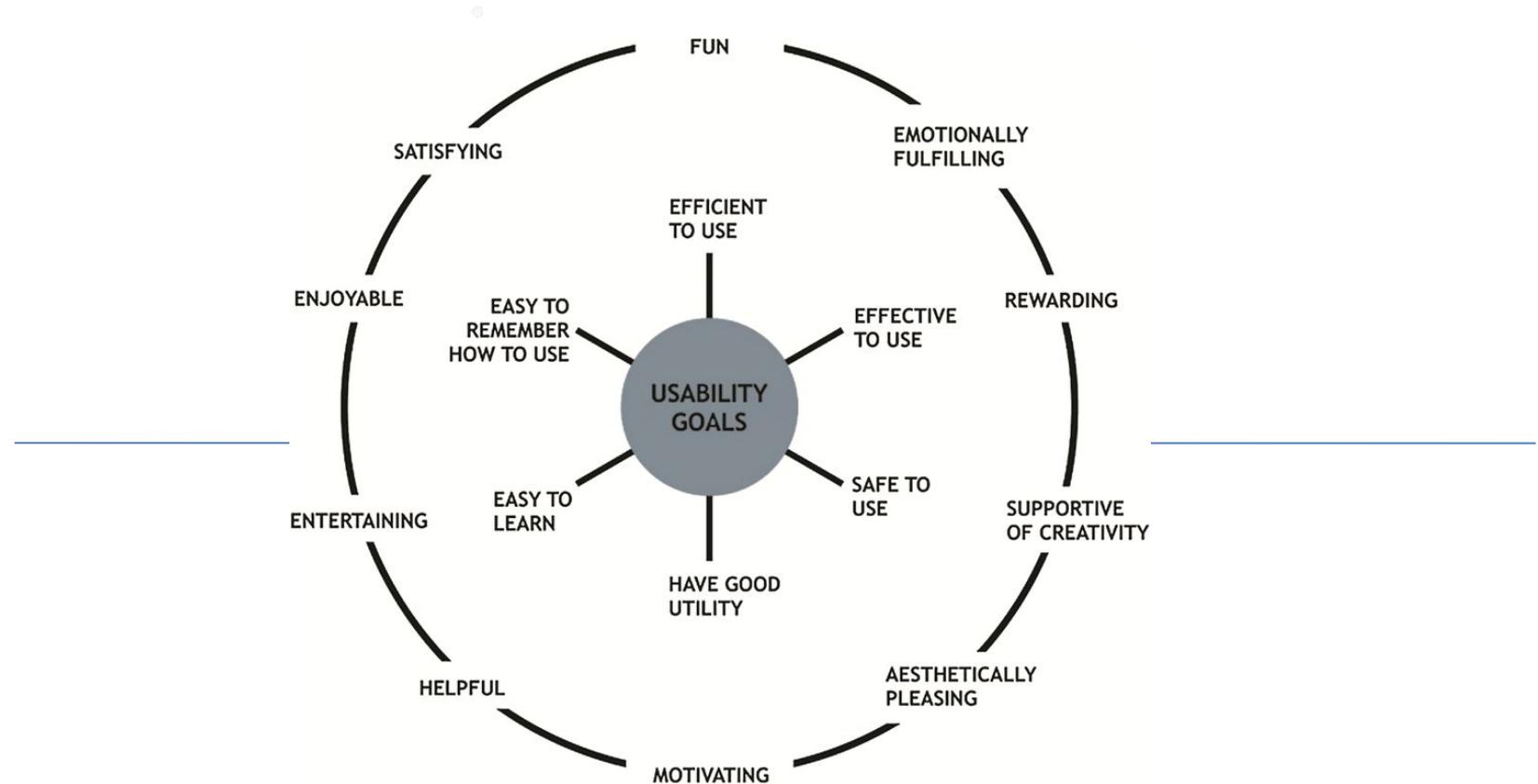


Diagram Jennifer Preece on usability goals and user experience.
Source: www.sharritt.com/CISCHIExam/preece.html



Software Engineering

Prototyping Techniques

Dr. Sridhar Iyer, IIT Bombay

Dr. Prajish Prasad, FLAME University



Recap

- Goals and principles to design “usable” interfaces
- Process of interaction design -
 - Identifying needs and requirements
 - Developing alternative design that meet those requirements
 - Build interactive versions
 - Evaluate



Reflection Spot

Are we ready to code? Why shouldn't we code the UI right away?



Please pause the video and written down your responses



Why we shouldn't start coding

- Initial design ideas might not be the best ones
- Developing an interface takes time, money, effort
- Prototypes allow you to quickly test on users, get feedback, iterate, and pivot

