Prototyping

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Pertemuan #11

What is a Prototype?

- Concept which reflects the elements of the end state
- Includes critical functionality
  - Partially operational
  - Not necessarily able to implement
- Evolves iteratively
  - "Build a little, test a little . . ."
- Measures usability
- Reviewed by experts – those in the trenches

Allows the design team to explore working design alternatives

Why Prototype

- Test ideas; engage and involve stakeholders
- Identify and evaluate alternatives
  - Synthesize optimal solution
  - Clarify requirements
  - Validate consistency with overall system direction

Prototype Fidelity

- Degree of granularity and detail
- Low-fidelity
  - Simple
  - Inexpensive
  - Easy to produce
  - Easy to modify
- High-fidelity
  - More complex
  - Resembles the final product
    - Functional capabilities

Effectiveness of Prototypes

Type	Advantages	Disadvantages
Low-fidelity prototype	◆ Lower development cost ◆ Evaluate multiple design concepts ◆ Useful communication device ◆ Address screen layout issues ◆ Useful for identifying market requirements ◆ Proof-of-concept	◆ Limited error checking ◆ Poor detailed specifications for coding ◆ Facilitator driven ◆ Limited utility after requirements established ◆ Navigational and flow limitations
High-fidelity prototype	◆ Complete functionality ◆ Fully interactive ◆ User driven ◆ Clearly defined navigational scheme ◆ Use for exploration and test ◆ Look and feel of final product ◆ Serves as living specification marketing and sales tool	◆ More expensive to develop ◆ Time consuming to create ◆ Inefficient for proof of concept designs ◆ Not effective for requirements

Paper Prototyping

Example

Prototyping

- Process for demonstrating the feasibility of an approach
  - Based on a hypothesis
    - Validates
    - Invalidates
- Levels of fidelity
  - Low
  - Medium
  - High

