<table>
<thead>
<tr>
<th>Class</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assigned</td>
<td>Good and Bad Design</td>
<td>Design a Game</td>
<td>Stakeholder analysis for games</td>
<td>Articulating Design HW</td>
<td>2 Subject Usability Test</td>
<td>Transcription &amp; State Diagram</td>
<td>K-Scripts</td>
<td>K-Scripts 2</td>
<td>Make a Commercial</td>
<td></td>
</tr>
<tr>
<td>Due</td>
<td>Good and Bad Design Movie</td>
<td>Game + SHA</td>
<td></td>
<td>Articulating Design HW (NOT ASSIGNED)</td>
<td>Usability Test, Transcription &amp; Diagram</td>
<td>K-Scripts</td>
<td>K-Scripts</td>
<td>K-Scripts 2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Innovation
Example
Usability:

What did you experience in your tests?
Usability:

Mental Model Mismatch
State Tables: The detailed design
### Script

<table>
<thead>
<tr>
<th>Who's talking</th>
<th>What they're saying</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System</strong></td>
<td>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.”</td>
</tr>
<tr>
<td><strong>Caller</strong></td>
<td>Member</td>
</tr>
<tr>
<td><strong>System</strong></td>
<td>Alright – how can I help you? You can say, “Claims”, “Benefits” or “Eligibility”. You can also say “More options” Go ahead:</td>
</tr>
<tr>
<td><strong>Caller</strong></td>
<td>Eligibility</td>
</tr>
<tr>
<td><strong>System</strong></td>
<td>Eligibility. Got it. Say the member ID. (…you can find it on your Blue Cross ID card.) &lt;PAUSE&gt; It’s mostly numbers, but might contain letters also.</td>
</tr>
<tr>
<td><strong>Caller</strong></td>
<td>118A50675</td>
</tr>
<tr>
<td><strong>System</strong></td>
<td>…and for security, what’s the member’s birth date. For example, you could say March 2nd nineteen-sixty-three.</td>
</tr>
<tr>
<td><strong>Caller</strong></td>
<td>June 1st 1975</td>
</tr>
</tbody>
</table>

### Call Flow Diagram

![Call Flow Diagram](image-url)
For Dialog Systems: Brand New Question? Go to a New State, (generally…)

ENTRANCE
- User enters the new state and (generally) the system asks a question and listens for an answer

EXIT
- IF the system hears something that sounds like a good answer, the system exits that state - performing an action
- IF the system hears something that may not sound like a good answer, the system asks the user for clarification, but DOES NOT EXIT the state, usually.
- IF the system hears nothing, the system asks the user for clarification, but DOES NOT EXIT the state, usually.
- IF there are too many failures, the state fails and exits on failure
Detailed Articulation of the Design:

What’s happening in each state of the dialogue system?
3. The Interaction State Table (chapter 5 of book)

<table>
<thead>
<tr>
<th>Prompts Type</th>
<th>Name</th>
<th>Wording</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial</td>
<td></td>
<td>Text for the initial prompt</td>
</tr>
<tr>
<td>Timeout 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Timeout 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retry 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retry 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Help</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Option</th>
<th>Vocabulary</th>
<th>DTMF</th>
<th>Action</th>
<th>Confirm.</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Option description</td>
<td>What the system is listening for</td>
<td>If there can be a touch-tone equivalent, enter the number here</td>
<td>Go to: fill in the name of the state that the system goes to next</td>
<td>(If necessary /always)</td>
</tr>
</tbody>
</table>

Other Module Settings / Notes
### The Play-Prompt State Table

#### Number and Name of Play Prompt State

<table>
<thead>
<tr>
<th>Play Prompt</th>
<th>Entering from</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prompts</td>
<td>Condition</td>
</tr>
<tr>
<td>Name</td>
<td>always</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Module Settings</th>
</tr>
</thead>
</table>
3. The Branch-On-Condition State Table

Number and name of branch on condition state

<table>
<thead>
<tr>
<th>Branch on Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Entering from</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Condition</strong></td>
<td><strong>Action</strong></td>
</tr>
<tr>
<td>IF</td>
<td>Go to:</td>
</tr>
<tr>
<td>Else IF</td>
<td>Go to:</td>
</tr>
<tr>
<td>Else IF</td>
<td>Go to:</td>
</tr>
</tbody>
</table>
The 6 Principal Prompts

- **Initial prompt**
  - Asks the user to provide some information

- **Timeout prompt (no input prompt)**
  - Asks the user to provide information, but also provides additional information to users when the system didn’t hear audio for (approx.) 5 seconds

- **Timeout 2 prompt**
  - Asks the user to provide information, but may also inform users to use touch-tone equivalents or to ask for help

- **Retry prompt (no match prompt)**
  - Asks the user to provide information, but also provides additional information to users when the system didn’t understand what the user said

- **Retry 2 prompt**
  - Asks the user to provide information, but may also inform users to use touch-tone equivalents or to ask for help

- **Help prompt**
  - Orient the user, clarifies the question / reasoning behind asking the question allows user to answer the question again, or may re-enter the initial prompt
Challenge!
In class exercise:

Write out the prompts for the pickup/delivery state of a Pizza Ordering line
The 6 Principal Prompts

- **Initial prompt**
  - “Would you like that order for pickup or delivery?”
- **Timeout prompt (no input prompt)**
  - Asks the user to provide information, but also provides additional information to users when the system didn’t hear audio for (approx.) 5 seconds
- **Timeout 2 prompt**
  - Asks the user to provide information, but may also inform users to use touch-tone equivalents or to ask for help
- **Retry prompt (no match prompt)**
  - Asks the user to provide information, but also provides additional information to users when the system didn’t understand what the user said
- **Retry 2 prompt**
  - Asks the user to provide information, but may also inform users to use touch-tone equivalents or to ask for help
- **Help prompt**
  - Orient the user, clarifies the question / reasoning behind asking the question allows user to answer the question again, or may re-enter the initial prompt
Challenge!
In class exercise:
Transfer Funds
Design Exercise – Banking: The Problem

- Design the part of the banking system for **account-transfer** & must confirm that the transfer is correct
  - System must collect transfer information (minimally, From, To, and Amount)
Design Exercise – Banking: The Requirements

- Background information
  - Accounts have numerical identifiers (9 digits)
  - Your design starts AFTER the user has
    - called the bank
    - logged in (the system knows all the user’s account information)
    - from the main menu says “transfer funds”
  - Your design is complete when the user is finished and sent back to the main menu
Image of the book cover of "The Art and Business of Speech Recognition -- Creating the Noble Voice" removed due to copyright restrictions.
Coding?
Today:

We will go over the 3 simple features.

In class exercise.

You will implement a basic Pizza System
Types Of Pages

Message Page
Question Page
Data Page
Voicemail Page
Logic Page
Transaction Page
Types Of Pages

- Message Page
- Question Page
- Data Page
- Voicemail Page
- Logic Page
- Transaction Page
Login Problems? See TA’s after class
Coke Challenge!

Users call in

Choose “Pepsi” or “Coke”

Coke voters get an option of a prize:

*iPad, MacBook Air, iPhone 5, or a Dell...lol*

Save votes in Data File
Welcome

Get “Pepsi” or

Negative Pepsi Comment

Coke Voters choose prize

Confirm Prize

Address for

Message

Question

Voicemail

Data

Saves Data

Goodbye

Bernard M. Gordon
MIT Engineering Leadership Program
Ready, Go!
Homework:

• Finish Pizza System at Home

Weather System:

• Provides weather information for your area.
• Develop K-Script
• Develop State Tables
• Call Flow Diagram