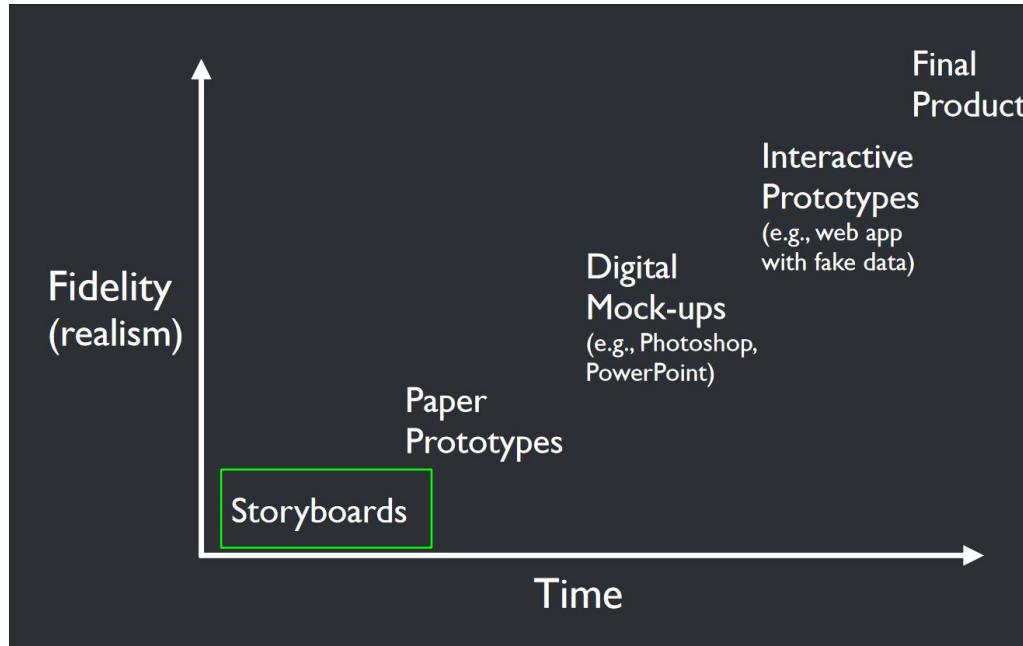


Prototyping

- Prototypes answer questions and support designers in choosing between alternatives.
- Purpose -
 - Test out technical feasibility of an idea
 - Clarify some vague requirements
 - User testing and evaluation



Types of Prototypes



Taken from Prof. Philip Guo's Intro to HCI course -
<https://ixd.ucsd.edu/home/f16/lectures/IntroHCI-f16-Week2.pdf>



Storyboard

A hand-drawn comic that features:
Setting + Sequence + Satisfaction

Setting

- People involved
- Environment
- Task being accomplished

Sequence

- What steps are involved?
- What leads someone to use the app?
- What task is being illustrated?

Satisfaction

- What motivates people to use the system?
- What does it enable people to accomplish?
- What need does the system fill?



Storyboard example

Speak-Up - Virtual reality tool to help give effective presentations

- Simulate a presentation setting
- Recording of audio during the presentation
- Hints are provided during the presentation process

Taken from Introduction to Human Computer Interaction course - Prof. Chandan Dasgupta - IIT Bombay
Team members - Nagesh Pokle, Deepika Kanodia, Vishvanath Falegaonkar, Dr. Veenita Shah

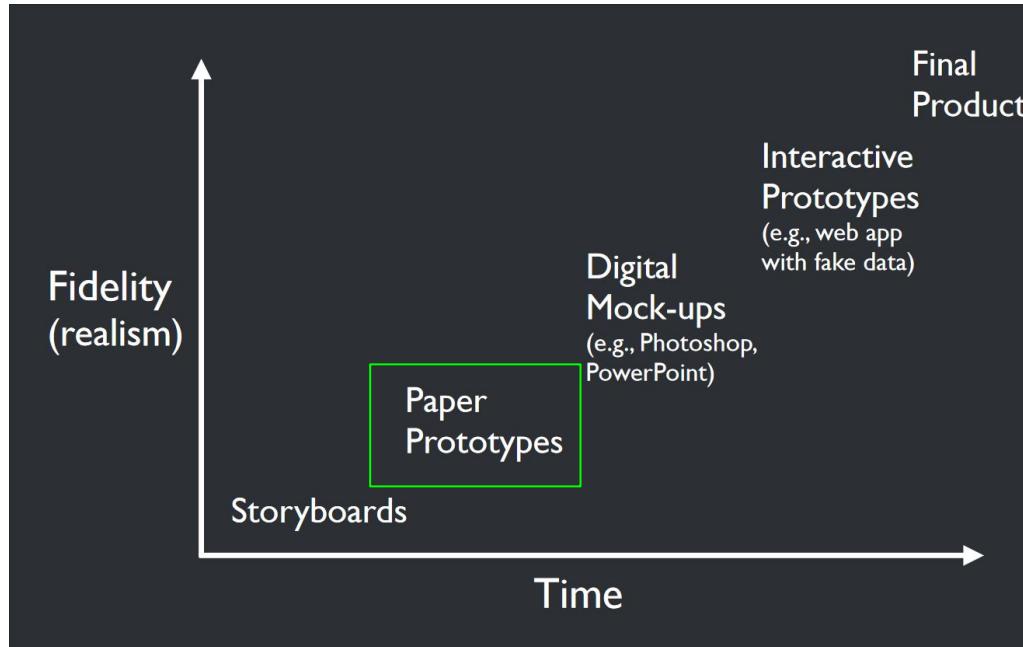


Benefits of Storyboard

- Emphasizes how interface accomplishes a task
- Avoids commitment to a particular user interface
- Shared understanding among stakeholders