Early Paper Prototype – Sample

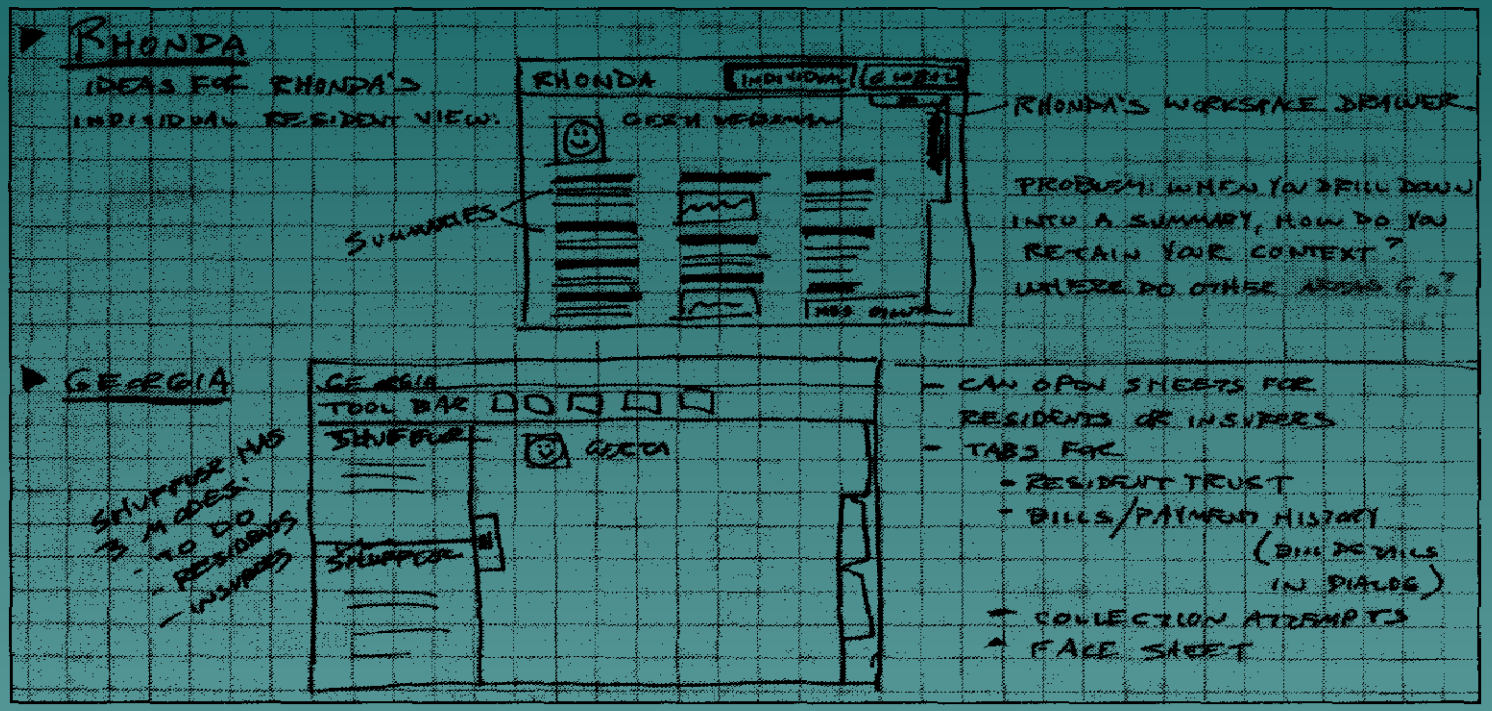


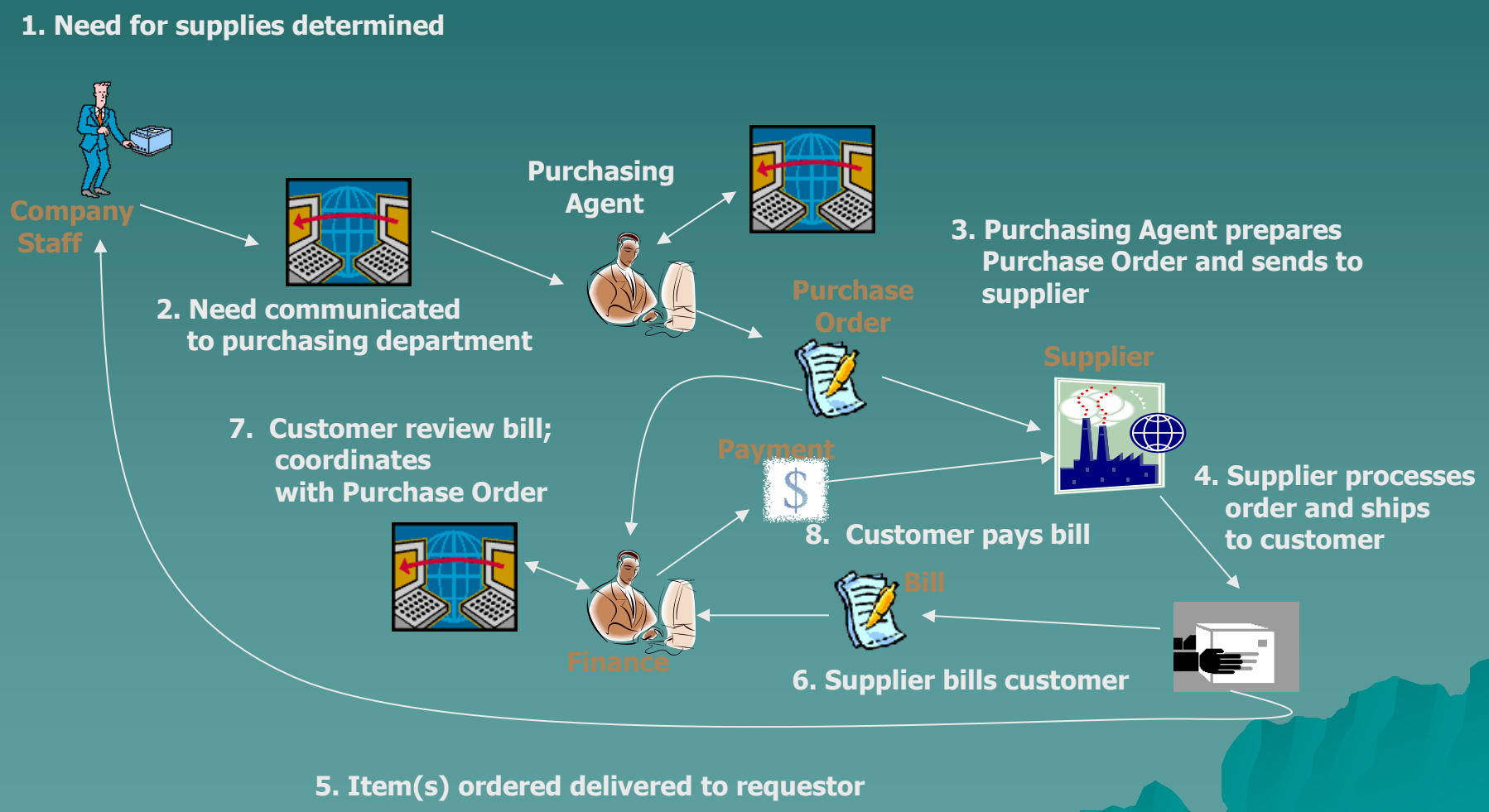
Figure 6-1: Example of an early framework sketch. Framework sketches should be simple, starting with rectangles, names, and simple descriptions of relationships between functional areas. Details can be visually hinted at to give an idea of contents, but don't fall into the trap of designing detail at this stage.

Source: Cooper & Reimann, *About Face 2.0: The Essentials of Interaction Design*, page 86

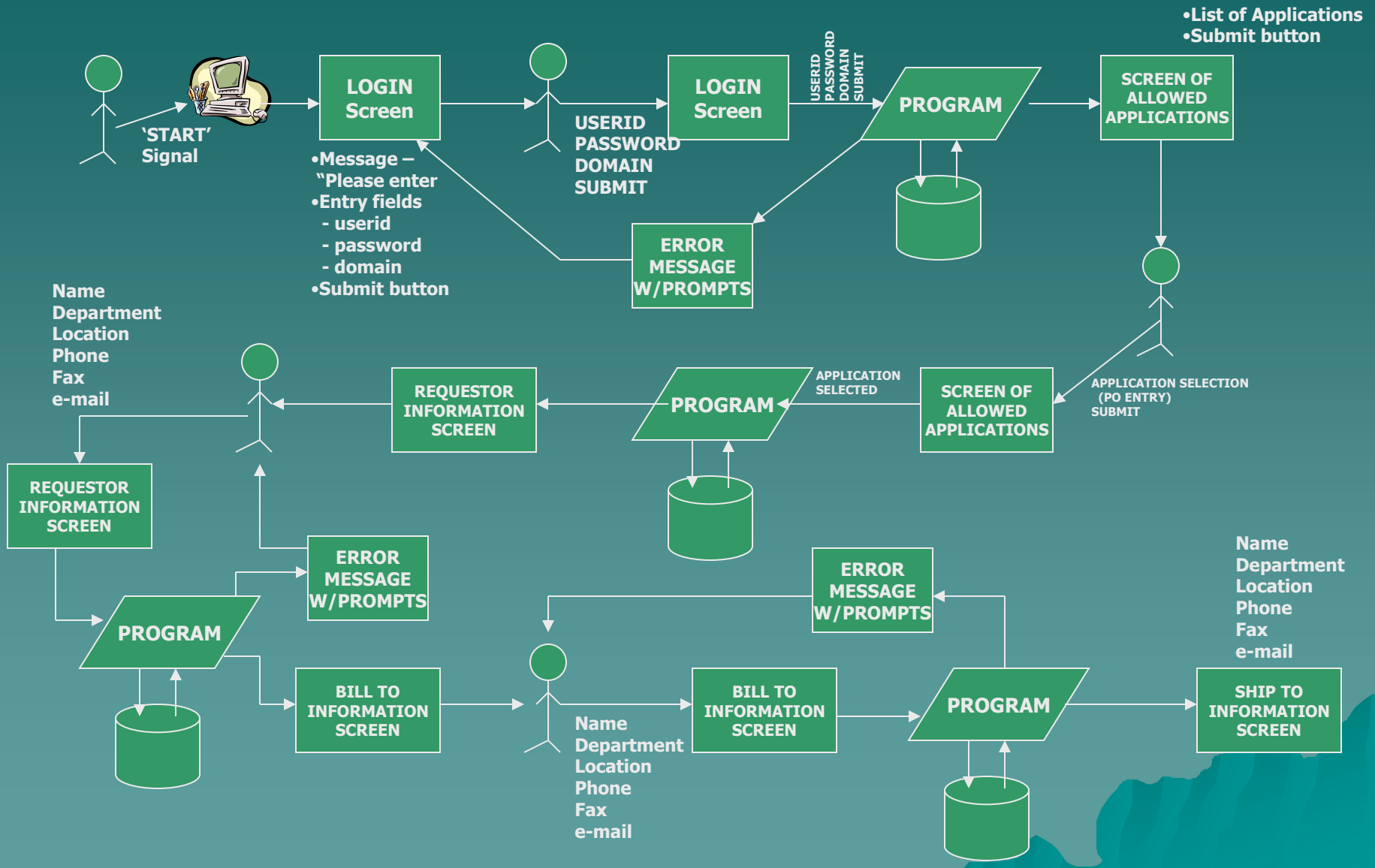
Developing a Paper Prototype

- Paper prototype represents the first stage of detailed interaction design
  - Follows
    - Concept of operation diagram(s)
    - Conversation diagrams
  - Documents *what* the computer will present to the user
- Address the Purchase Order Scenario
  - Creating a new purchase order
  - Mythical company

