

# User Interface Design



## Interface Design

- Initially users must adapt to complex systems
  - For being technical
- Now technology must consider human ease
- Usability matters a lot!!!!

# Interface Design

The image compares two different ways to handle a password error in a login form. Both forms have an 'E-mail' field with 'me@domain.com' and a 'Password' field with '\*\*\*\*\*'.

**Left Form (Poor Design):** Labeled with a red 'X' icon below it. It shows a plain 'Error!' message in red text below the password field. The password field itself has a standard black border.

**Right Form (Good Design):** Labeled with a green checkmark icon below it. It shows a more detailed error message: 'Password incorrect. If you don't remember your password, [reset it](#)'. The text is in red. The password field has a red border, and the asterisks inside are also red.

Design	Label	Error Message	Field Styling
Left	✗	Error!	Black border, black asterisks
Right	✓	Password incorrect. If you don't remember your password, <a href="#">reset it</a>	Red border, red asterisks

# Golden rules for UI design

(by Theo Mandel)

1

Place the user  
in control

2

Reduce user's  
memory load

3

Make a  
consistent  
interface

# Principle 1: Allow users to maintain control

- Define interactive modes that allow the user to let them do whatever they want freely
- Allow flexible interaction
- Allow user interaction to be uninterruptable and undoable

# Principle 1: Allow users to maintain control

- Allow creating customized operations
- Hide technical internals from casual users
- Design for direct interaction with on-screen objects

# Principle 2: Reduce User's memory load

- Well designed system doesn't test user's memory
- Reduce demand to learn more
- Establish meaningful defaults

# Principle 2: Reduce User's memory load

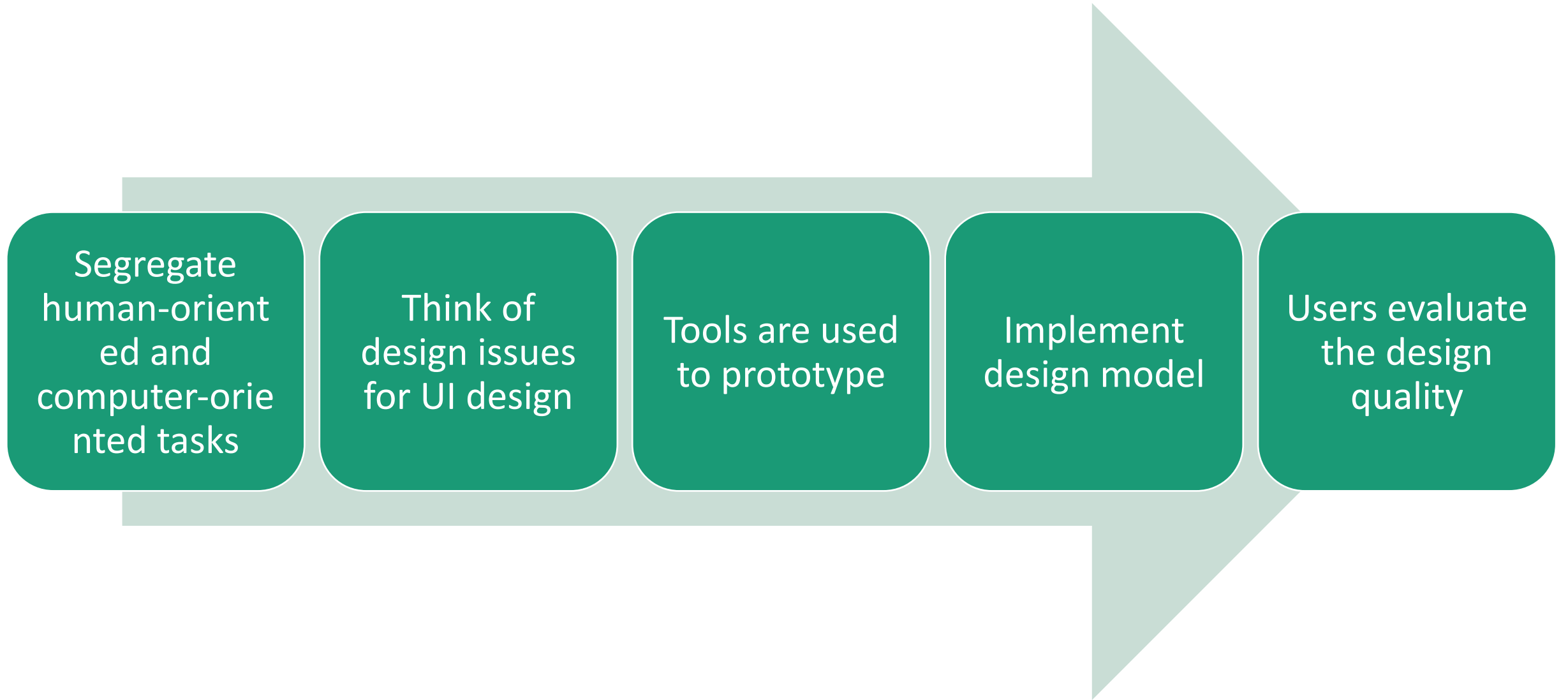
- Define intuitive shortcuts
- Visual layout should be near to real-time systems
- Disclose information in a progressive fashion



# Principle 3: Make consistent interface

- Allow users to put tasks in meaningful context
- Maintain consistency across a family of applications
- Don't make changes in system against user's previous habits, until you are compelled to do so

# UI Analysis & design



# UI Design models

## User model

- Analyze all end user profile
- Like age, gender, physical abilities, education, culture, preferences etc.
- User types:
  - Novice
  - Knowledgeable, intermittent users
  - Knowledgeable, frequent users

## Design model

- **Design realization of end user's model**

## System perception/mental model

- End user's perspective of a system

## Implementation model

- The interface look & feel along with supporting information (books, manuals, videotapes etc.) showing interface semantics.

# UI Design models

- Hence, an effective design is one in which the user mental model and implementation model coincides

# UI analysis & design Process

- Iterative process ~ use spiral process model
- Four steps are:
  - Interface analysis & modeling
  - Interface design
  - Interface construction ~ involve prototyping approach
  - Interface validation
- Since its spiral model so these steps need to be processed again and again

# What is a good Design?

- You need to design an application that shows the video of the security cameras in the home
- Options???
- A user must input the camera name to view the video
  - What if he forgets the name?
- We will list the cameras name from which he selects and view the video