Types of Prototypes



Taken from Prof. Philip Guo's Intro to HCI course -
<https://ixd.ucsd.edu/home/f16/lectures/IntroHCI-f16-Week2.pdf>



Paper Prototypes

- Hand-drawn interface
- Multiple pieces of paper



Paper Prototypes Example

Online Library for Deaf and Hard of Hearing (DHH) and Speech Impaired Students

- Books in Indian Sign Language (ISL)
- Speech Therapy

Taken from Introduction to Human Computer Interaction course - Prof. Chandan Dasgupta - IIT Bombay
Team members - Meera Daulatrao Pawar, Jyoti Kolap, Nisumba Soodhani K, Vijaya Singh, Devanshu Saindane

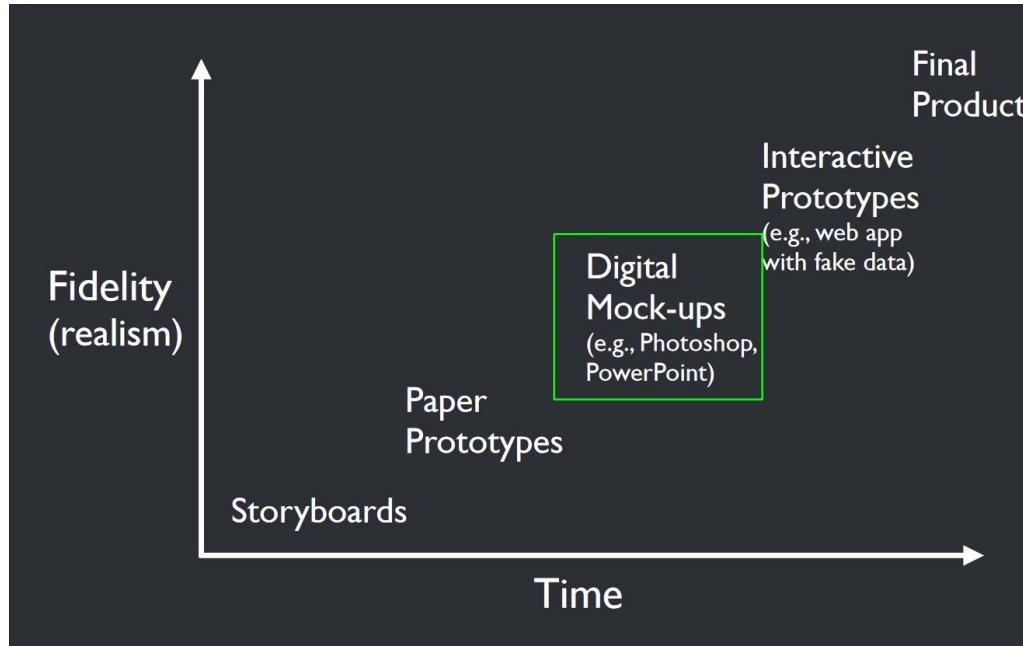


Benefits of Paper Prototypes

- Easier than writing code for user interface
- Starts conversation about user interactions
- Elements can be changed immediately based on given feedback



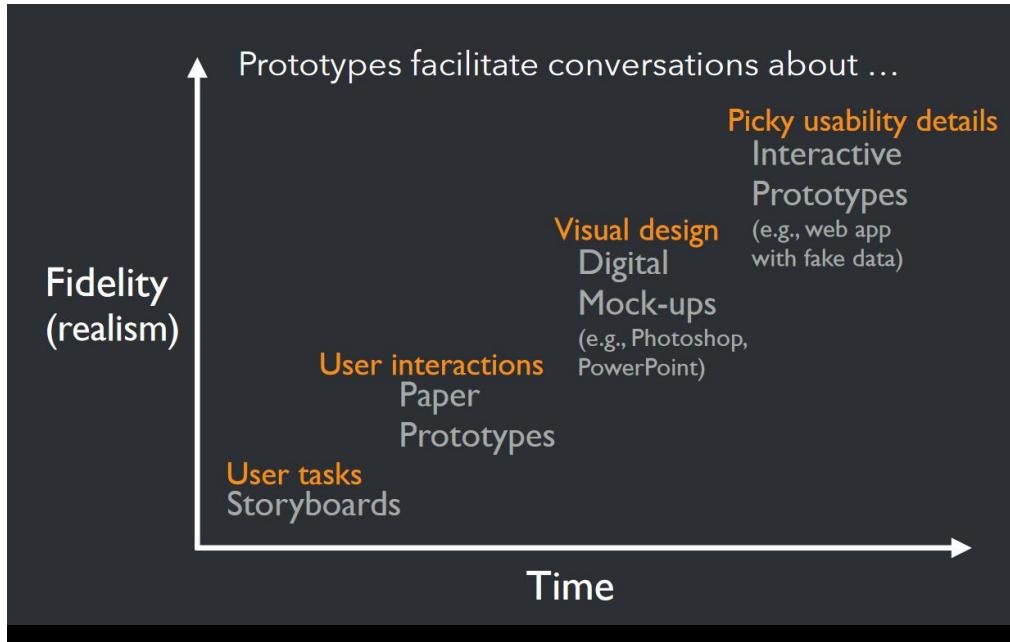
Types of Prototypes



Taken from Prof. Philip Guo's Intro to HCI course -
<https://ixd.ucsd.edu/home/f16/lectures/IntroHCI-f16-Week2.pdf>



Summary



Taken from Prof. Philip Guo's Intro to HCI course -
<https://ixd.ucsd.edu/home/f16/lectures/IntroHCI-f16-Week2.pdf>



Software Engineering

Evaluation using Design Heuristics - Heuristics for Understanding

Dr. Sridhar Iyer, IIT Bombay

Dr. Prajish Prasad, FLAME University



Recap

- Usability, user experience goals
- Prototyping

How do we evaluate the UI of the prototype?