Concept of Operations – Purchase Order Process



Sample Conversation Diagram



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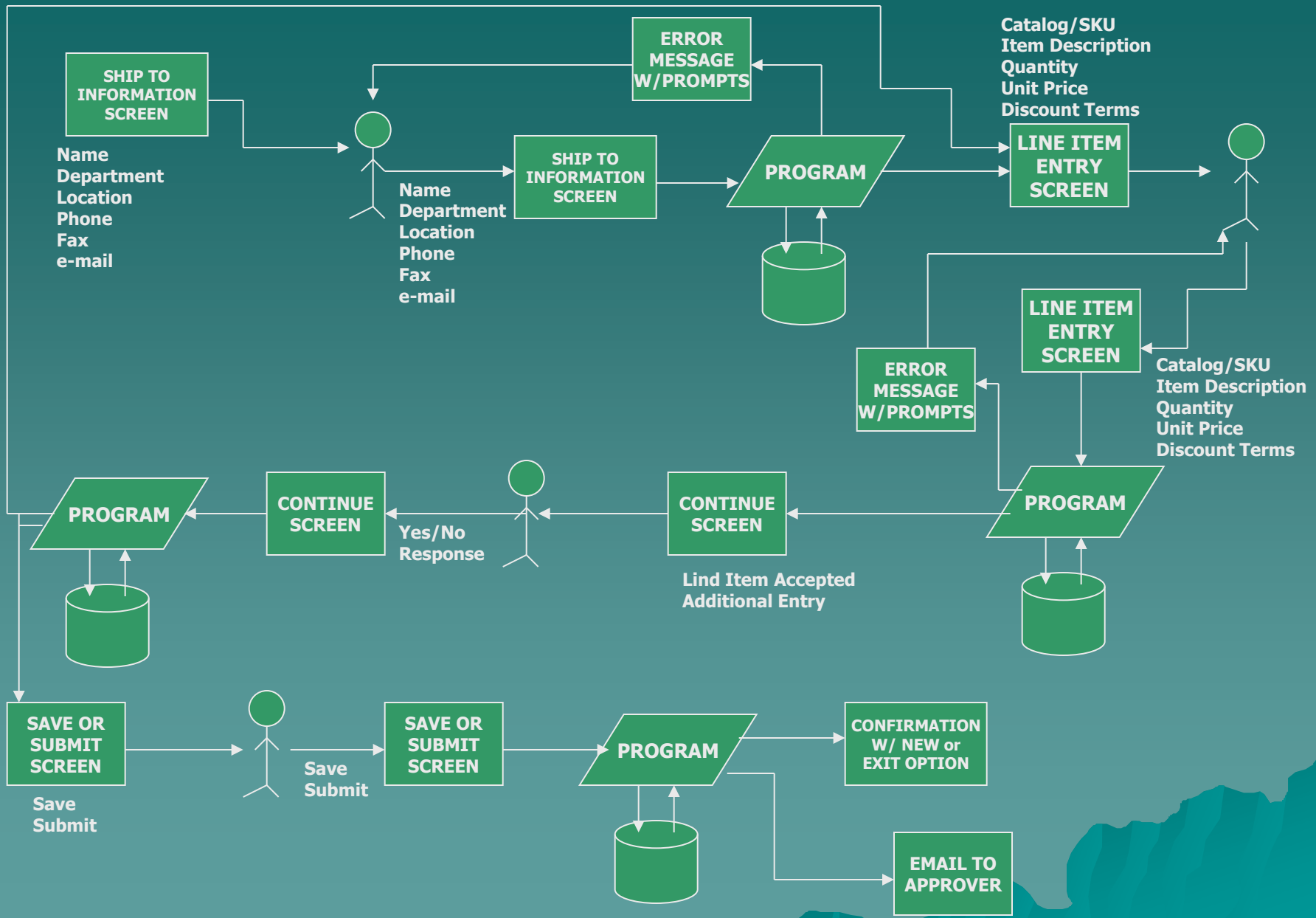

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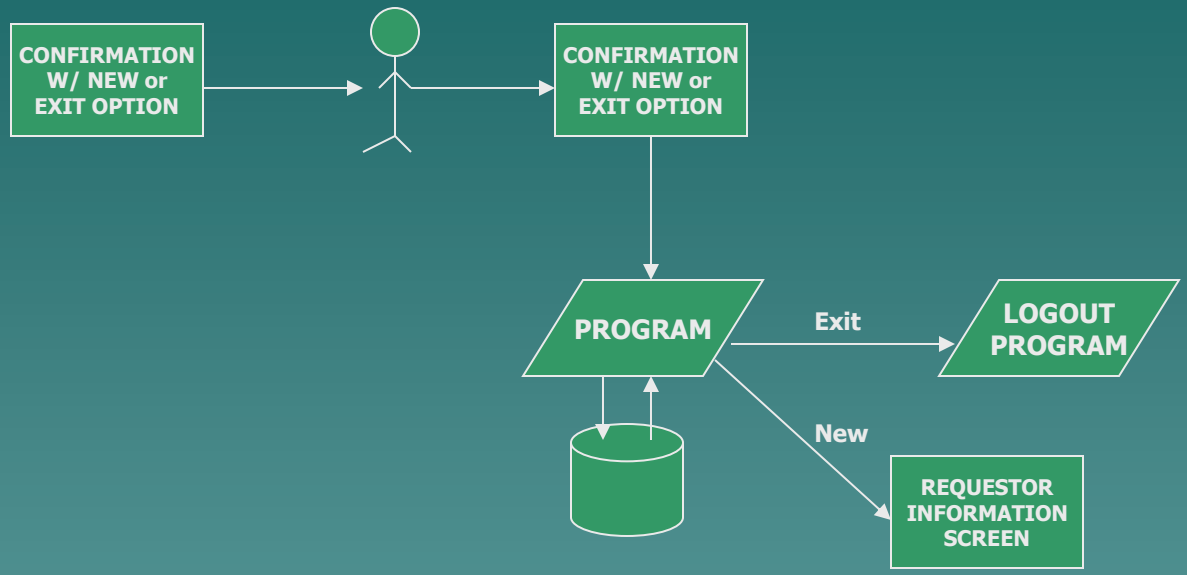


