

# **User Interface Design**

# Interface Design

Easy to learn?

Easy to use?

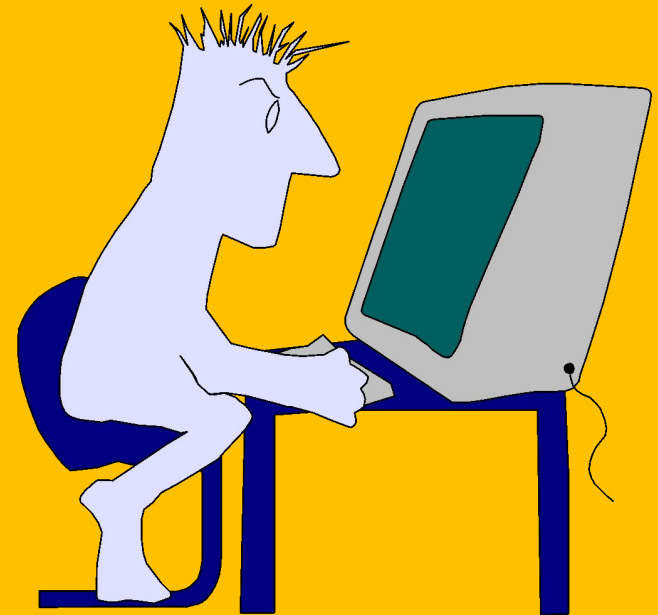
Easy to understand?



# Interface Design

## Typical Design Errors

- ❑ lack of consistency
- ❑ too much memorization
- ❑ no guidance / help
- ❑ no context sensitivity
- ❑ poor response
- ❑ Arcane/unfriendly



# **Golden Rules**

- 1. Place the user in control**
- 2. Reduce the user's memory load**
- 3. Make the interface consistent**

# **Place the User in Control**

- **Define interaction modes in a way that does not force a user into unnecessary or undesired actions.**
- **Provide for flexible interaction.**
- **Allow user interaction to be interruptible and undoable.**
- **Streamline interaction as skill levels advance and allow the interaction to be customized.**
- **Hide technical internals from the casual user.**
- **Design for direct interaction with objects that appear on the screen.**