Reflection Spot

What are ways in which you can evaluate the user interface of your prototype?



Please pause the video and written down your responses



Evaluation of User Interface

- Assess with real users
- Critique from expert designers
 - Subjective?
 - Specific guidelines



Heuristic Evaluation

- Heuristics are the strategies derived from previous experiences with similar problems
- Rules of thumb/guidelines



Heuristic Evaluation

UNDERSTANDING



Consistency



Use Familiar
Metaphors & Language



Clean & Functional Design

ACTION



Freedom



Flexibility



Recognition Over
Recall

FEEDBACK



Show Status



Prevent Errors



Support Error
Recovery



Provide Help

Created by Prof. Scott Klemmer - Human-Centered Design: an Introduction shared via CC BY 4.0
Adapted from Jacob Nielsen's heuristics - <https://www.nngroup.com/articles/ten-usability-heuristics/>



Heuristic Evaluation

UNDERSTANDING



Consistency



Use Familiar
Metaphors & Language



Clean & Functional Design

ACTION



Freedom



Flexibility



Recognition Over
Recall

FEEDBACK



Show Status



Prevent Errors



Support Error
Recovery



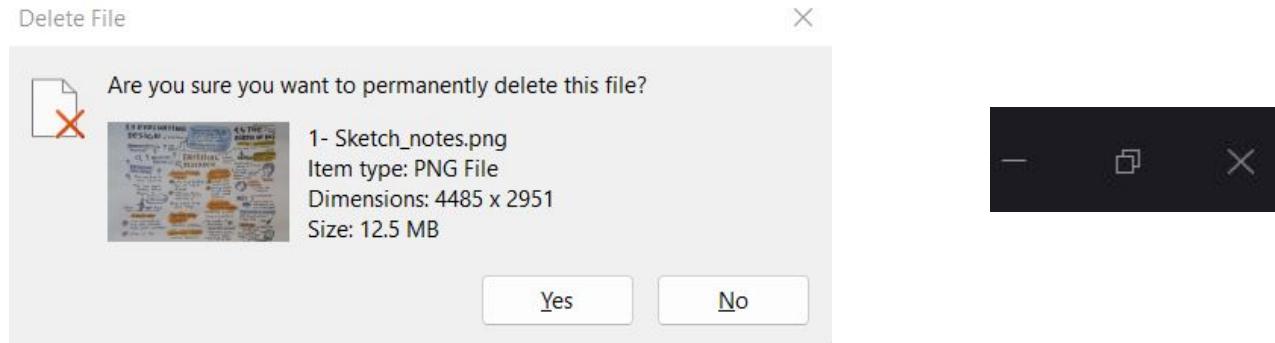
Provide Help

Created by Prof. Scott Klemmer - Human-Centered Design: an Introduction shared via CC BY 4.0
Adapted from Jacob Nielsen's heuristics - <https://www.nngroup.com/articles/ten-usability-heuristics/>



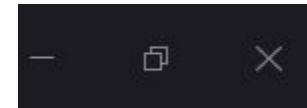
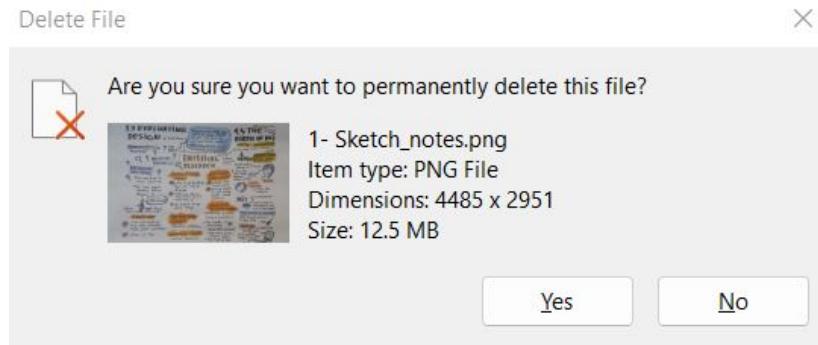
Heuristics for Understanding

- Consistency
 - Consistent Layout



Heuristics for Understanding

- Consistency
 - Consistent Layout



- Consistent Name



Heuristic Evaluation

UNDERSTANDING



Consistency



Use Familiar
Metaphors & Language



Clean & Functional Design

ACTION



Freedom



Flexibility



Recognition Over
Recall

FEEDBACK



Show Status



Prevent Errors



Support Error
Recovery



Provide Help

Created by Prof. Scott Klemmer - Human-Centered Design: an Introduction shared via CC BY 4.0
Adapted from Jacob Nielsen's heuristics - <https://www.nngroup.com/articles/ten-usability-heuristics/>