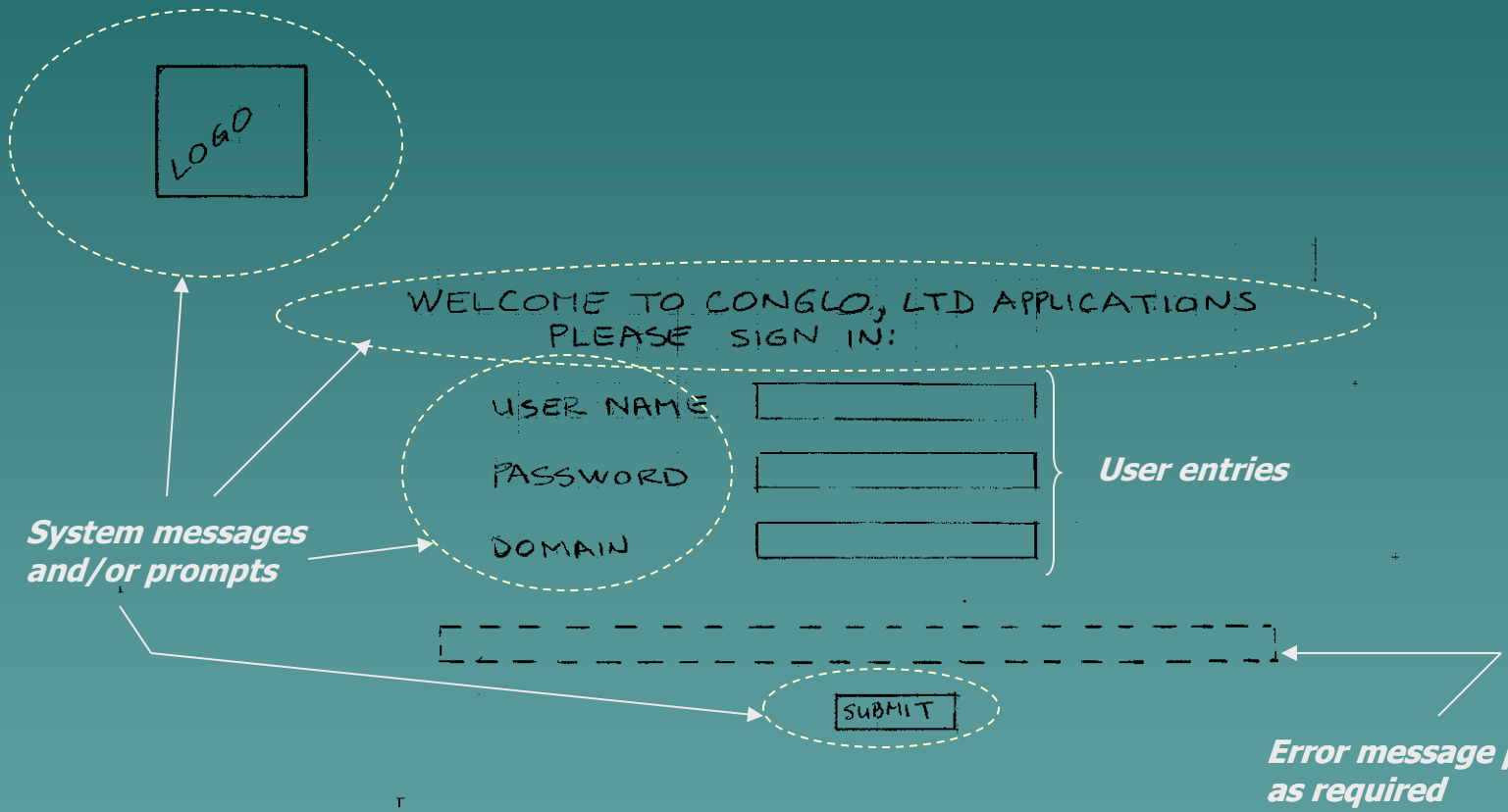
Conversation Components

- Login
- Application Selection
- Purchase Order
  - Requestor information
  - “Bill to” information
  - “Ship to” information
  - Line item information
  - Approval information
- Information messages
- Computer components

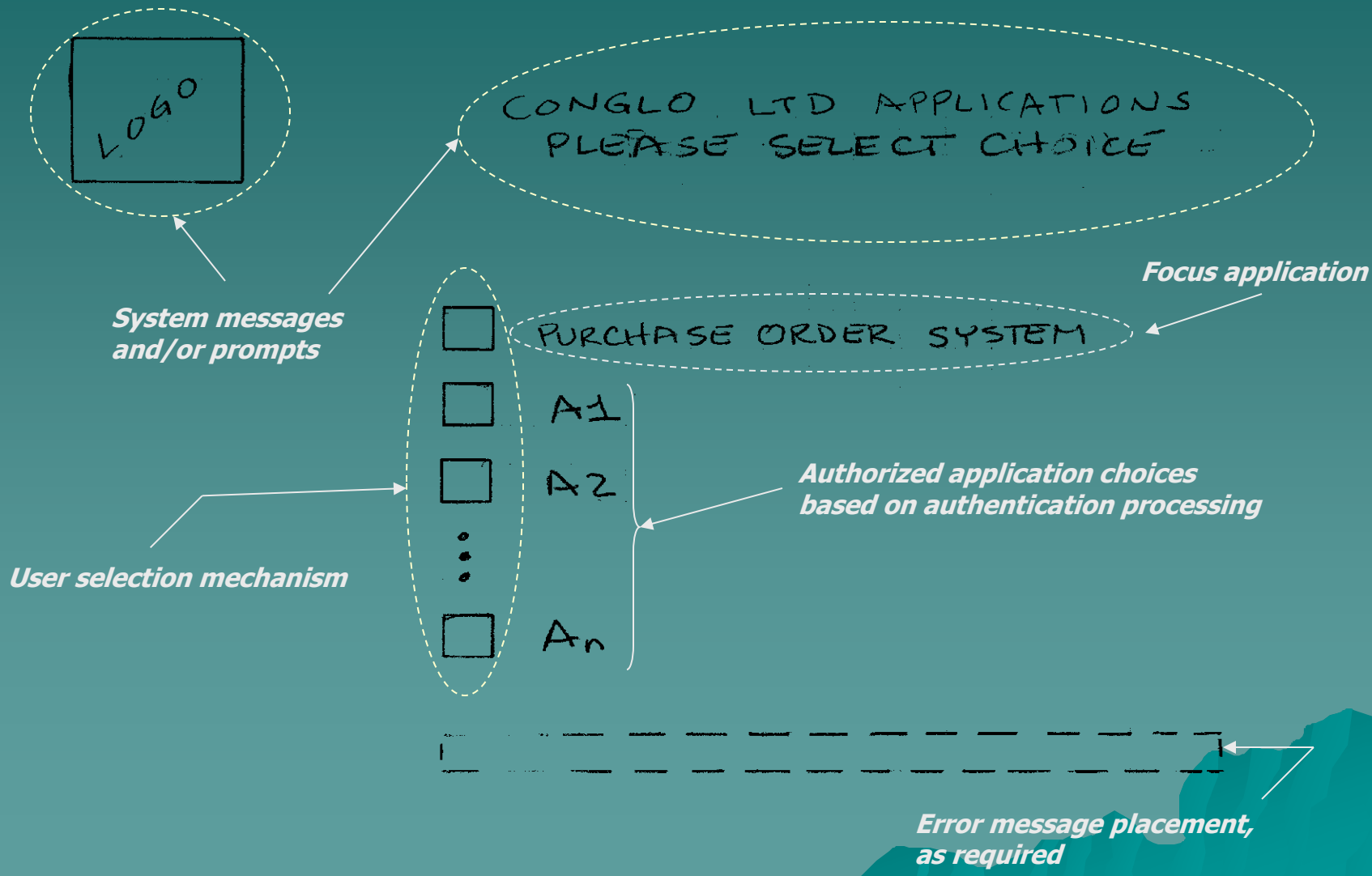
Developing the Prototype

- Identify the screens
  - Understand the scenario
  - Use the conversation components
  - Integrate with conversation diagram
- List screen components
  - Outputs to user
  - Inputs from user
- Recommended tools
  - #2 pencils
  - Quadrille tablet
  - Eraser

