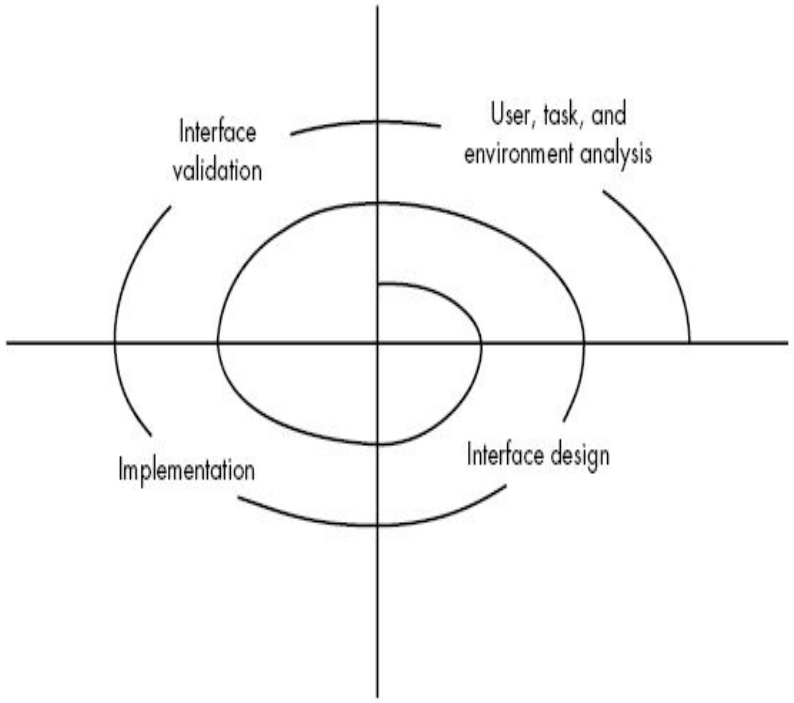
User Interface Design contd..

(Chapter 11- by Roger S. Pressman)

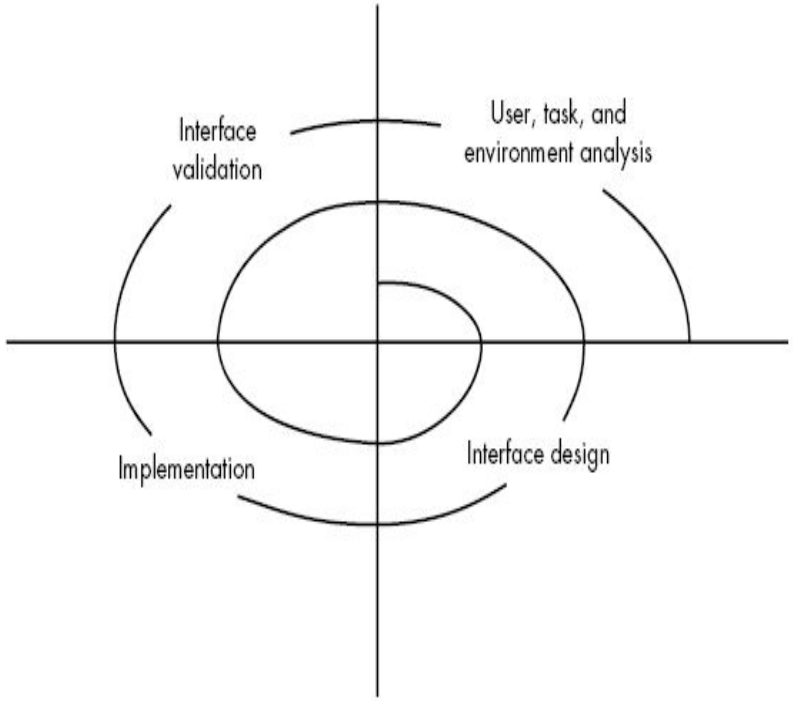
UI analysis & design Process

- Iterative process – It uses the spiral process model
- Four steps are:
  - Interface analysis
  - Interface design
  - Interface implementation/construction involves prototyping approach
  - Interface validation
- Since its spiral model so these steps need to be processed again and again for design betterment.