Heuristics for Understanding

Use Familiar Languages and Metaphors

- Online Shopping

Shopping Cart
[Deselect all items](#)



- Paying Online - “Mobile Wallet”



Heuristic Evaluation

UNDERSTANDING



Consistency



Use Familiar
Metaphors & Language



Clean & Functional Design

ACTION



Freedom



Flexibility



Recognition Over
Recall

FEEDBACK



Show Status



Prevent Errors



Support Error
Recovery



Provide Help

Created by Prof. Scott Klemmer - Human-Centered Design: an Introduction shared via CC BY 4.0
Adapted from Jacob Nielsen's heuristics - <https://www.nngroup.com/articles/ten-usability-heuristics/>



Heuristics for Understanding

Clean and Functional Design



Heuristics for Understanding

Clean and Functional Design

Flights **SALE**

Hotels **DEALS**

Cleartrip for Work

Top Offers

Gift Card

Support

Manage trips

Search flights

Fly anywhere. Fly everywhere.

One way Round trip

From Any worldwide city or airport To Any worldwide city or airport

Depart on Thu, Jul 7 Return on Sun, Jul 10

Adults 1 Children 0 Infants 0
2 - 11 yrs Below 2 yrs

More options: Class of travel, Airline preference

Search flights



Summary

UNDERSTANDING	ACTION	FEEDBACK
 Consistency	 Freedom	 Show Status
 Use Familiar Metaphors & Language	 Flexibility	 Prevent Errors
 Clean & Functional Design	 Recognition Over Recall	 Support Error Recovery

Created by Prof. Scott Klemmer - Human-Centered Design: an Introduction shared via CC BY 4.0
Adapted from Jacob Nielsen's heuristics - <https://www.nngroup.com/articles/ten-usability-heuristics/>



Software Engineering

Evaluation using Design Heuristics - Heuristics for Action

Dr. Sridhar Iyer, IIT Bombay

Dr. Prajish Prasad, FLAME University



Heuristic Evaluation

UNDERSTANDING



Consistency



Use Familiar
Metaphors & Language



Clean & Functional Design

ACTION



Freedom



Flexibility



Recognition Over
Recall

FEEDBACK



Show Status



Prevent Errors



Support Error
Recovery



Provide Help

Created by Prof. Scott Klemmer - Human-Centered Design: an Introduction shared via CC BY 4.0
Adapted from Jacob Nielsen's heuristics - <https://www.nngroup.com/articles/ten-usability-heuristics/>



Freedom

- Freedom to Undo
 - Deleted a file? Recover from trash
 - Document - recovery options
 - Undo - Ctrl Z



Freedom

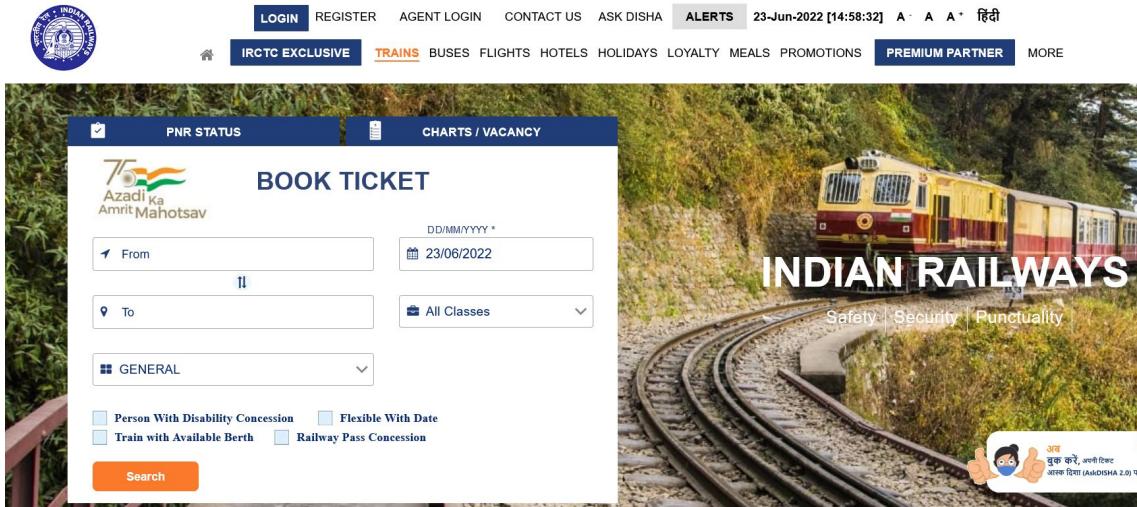
- Freedom to Explore

The screenshot shows the homepage of the IRCTC website. At the top, the logo and name "Indian Railway Catering and Tourism Corporation Limited" are displayed, along with the subtitle "A Government of India Enterprise". Below the header, there is a navigation bar with links for "IRCTC Beta Version", "हिन्दी वेबसाइट (Beta)", and "Contact Us". The main menu includes "Train Reservation" (with a search icon), "Hotels", "Tourist Trains", "Tour Packages", and "Loyalty Program". On the left, a "Login" form is shown with fields for "Username" and "Password", and options for "Train Ticket", "Tourism Services", and "Mumbai Season Ticket". Below the login form are links for "Signup", "Forgot Password", "Agent Login", and "Find Agents". A "Help & Info" section at the bottom provides links for "Enquiries", "Loyalty Program", "Special Offers", "IRCTC Zone", "Mobile Zone", and "Catering". On the right, there are sections for "IRCTC Updates / Alerts" (warning about user ID requirements), "SMS 139" (24x7 Customer Care), and "Chennai Customer Care" (with phone numbers and email). The footer features the Indian Institute of Technology Madras logo.