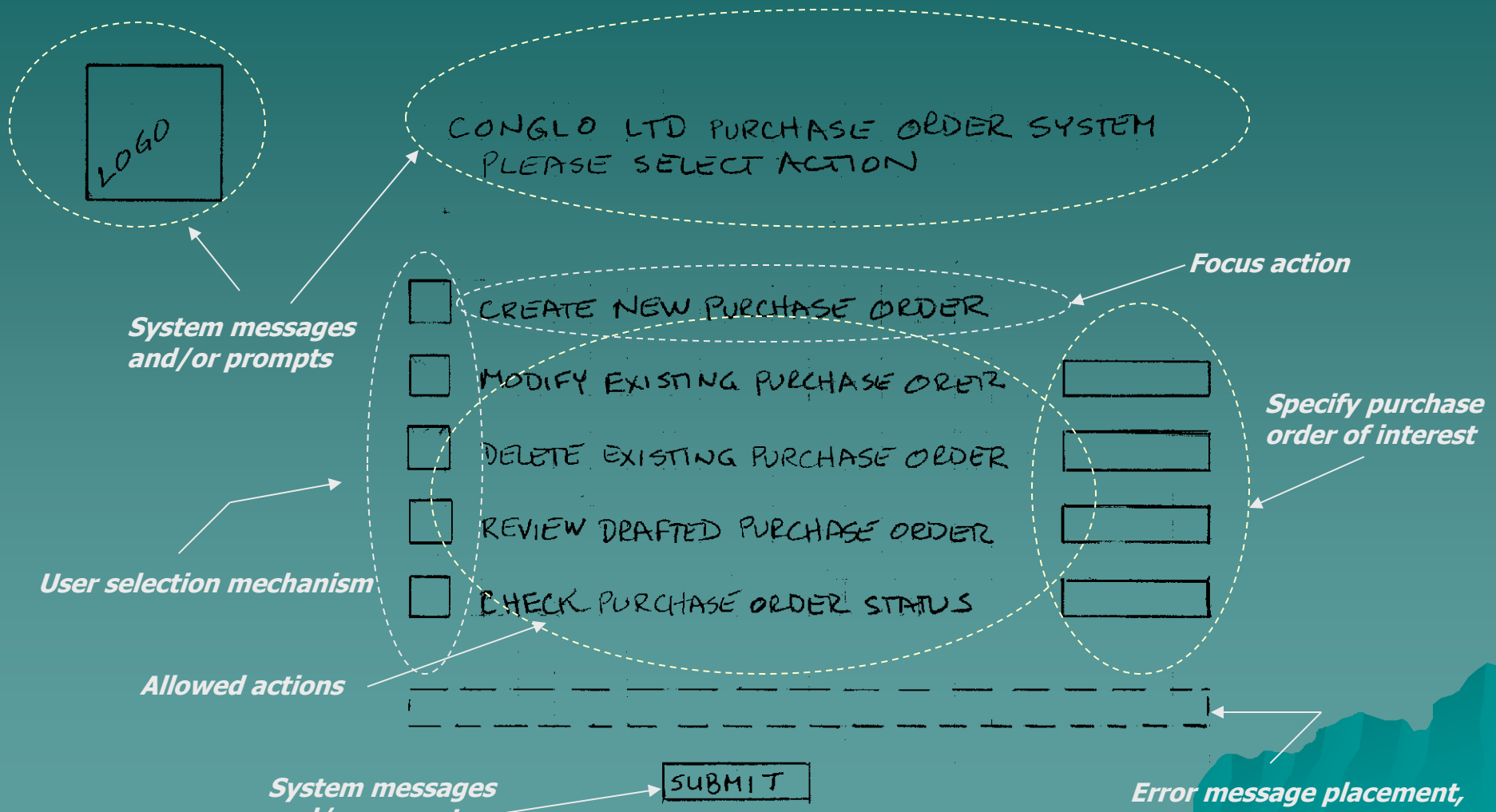
Login Screen



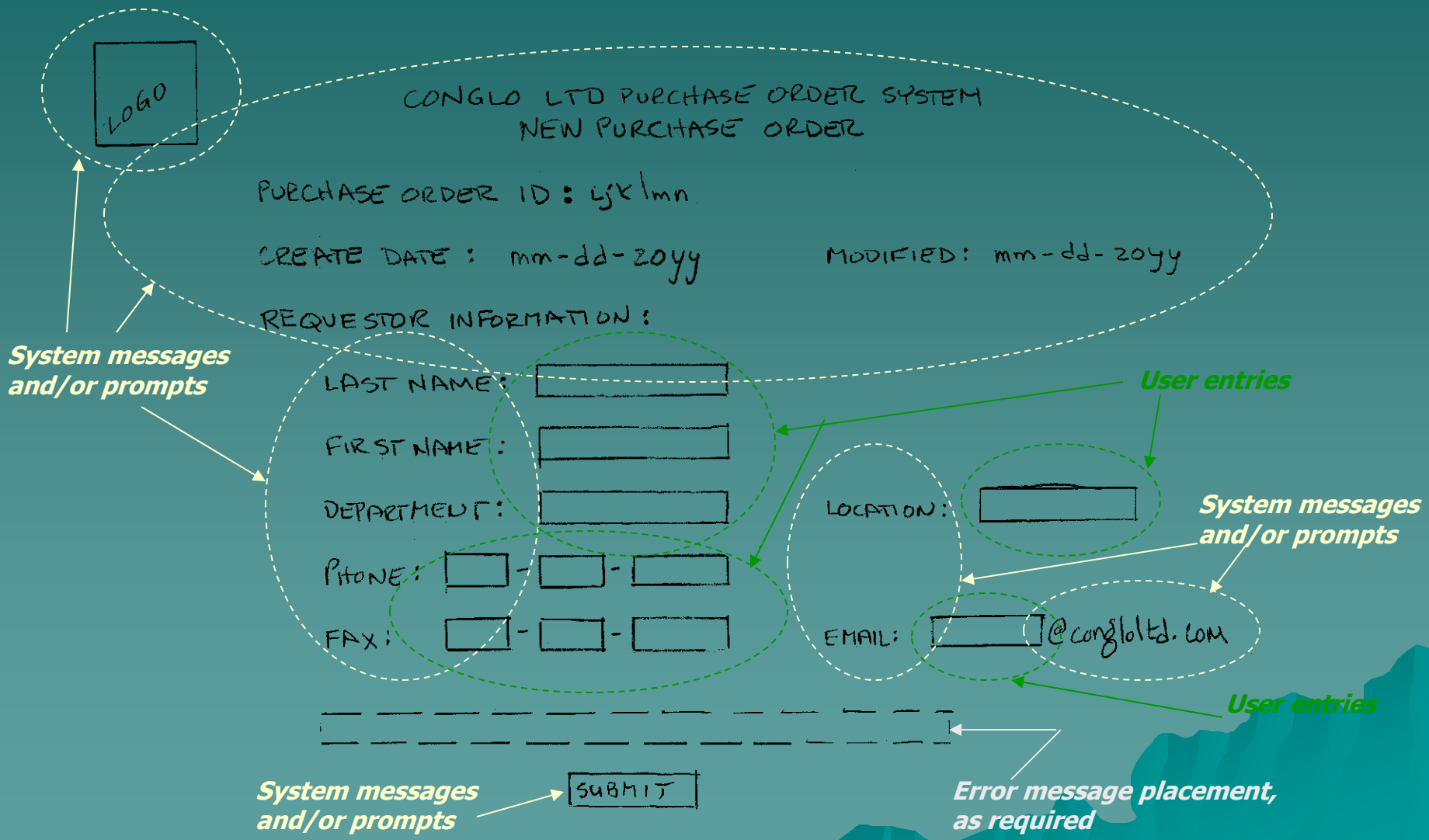
Application Selection



