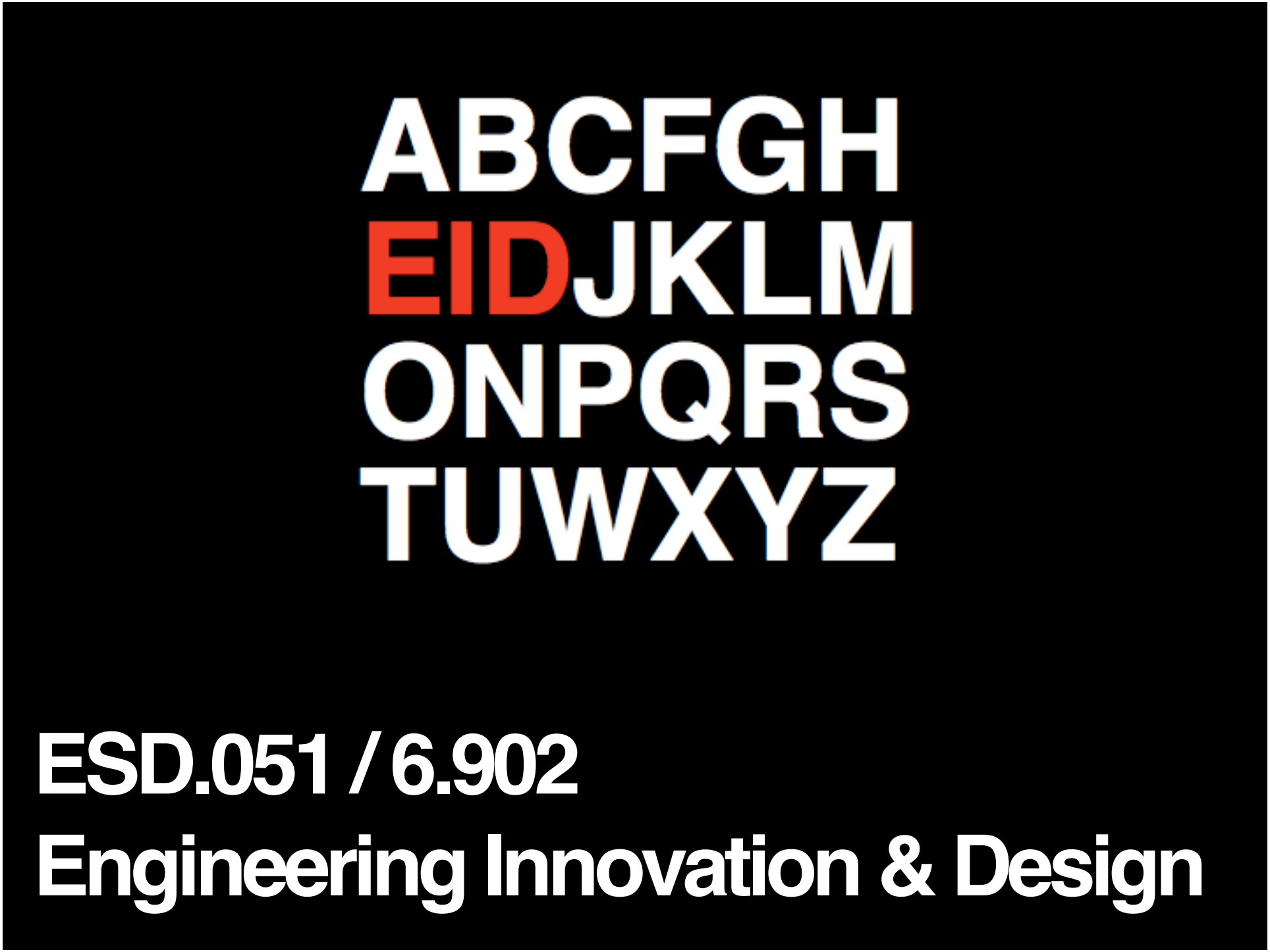

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Engineering Innovation & Design

(From Last Class) K-Script Writing

- Write out a K-Script showing the interaction between you and Amtrak to book a ticket