Freedom

- Freedom to Explore



Heuristic Evaluation

UNDERSTANDING



Consistency



Use Familiar
Metaphors & Language



Clean & Functional Design

ACTION



Freedom



Flexibility



Recognition Over
Recall

FEEDBACK



Show Status



Prevent Errors



Support Error
Recovery



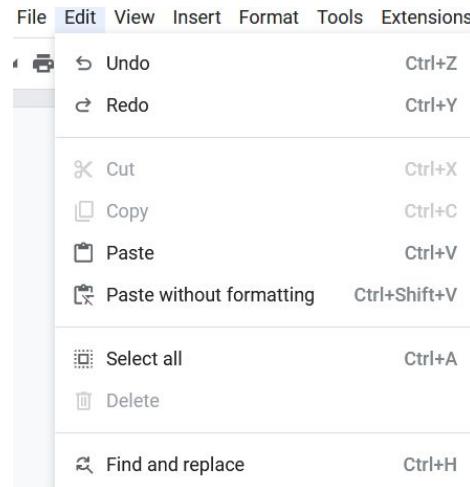
Provide Help

Created by Prof. Scott Klemmer - Human-Centered Design: an Introduction shared via CC BY 4.0
Adapted from Jacob Nielsen's heuristics - <https://www.nngroup.com/articles/ten-usability-heuristics/>



Flexibility

- Experts as well as new users should be able to carry out tasks efficiently
- Example: Word, Google Docs etc.



Flexibility

- **Personalization** - Tailoring content/functionality for individual users
 - Social media apps
- **Customization** - allow users to make selections about how they want the product to work
 - E.g. - News apps - asks users to select which topics they want news about



Heuristic Evaluation

UNDERSTANDING



Consistency



Use Familiar
Metaphors & Language



Clean & Functional Design

ACTION



Freedom



Flexibility



Recognition Over
Recall

FEEDBACK



Show Status



Prevent Errors



Support Error
Recovery



Provide Help

Created by Prof. Scott Klemmer - Human-Centered Design: an Introduction shared via CC BY 4.0
Adapted from Jacob Nielsen's heuristics - <https://www.nngroup.com/articles/ten-usability-heuristics/>



Recognition over Recall

- Users find it easier to recognize something they have seen earlier
- E.g -
 - Pre-GUI era - Moving a file from one location to another in linux?
 - `mv temp.txt new_folder/`
 - Now - Moving a file from one location to another?
 - Right click on the file!

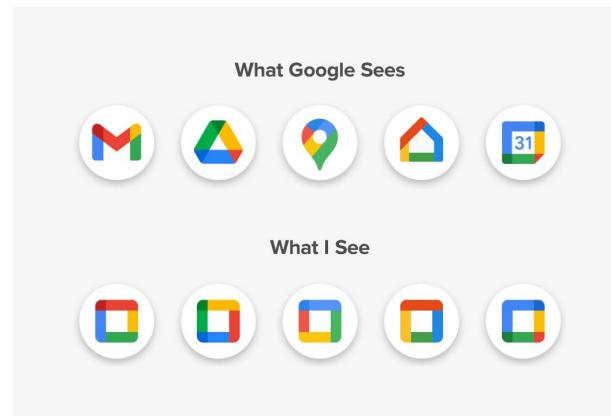


Recognition over Recall

- Interface - buttons, navigation etc. should help the user reach his goal



<https://techcrunch.com/2020/10/06/googles-new-logos-are-bad/>



<https://thehardcopy.co/is-the-criticism-of-google-icons-justified/>



Software Engineering

Evaluation using Design Heuristics - Heuristics for Feedback

Dr. Sridhar Iyer, IIT Bombay

Dr. Prajish Prasad, FLAME University



Heuristic Evaluation

UNDERSTANDING



Consistency



Use Familiar
Metaphors & Language



Clean & Functional Design

ACTION



Freedom



Flexibility



Recognition Over
Recall

FEEDBACK



Show Status



Prevent Errors



Support Error
Recovery



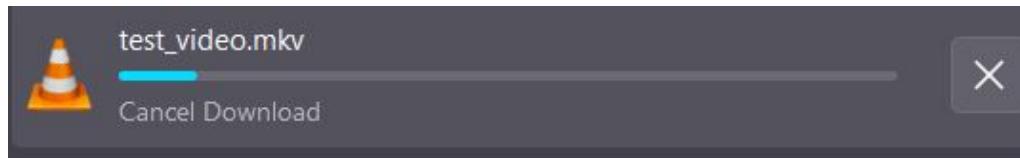
Provide Help

Created by Prof. Scott Klemmer - Human-Centered Design: an Introduction shared via CC BY 4.0
Adapted from Jacob Nielsen's heuristics - <https://www.nngroup.com/articles/ten-usability-heuristics/>