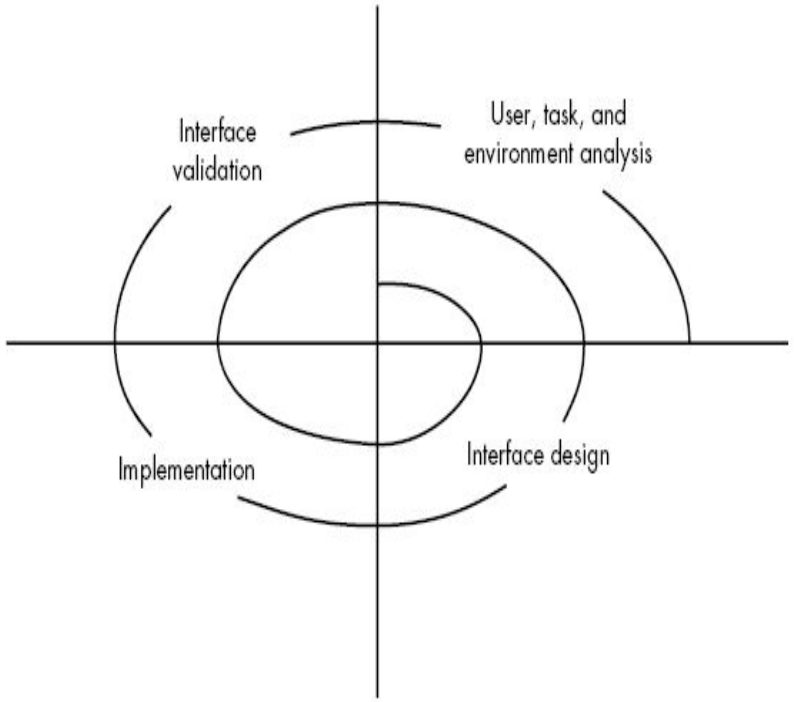
UI analysis & design Process

- User analysis:
  - Assess users' profile who are going to use the system.
  - Assessment related to skill level, business perception
  - Define different user categories
  - Gather requirements for each category & understand system by each category perspective.



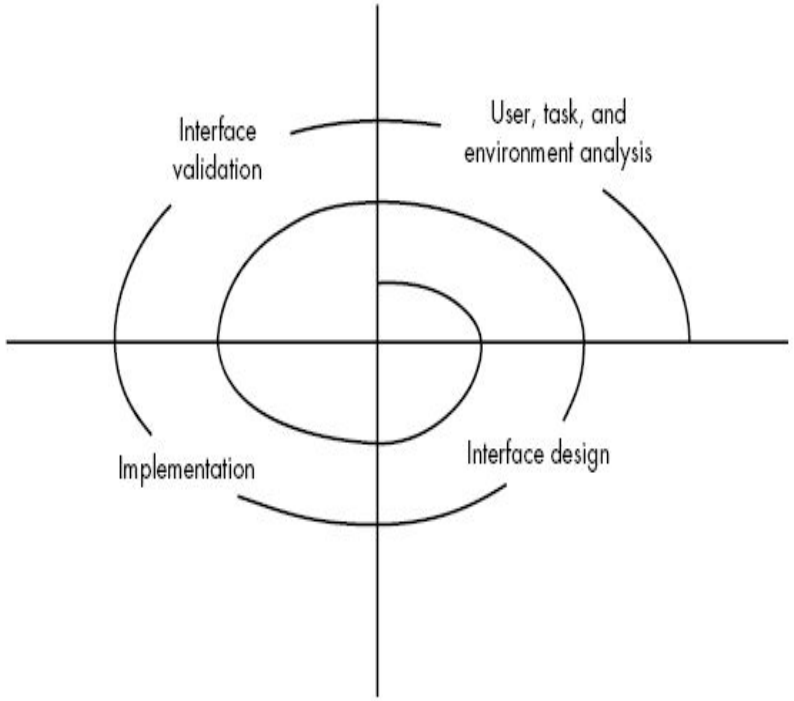
UI analysis & design Process

- Interface design:
  - A set of interface objects and actions along with their screen representation that allows user to perform all tasks and fulfil the usability goals of the system.
- Interface Construction/implementation:
  - Create prototype against a use case scenarios & validate the design.