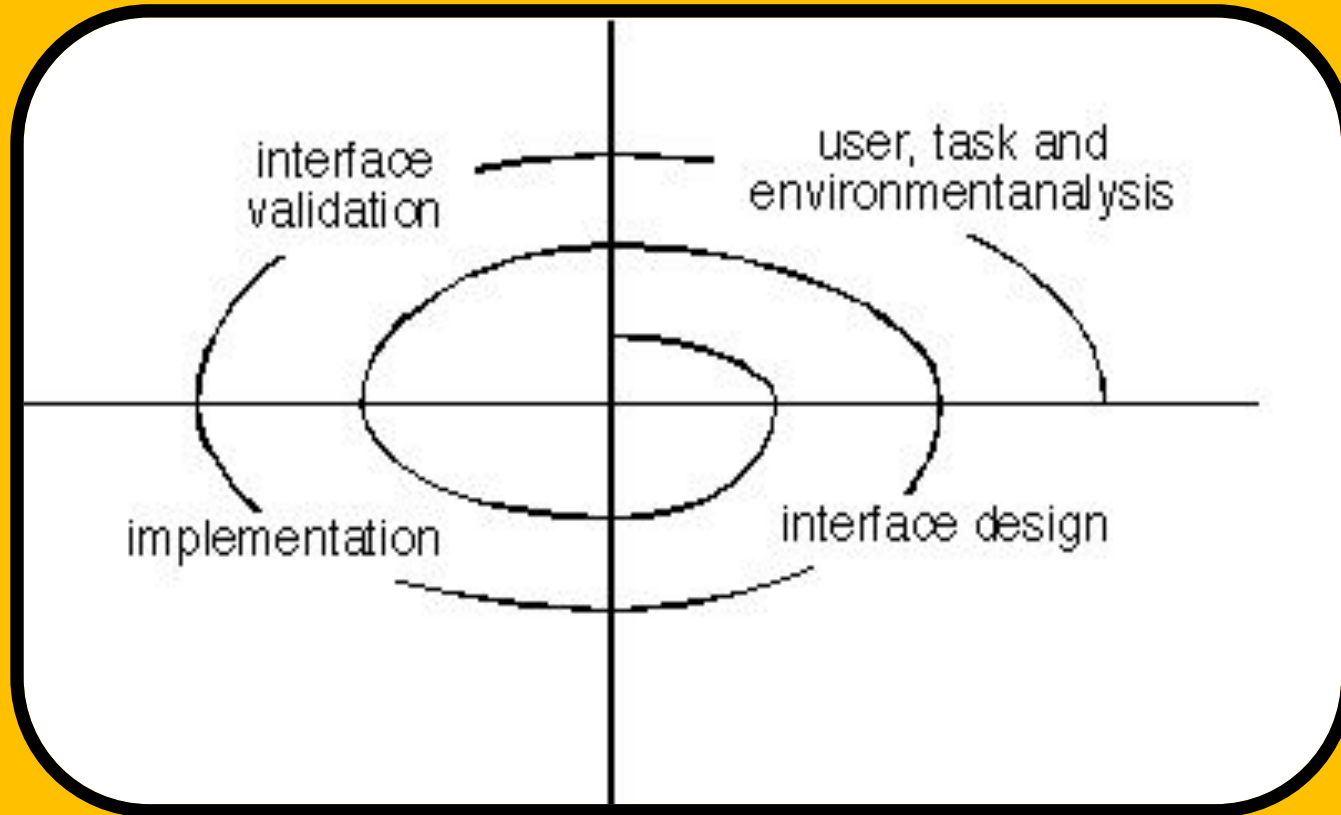
# **Reduce the User's Memory Load**

- **Reduce demand on short-term memory.**
- **Establish meaningful defaults.**
- **Define shortcuts that are intuitive.**
- **The visual layout of the interface should be based on a real world metaphor.**
- **Disclose information in a progressive fashion.**

# **Make the Interface Consistent**

- **Allow the user to put the current task into a meaningful context.**
- **Maintain consistency across a family of applications.**
- **If past interactive models have created user expectations, do not make changes unless there is a compelling reason to do so.**

# User Interface Design Process





# **Task Analysis and Modeling**

- **All human tasks required to do the job (of the interface) are defined and classified**
- **Objects (to be manipulated) and actions (functions applied to objects) are identified for each task**
- **Tasks are refined iteratively until the job is completely defined**

# **Interface Design Activities**

- 1. Establish the goals and intentions for each task.**
- 2. Map each goal/intention to a sequence of specific actions.**
- 3. Specify the action sequence of tasks and subtasks, also called a user scenario, as it will be executed at the interface level.**
- 4. Indicate the state of the system, i.e., what does the interface look like at the time that a user scenario is performed?**
- 5. Define control mechanisms, i.e., the objects and actions available to the user to alter the system state.**
- 6. Show how control mechanisms affect the state of the system.**
- 7. Indicate how the user interprets the state of the system from information provided through the interface.**