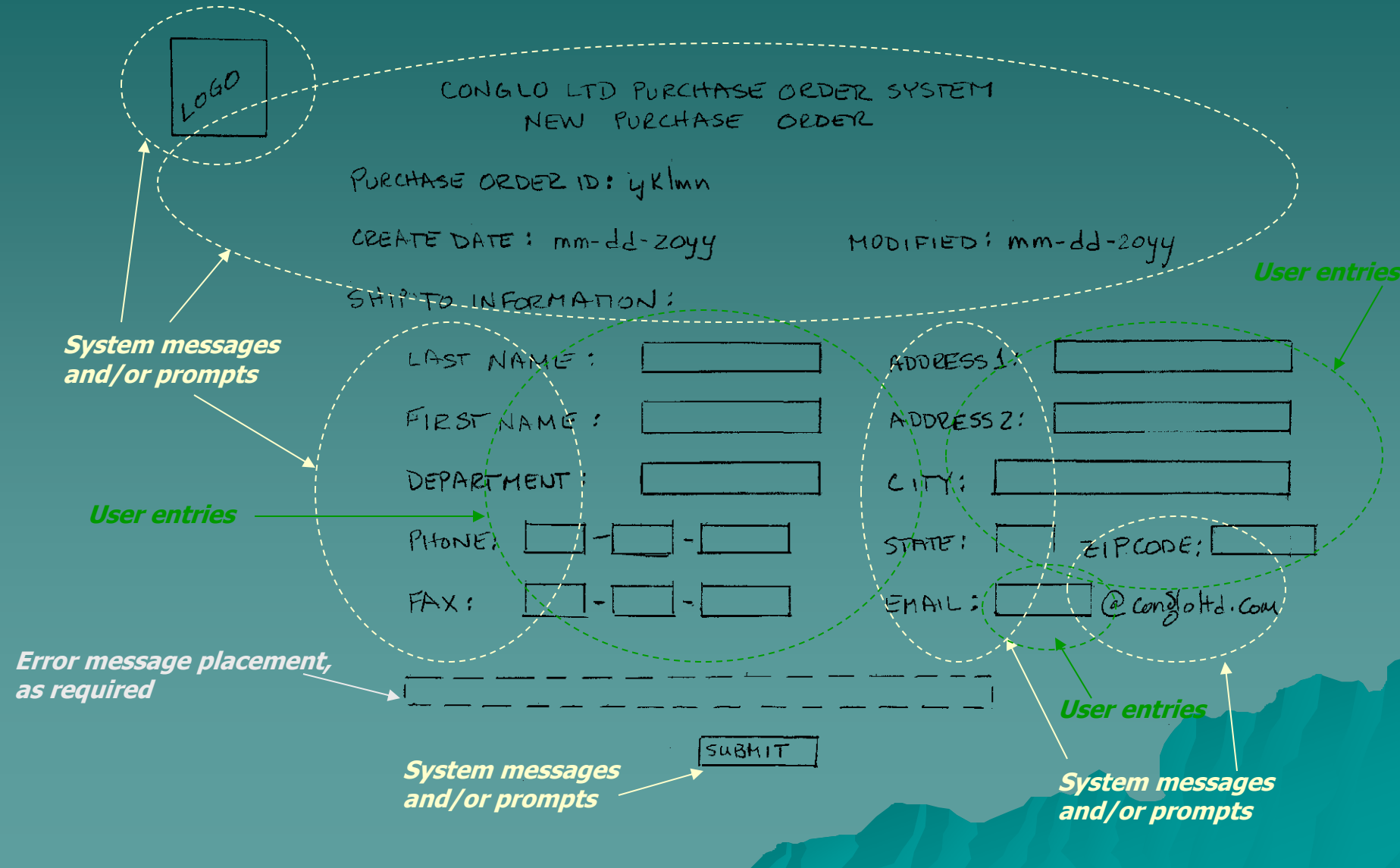
Action Selection



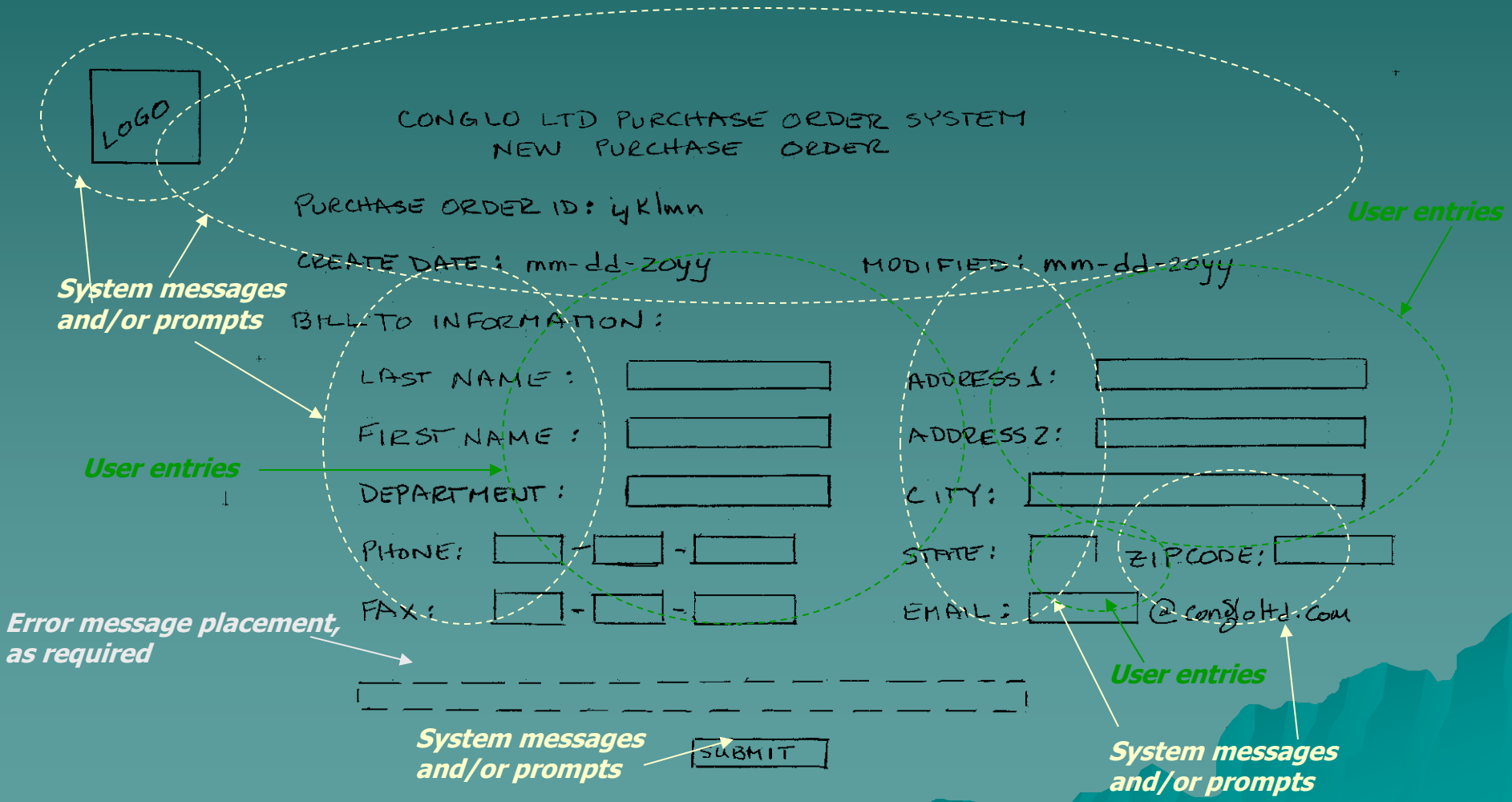
Purchase Order Creation (1) – Identifying the Requestor