Show Status

- Keep users informed about what is happening, through appropriate feedback within a reasonable amount of time.
 - Loading Status in browsers
 - How much time a particular action will take



Show Status

- Provide next steps
 - Example form signup, email signup
- Provide warnings in advance



Heuristic Evaluation

UNDERSTANDING



Consistency



Use Familiar
Metaphors & Language



Clean & Functional Design

ACTION



Freedom



Flexibility



Recognition Over
Recall

FEEDBACK



Show Status



Prevent Errors



Support Error
Recovery



Provide Help

Created by Prof. Scott Klemmer - Human-Centered Design: an Introduction shared via CC BY 4.0
Adapted from Jacob Nielsen's heuristics - <https://www.nngroup.com/articles/ten-usability-heuristics/>



Prevent Errors

- Why do users make errors?



Prevent Errors

Include helpful constraints

One way Round trip

From To

Depart on Return on

← July 2022 →

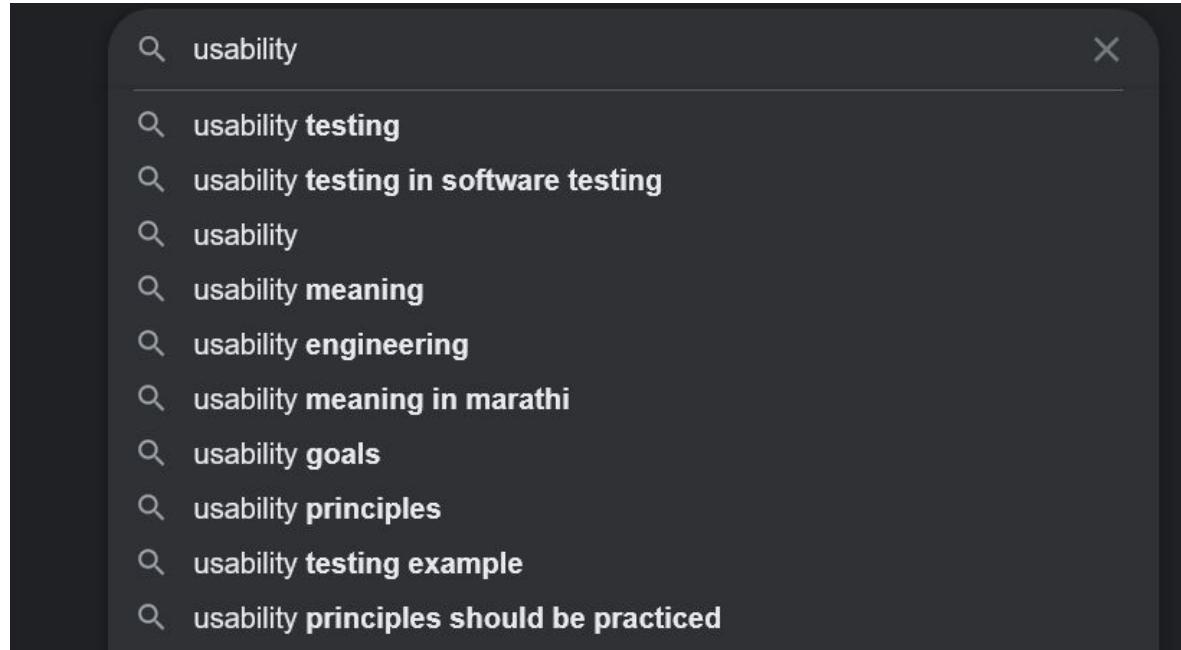
M	T	W	T	F	S	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

M	T	W	T	F	S	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				



Prevent Errors

Offer Suggestions



Heuristic Evaluation

UNDERSTANDING



Consistency



Use Familiar
Metaphors & Language



Clean & Functional Design

ACTION



Freedom



Flexibility



Recognition Over
Recall

FEEDBACK



Show Status



Prevent Errors



Support Error
Recovery



Provide Help

Created by Prof. Scott Klemmer - Human-Centered Design: an Introduction shared via CC BY 4.0
Adapted from Jacob Nielsen's heuristics - <https://www.nngroup.com/articles/ten-usability-heuristics/>



Support Error Recovery

Make the problem clear

Sign Up ×

It's quick and easy.

First name ! Surname !

Mobile number or email address !

New password !

Date of birth ? !

19 ▼ Jul ▼ 2022 ▼

Gender ? !

Female Male Custom

People who use our service may have uploaded your contact information to Facebook. [Learn more](#).