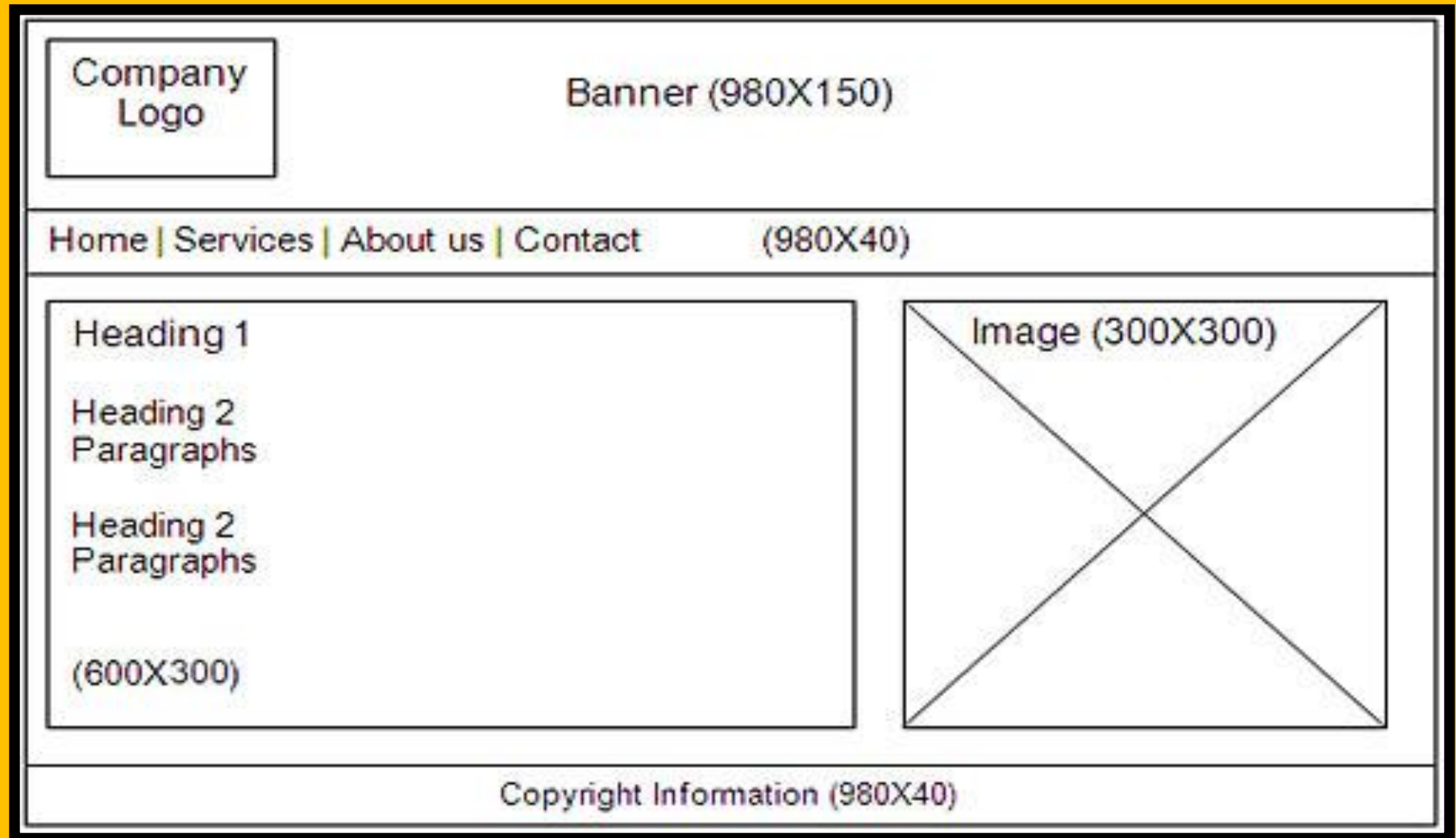
# **Common Design Issues**

- **System response time**
- **User help facilities**
- **Error information handling**
- **Command labeling**

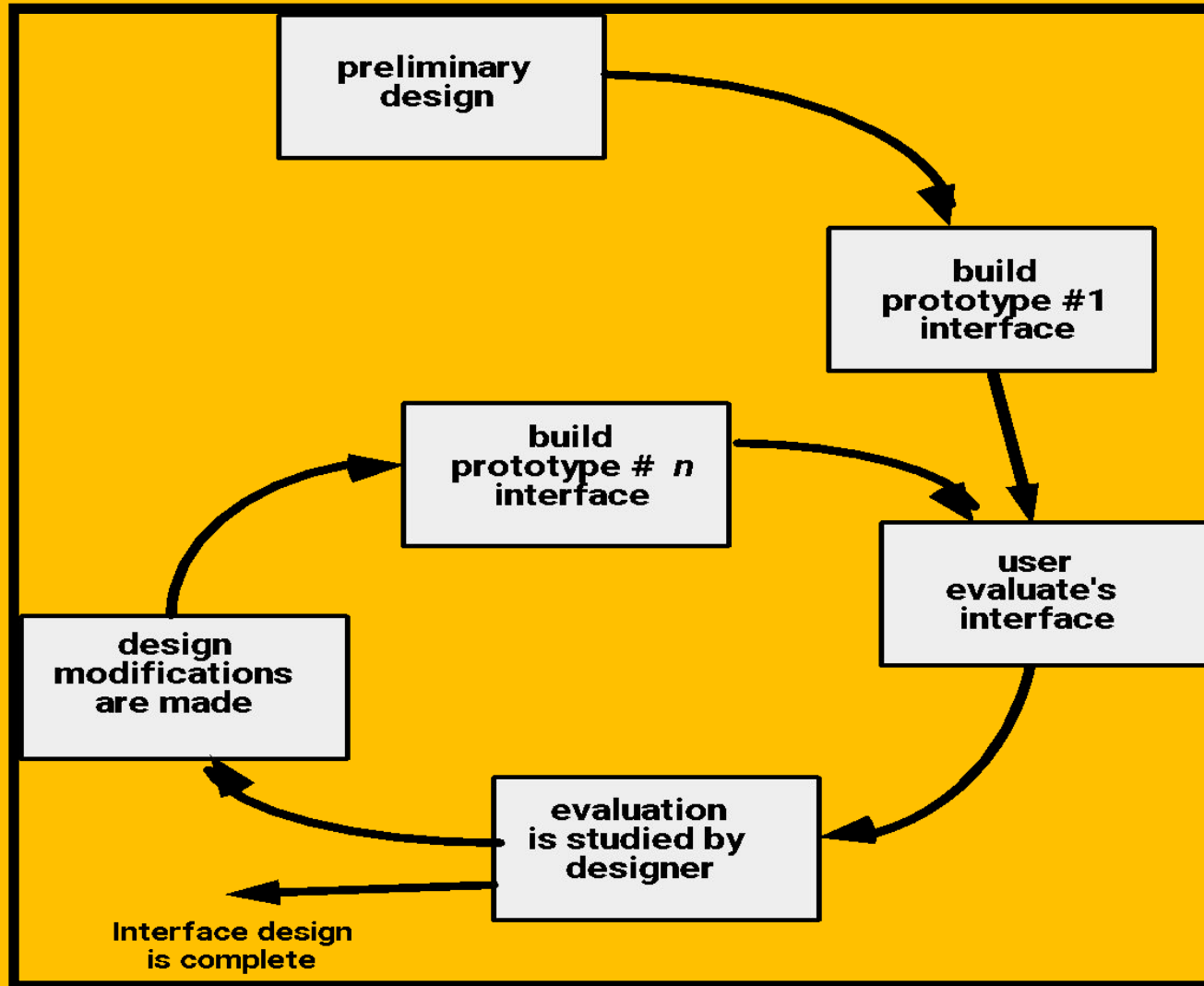
# Site Map and story board



# Story board



# Design Evaluation Cycle



**Thank you!**