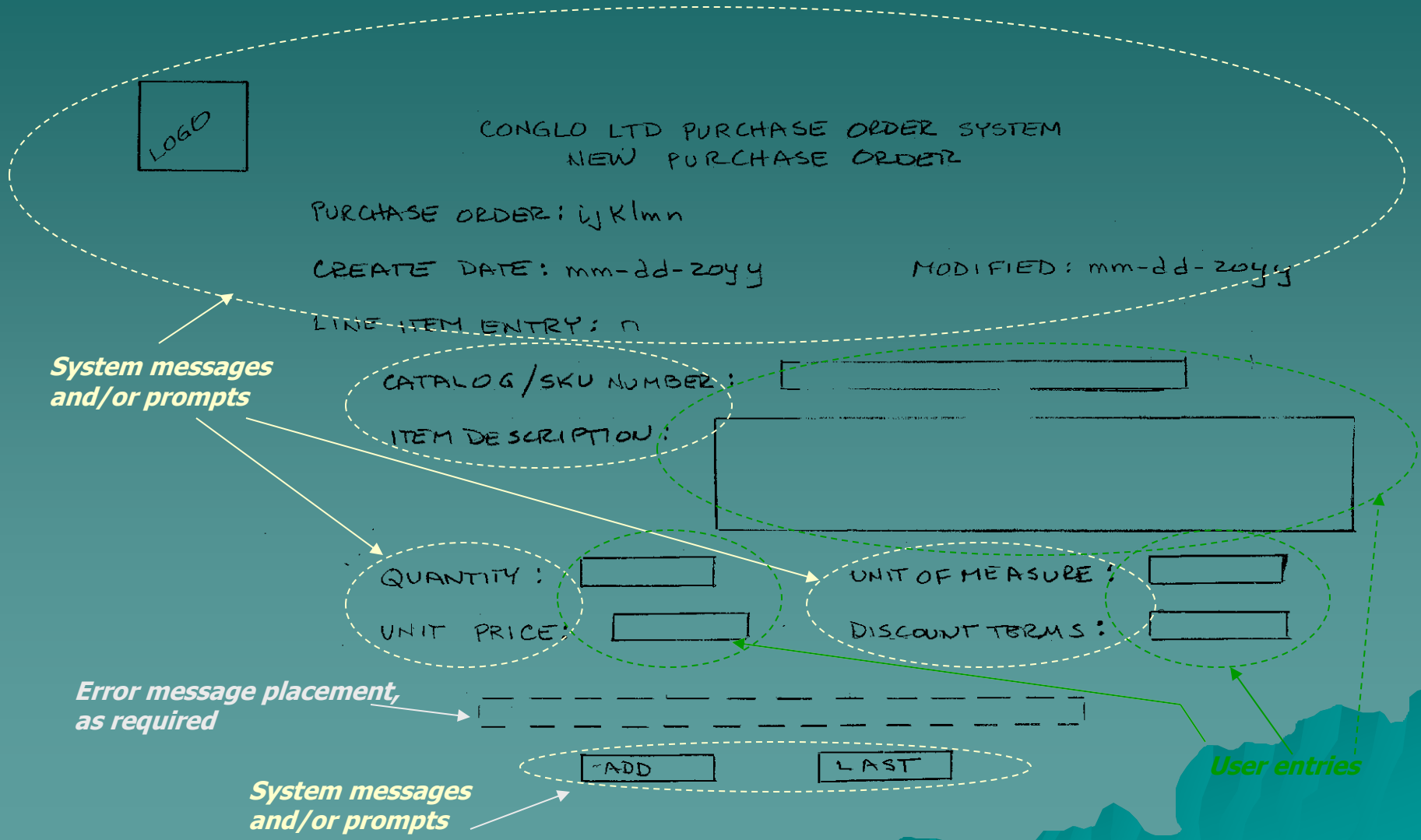
Purchase Order Creation (2) – Identifying the Ship To



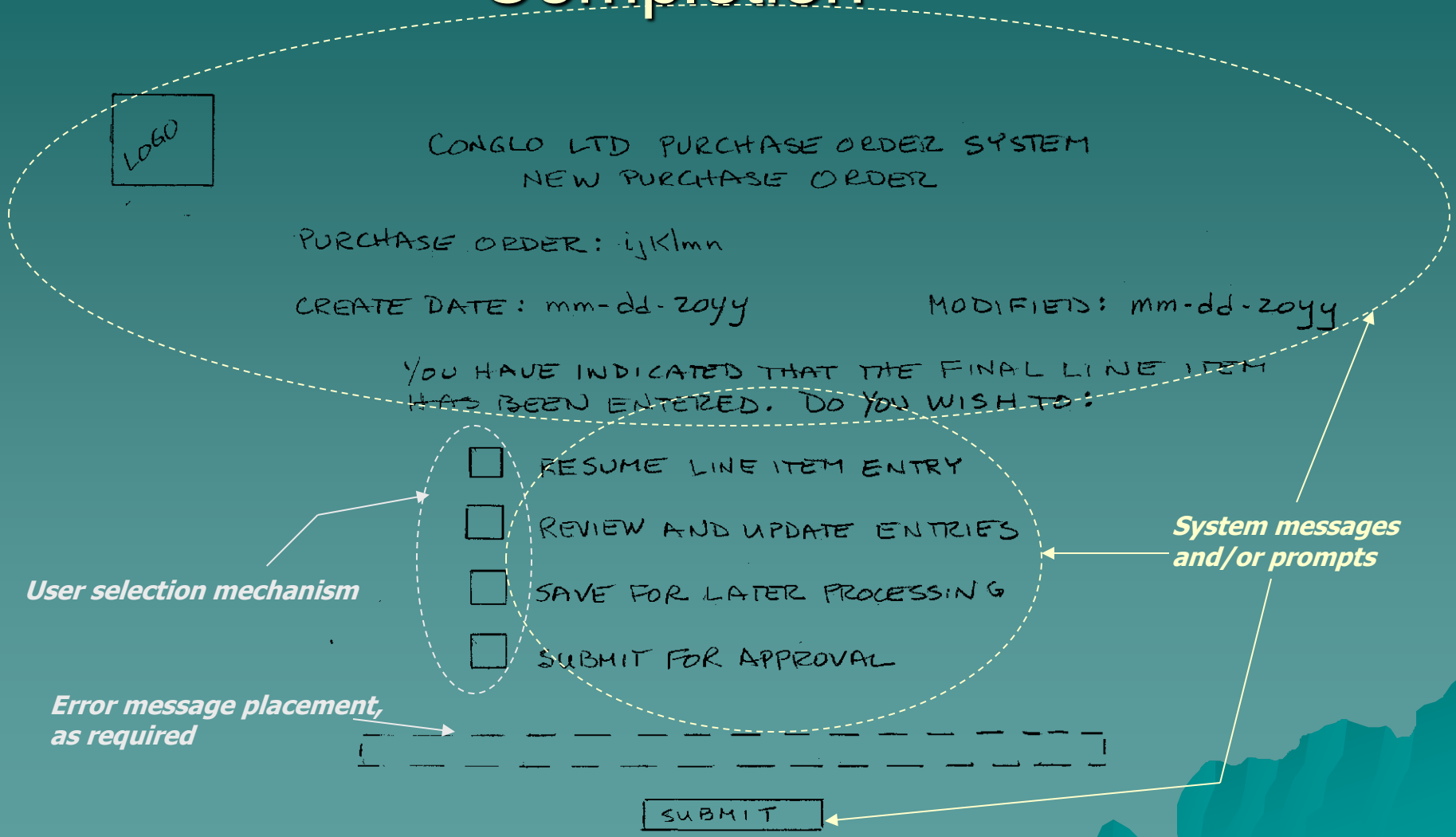
Purchase Order Creation (3) – Identifying the Bill To