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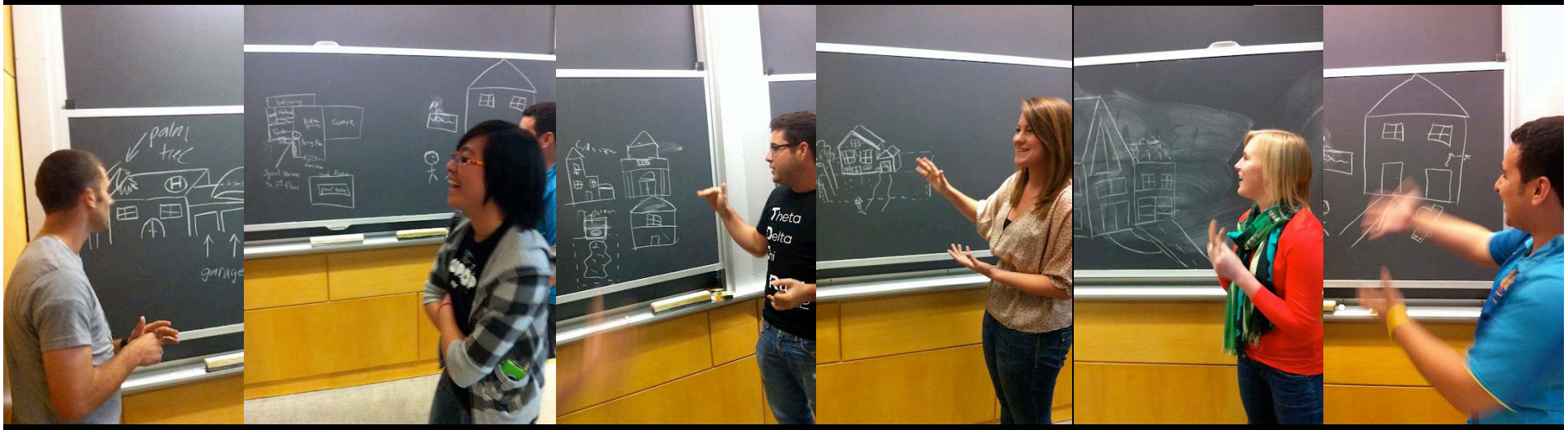
Review of Sketching

- Why do we sketch / make K-Scripts?
  - K-Scripts are scripts that show user interactions
  - K-Scripts are easy to edit
  - Quick to generate
  - Allow a group to work collaboratively



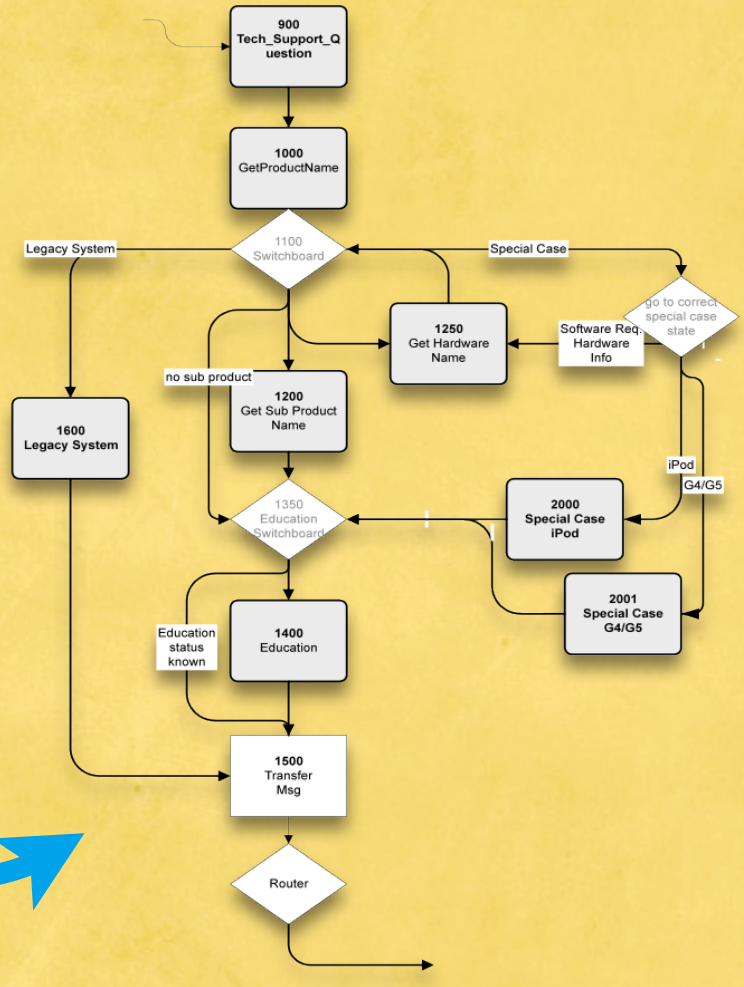
Scripts / State Diagrams

- Sketch it out **(K-Script)**
  - Refine ideas
  - Refine expression of the ideas
- Draw out the connections **(State Diagrams)**
  - Refine the logic
  - Refine the sketch
- Articulate the details
  - DEfine the specifics
  - Refine the connections
  - Refine the sketch

