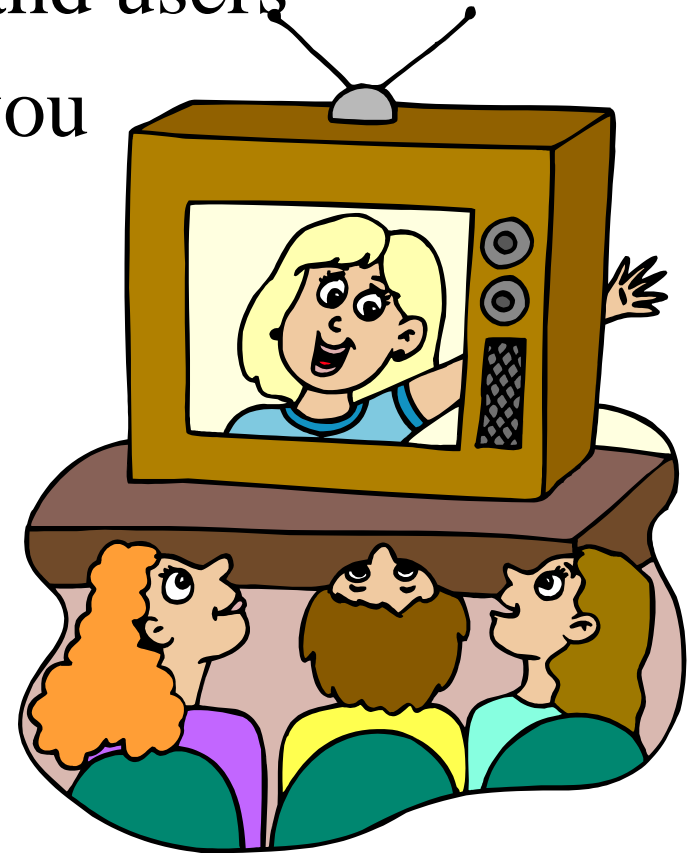


Conversational Interfaces

What?

- Dialogue between system and users
- Somebody is talking *with* you
- In a constraint domain...



Why?

- Natural, people are used to having conversations
- Easy to use for everybody
- Television relies heavily on words
- Television does not wait for you
- Noise attracts attention
- Fun! Entertainment is important

Examples

- These come from www.JellyVision.com
- Under Our work: ConnectEdu, Aetna
- (Some examples on slides come from their “You Know Jack” game)

So, how do you do it?

- “The Jack principles”, published on the web by JellyVision
- Following summarizes them
- I used many of same principles in my Artificial Teacher program in 1996

Maintain pacing

Paying attention to the timing of events

Maintain pacing (1)

Ask the user only one question at a time

- No web-like form filling!
- Allows for feedback between questions

Maintain pacing (2)

Limit the number of choices the user has at any one time

- Multiple choice with limited number of answers
- Freeform input, but for a very narrow question, like “what is your name?”

Maintain pacing (3)

Give the user only meaningful choices

- Skip questions if the system can make a good decision on the user's behalf
- Use history of interactions
- More user control is not always better!

Maintain pacing (4)

Make sure the user knows what to do at every moment

- Just-in-time instructions & reminders
 - “Gotta buzz-in first!”
 - “Hey, none of you used your screws!
 - Next round I want to see you guys ...”
- Put all choices on the screen

Maintain pacing (5)

Focus the user's attention on the task at hand

- Like television, only one event at a time
- Focus with visuals or audio
 - “O.K. now listen up!”

Maintain pacing (6)

Use the most efficient way of user input

Maintain pacing (7)

Make the user aware that the program is waiting

- Prod the user into action when they are not responding quickly enough
- Or, remind users that time is passing

“Hey, Player 2! Wake the hell up and give me your name!”

“Click ‘I’m done’ whenever you’re finished, O.K.?”

Maintain pacing (8)

Pause, quit or move on without the user's response if it doesn't come soon enough

- Make a choice on behalf of the user

“This isn't rocket science! How 'bout this one?” [Selects category]

- Stay in character when pausing or quitting

“Umm...last call here...anybody home?...All right, well, I guess we'll just pick up where we left off later...”

Creating the illusion of awareness

Creating the illusion that the characters are aware of the person sitting in front of the system, by showing intelligence and emotions.

Creating the illusion of awareness (1)

Respond with intelligence and emotion to the user's actions (and inactions)

- Custom responses rather than generic
“Michael Jordan? Playing for the Lakers? Maybe you're new to planet Earth”
- Have specific responses for predicted free-form answers

Creating the illusion of awareness (2)

Respond with intelligence and emotion to the user's past actions

“As you like science fiction movies, I would recommend watching Channel 4 tonight.”

Creating the illusion of awareness (3)

Respond with intelligence and emotion to a series of the user's actions

“Player 2 you were horrible until that last one!”

“What a total waste of time! You were completely mediocre!”

“All right, so you've got a pretty diverse set of interests...

... but you're seriously into the science stuff...

... and you're a sucker for a good love story...

... That's great. I've got a lot of ideas for books you might like.”

Creating the illusion of awareness (4)

Respond with intelligence and emotion to the time and space the user is in

“Hey there, Happy Eastern. ...”

“What kind of losers are up at this hour on Saturday night playing games?”

“Let’s find you a book, because with this lousy weather...”

“So, you don’t like football?” [time of Scotland match]

Creating the illusion of awareness (5)

Respond with intelligence and emotion to the comparison of different users' situations and actions

“You know what, Player 2, you're horrible at this game. But you had the good fortune of playing against Player 1 and Player 3 who, as impossible as it seems, are even worse.”

“Well, here's what one of our other viewers had to say about ..”

Maintain the illusion of awareness

Maintaining the illusion that
the characters are aware of
the person sitting in front of the system

Maintain the illusion of awareness (1)

Be personal

- Make people forget they are interacting with a system and not a person
- Use “you”
- Or even better names! (but difficult to do)

Maintain the illusion of awareness (2)

Keep talking

- Humans avoid silence
- In particular, when trying
 - to sell something
 - to get information from the other person

Maintain the illusion of awareness (3)

React to interruptions!

- When the system is talking and the user does something (like makes a selection) then the system should stop what it is saying and react to what the user is doing.

Maintain the illusion of awareness (4)

Avoid repetition

- Repetition is boring and unnatural
- Need many ways to say the same thing!

Maintain the illusion of awareness (5)

React to the number of users

- ‘You’ in English luckily covers both singular and plural
- Turn taking

“Hey you two, how you doing?”

“Playing all alone today?”

That’s all right, I’m all alone too.”

“Player 1, go for it” versus “Go for it!”



Maintain the illusion of awareness (6)

Be sensitive to the gender of the user

- Need to know gender when talking about one user to another user

Maintain the illusion of awareness (7)

Make sure the performance of the dialogue is seamless

- To concatenate audio files, they need the same mood, pacing, inflections, volume,...
- Video and audio can be combined using the right cuts
- Video concatenation requires same start positions

Maintain the illusion of awareness (8)

Avoid the presence of characters when user input cannot be evaluated

“So, do you mind typing up a few sentences as to why you didn’t like this book? Just hit SUBMIT when you’re done and your review will shoot off to our Member’s Book Review Compendium. I’ll come back when you’re done and if you want, we’ll look for another book.”