UI analysis & design Process

- Interface validation:
  - Check if the system accommodates all variety of tasks?
  - Whether the system is easy to use & learn?
  - users' acceptance of a system as useful tool
- Now, we'll cover each separately in detail



Interface Analysis

- *User Analysis:*
- Understand problem before designing the solution.
  - Understand users of the system,
  - the system goals (tasks),
  - the displayed content,
  - the environment in which tasks is conducted.
- The mental image and the design model must converge.
  - Can be achieved by understanding the users and how they use the system

Interface Analysis

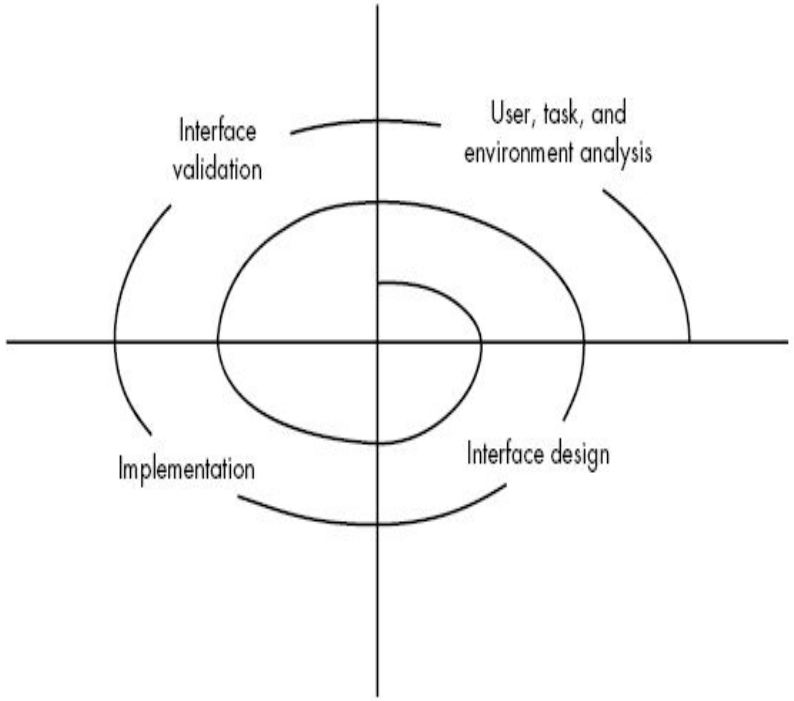
- Information for system understanding can be obtained by:
  - User interviews
    - s/w team members met with end users to identify their needs and work culture.
  - Sales input
    - Sales people meet with users to assess the user categories & understand req.
  - Marketing input
    - Take the market survey and check in how many ways the product could come handy.
  - Support input
    - Support staff takes feedback of the what work or what not. Which features are easy to use or not etc.

User Analysis questions for better user categorization

- Are **users trained professionals, technician, clerical, or manufacturing workers**?
- What level of formal education does the average user have?
- Are the users capable of learning from written materials or have they expressed a desire for classroom training?
- users expert typists / keyboard phobic?
- age range of the user community?
- User's gender?
- How are users compensated for the work they perform?
- Working hours: normal office hours / until the job is done?
- Software usage frequency ? (mostly/occasionally)
- primary spoken language among users?
- consequences if a user makes a mistake using the system?
- Are users experts in the subject matter that is addressed by the system?
- Are users interested in learning about the technology that sits behind the interface?