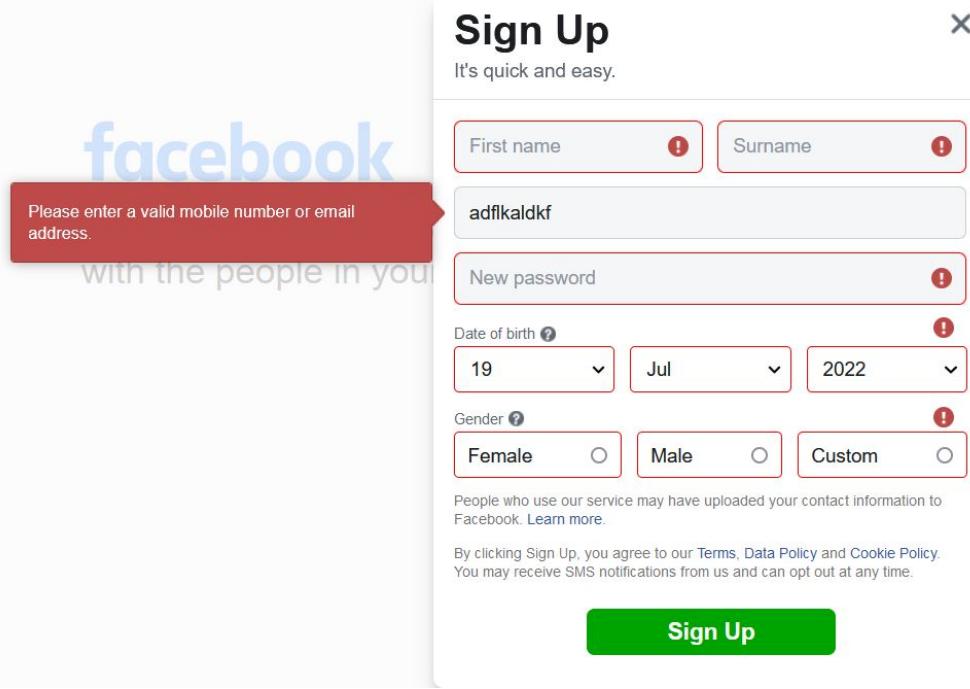
By clicking Sign Up, you agree to our [Terms](#), [Data Policy](#) and [Cookie Policy](#).
You may receive SMS notifications from us and can opt out at any time.

Sign Up



Support Error Recovery

Provide a solution



The image shows a screenshot of the Facebook sign-up process. At the top, it says "Sign Up" and "It's quick and easy." Below that, there are fields for "First name" and "Surname", both of which have red exclamation marks indicating they are required. The "First name" field contains "adfikaldkf". The next field is for "New password", also with a red exclamation mark, containing "adflkaldkf". Below that is a "Date of birth" field with three dropdowns for day (19), month (Jul), and year (2022), each with a red exclamation mark. Underneath these is a "Gender" section with three options: "Female", "Male", and "Custom", each with a red exclamation mark. A note at the bottom left states: "People who use our service may have uploaded your contact information to Facebook. Learn more." A note at the bottom right states: "By clicking Sign Up, you agree to our Terms, Data Policy and Cookie Policy. You may receive SMS notifications from us and can opt out at any time." A large green "Sign Up" button is at the bottom.

Please enter a valid mobile number or email address.

with the people in your life.

Sign Up

It's quick and easy.

First name ! Surname !

adfikaldkf

New password !

Date of birth ? !

19 Jul 2022

Gender ? !

Female Male Custom

People who use our service may have uploaded your contact information to Facebook. [Learn more](#).

By clicking Sign Up, you agree to our [Terms](#), [Data Policy](#) and [Cookie Policy](#). You may receive SMS notifications from us and can opt out at any time.

Sign Up



Support Error Recovery

Provide an alternative

A screenshot of a search engine interface. The search bar at the top contains the query "jacob neilson". To the right of the search bar are a close button ("X") and a magnifying glass icon. Below the search bar is a horizontal menu with the following options: All (highlighted with a blue underline), News, Images, Videos, Maps, More, and Tools. The "All" option is currently selected. Below the menu, the text "About 10,50,000 results (0.66 seconds)" is displayed. A red "Did you mean:" message follows, suggesting the correct spelling is "jakob nielsen".



Heuristic Evaluation

UNDERSTANDING



Consistency



Use Familiar
Metaphors & Language



Clean & Functional Design

ACTION



Freedom



Flexibility



Recognition Over
Recall

FEEDBACK



Show Status



Prevent Errors



Support Error
Recovery



Provide Help

Created by Prof. Scott Klemmer - Human-Centered Design: an Introduction shared via CC BY 4.0
Adapted from Jacob Nielsen's heuristics - <https://www.nngroup.com/articles/ten-usability-heuristics/>



Provide Help

Ensure help is easy to search

Help Last edit was 4 days ago

Search the menus (Alt+ /)

- ② Help
- 🎓 Training
- “(‘)” Updates

- ! Help Docs improve
- ⚠ Report abuse

- ☰ Privacy Policy
- ☰ Terms of Service

- ⌨ Keyboard shortcuts

Ctrl+/



Provide Help

Provide help in context

Add a new course

Expand a

▼ General

Course full name  

Course short
name

Course category ! ?

This setting determines whether the course appears in the list of courses and whether students can access it. If set to Hide, then access is restricted to users with the capability to view hidden courses (such as teachers).

Course visibility  appears in the list of courses and whether students can access it. If set to Hide, then access is restricted to users with the capability

Course start date	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/> 00	<input type="text"/> 00
-------------------	----------------------	----------------------	----------------------	-------------------------	-------------------------

Course end date 20  July  2023  00  00   Enabled

Course ID number 



Heuristic Evaluation

- Experts evaluate the prototype
 - Do multiple passes
 - List of issues that violate design heuristics