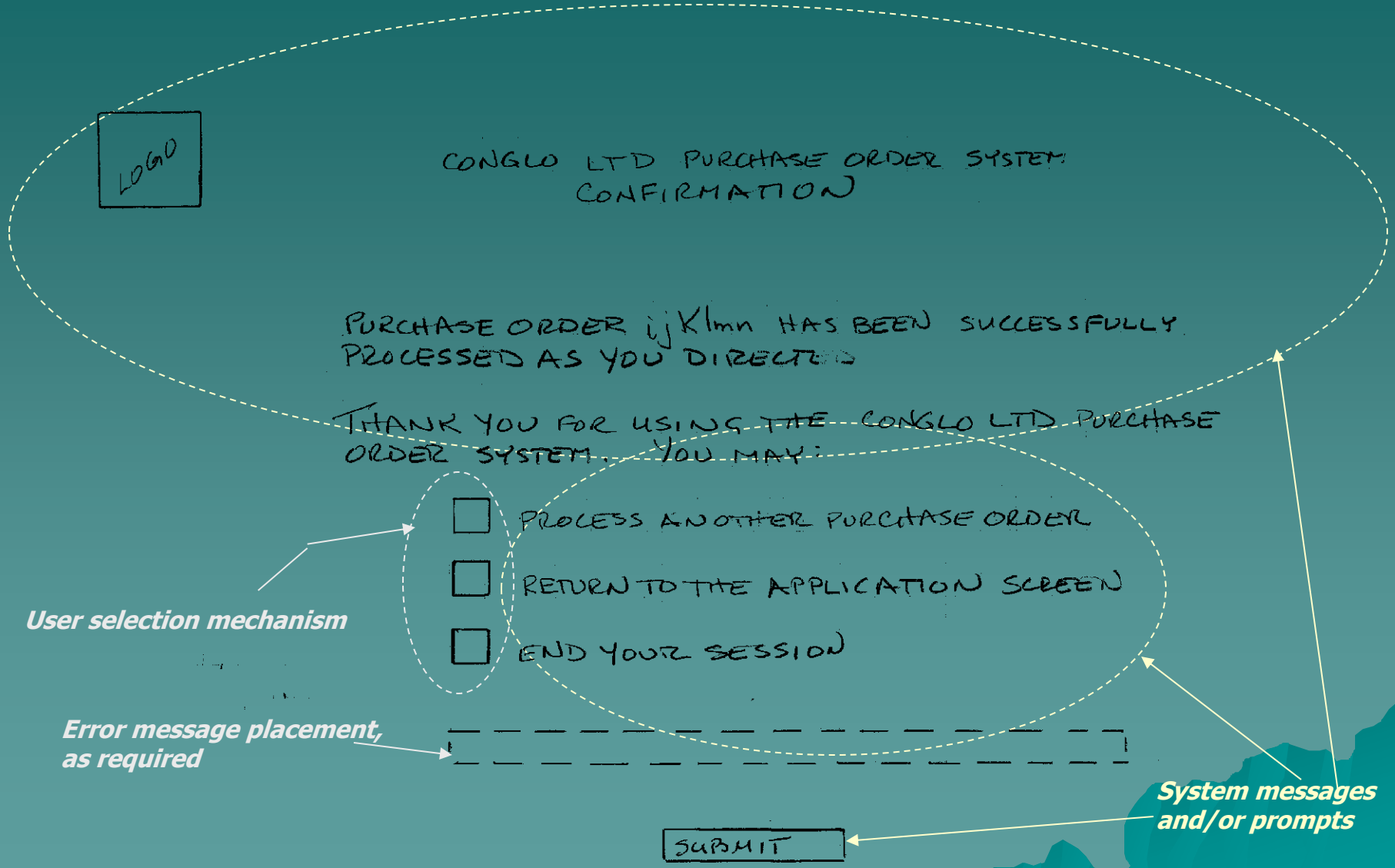
Purchase Order Creation (4) – Line Item Entry

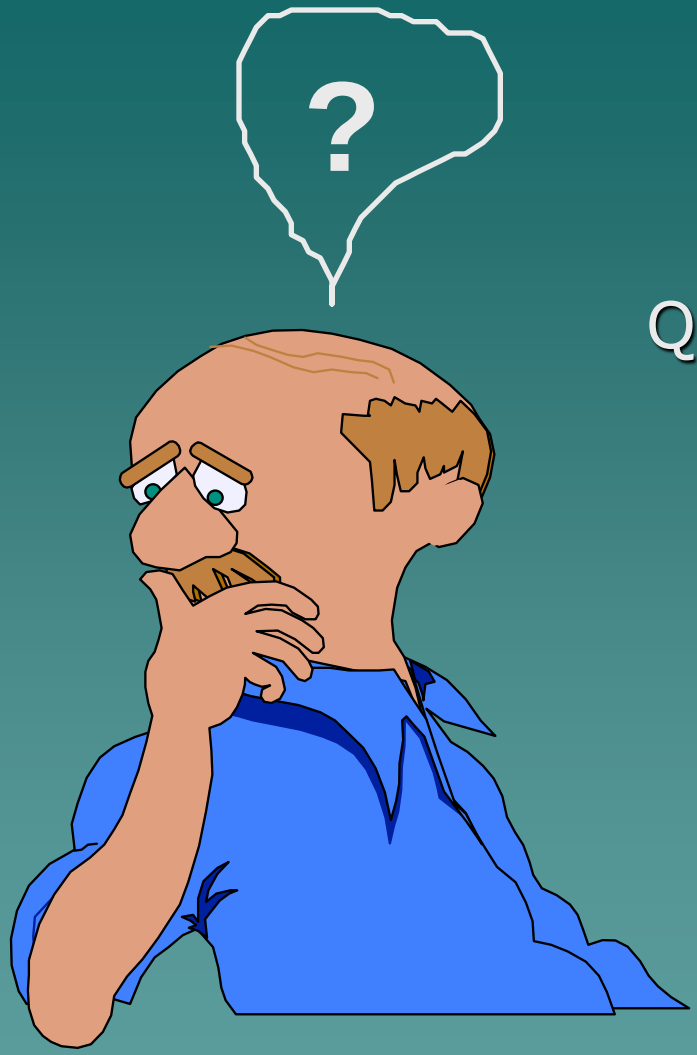


Purchase Order Creation (5) – Completion



Final Confirmation





Question ?