UI analysis & design Process

- task analysis:
  - Detailed task analysis done after interface analysis.
  - The tasks that users will perform to accomplish system goals.
- User environment analysis:
  - done to check if the current physical environment be able to cater the system needs?
- Output: Analysis model for interface



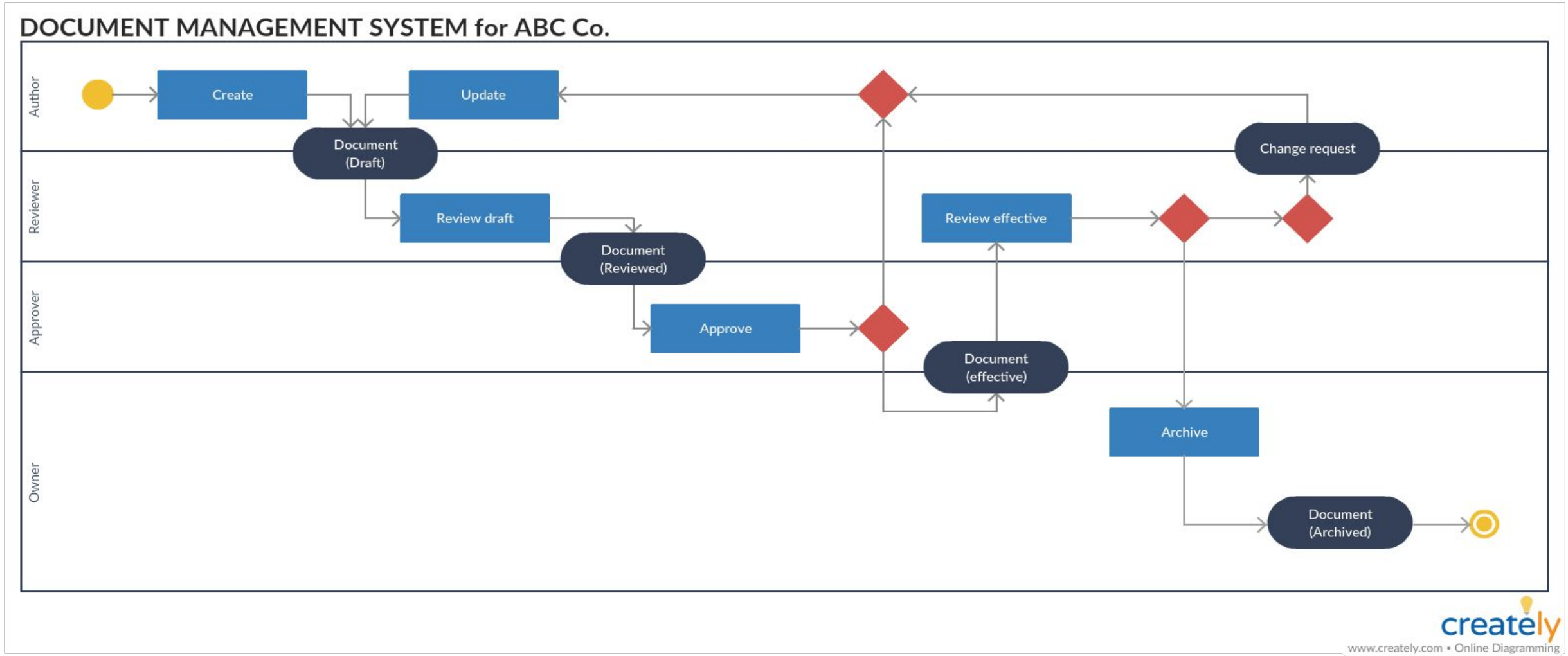
Interface Analysis

- *Task Analysis & Modelling*

- answer the given questions the following questions …
  - Task identification in specific circumstances.
  - Tasks and sub tasks performed by user
  - sequence of work tasks—the workflow
- Use-cases:
  - define basic interaction of actor and system
  - written using informal paragraphs.
  - Can be used to derive tasks, sub tasks and interfaces
- Task elaboration:
  - Stepwise elaboration or task refinement of interactive tasks
  - Derive either manually or use a preexisting system to identify them
- Object elaboration:
  - extract physical objects from system to define their classes and behavior
- Workflow analysis defines how a work process is
  - How a work process is completed when several people (and roles) are involved
  - Shown using UML swim line diagram

Interface Analysis

- *Task Analysis & Modelling*



Interface Analysis

- *Analysis of Display Content*
  - Format of the content
  - Aesthetics
  - Content displayed using stepwise refinement approach

- *Analysis of Physical Work Environment*
  - Work environment should be helpful in proper operation and concentration .
  - Must co-relate with the designed software aesthetics.