K-Script

Who s talking	What they re saying
System	Welcome to Blue Cross of California, providing service to the Rita Trust. So I can know who you are, say either “Member” “Provider” or say “I’m none of those.”
Caller	Member
System	Alright – how can I help you? You can say, “Claims”, “Benefits” or “Eligibility”. You can also say “More options” Go ahead:
Caller	Eligibility
System	Eligibility. Got it. Say the member ID. (…you can find it on your Blue Cross ID card.) <PAUSE> It’s mostly numbers, but might contain letters also.
Caller	118A50675
System	…and for security, what’s the member’s birth date. For example, you could say March 2nd nineteen-sixty-three.
Caller	June 1st 1975

State Diagram

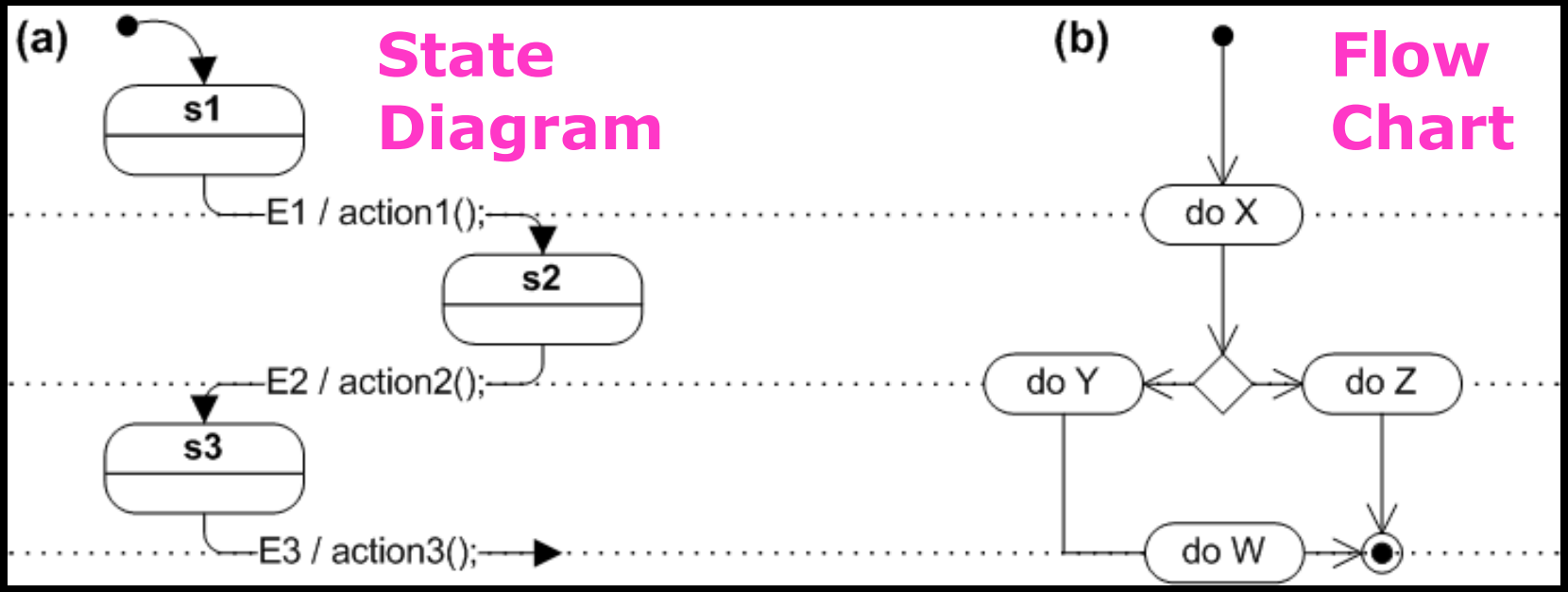


Ways to Visually Model Interactions

- Unified Modeling Language (UML)
- System Context Diagram (SCD)
- Data Flow Diagram (DFD)
- **State Diagram** (which we'll use in class)
- Flowchart - "a type of diagram that represents an algorithm or process" *Wikipedia 9/19/2012

State diagram vs. Flow Chart

(http://en.wikipedia.org/wiki/State_diagram) 9/19/2012



"Newcomers to the state machine formalism often confuse state diagrams with flowcharts. The figure below shows a comparison of a state diagram with a flowchart. A state machine (panel (a)) performs actions in response to explicit events. In contrast, the flowchart (panel (b)) does not need explicit events but rather transitions from node to node in its graph automatically upon completion of activities.[10]"

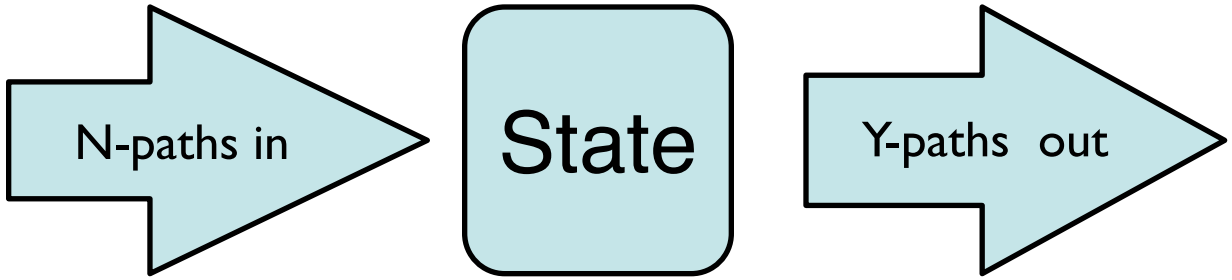
About State Transitions

- **Example**: being a freshman at college
  - What conditions need to be satisfied to enter that state?
  - What conditions need to be satisfied to exit that state?
- **Example**: “Save as...” dialog on Microsoft Word
  - What conditions need to be satisfied to enter that state?
  - What conditions need to be satisfied to exit that state?
- **Question**: Does the state (at this level) talk about what happens while the *system* is in the state of being a Freshman or “Save as...” ?
  - (no)
- **Question:** What occurs during the state of “being a freshman”?
- **Question:** What occurs during the state of “Save as...”?’
- **Question**: What does the state help us think about?

State Machines

A *state* describes a behavioral node of the system in which it is waiting for a trigger to execute a transition.

(Wikipedia, Sept 19th 2011)



Levels of Abstraction

- States can be high level, low level, or somewhere in between... you have to pick the level that makes sense for expressing the concept.
- This can be hard.
- (It's not unlike levels of abstraction for stakeholders)

Design Challenge!

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In Class Exercise

Draw the states involved in making an omelet... start at the beginning

Hint: An easy way to write out a state is to start with the a phrase that describes the objective of the state. Use: “Get...” (as in “Get passing grades” or “Get negotiated price”)

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Visitors from Adobe

- Anthony
- Matt
- Vicky

Psychology

Interaction: The psychology

- People treat computers like real people
  - How do we know?
    - Experiments; Cliff Nass, Byron Reeves
  - Example 1: Politeness

    "People are polite to computers: When they are asked to evaluate a computer's performance, they tend to assess the one they are using more positively than others -- just as people tend to praise other people more to their faces than behind their backs."

    -Nass+Reeves

Social Psychology: The Advantage

- Establish Close Relationships
  - Between the caller and the application
    - Establish close relationships: Team Work
    - Convince users to try harder: Reciprocity
    - Create "believability": Expert Opinion
  - Companies with their callers
    - Identity - differentiation between similar products
    - Reduction in churn

Psychology

- *What does it affect?*
  - Ability to understand the system
  - Ability to learn the system
  - Capacity to enjoy the system
- *How expressed?*
  - The form of the system
  - The functionality of the system
  - How the system perform the functionality
  - The system in context of the environment
  - The context of people using the system\

United Airlines

- Social interface aids comprehension:

I found a few flights which just about match your itinerary... (three, to be exact.)
Help me find the right flight. Here's the first one on my list:

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