

LCC 6313 Project 2 Design Document

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Instant messaging (IM) pervades our digitally interconnected culture as a means of communication between coworkers, family members, and friends. Sometimes, casual IM conversation between acquaintances leads to more significant friendships, and sometimes, to dating.

Our Project 2 design takes a cue from the real world and sets up a virtual IM session in which the interactor engages a fictional IDT classmate in conversation. The goal of the session is to get the classmate to agree to going out to dinner.

Written entirely in Java, our program is implemented as a Java applet and runs in a standard browser window. Graphical character elements used in the program were created and animated with Macromedia Flash.

Interface Elements

Our first step was to think about typical IM experiences in order to leverage existing cultural and behavioral conventions. This allowed us to choose the most significant elements to set expectations and script appropriate actions.

In terms of user interface, the typical IM client has at least a dialog area, where text from both participants appears, and a text entry area, where the program user types text to be sent (see Figure 1). The IM client may also offer a number of buttons or menu-based commands for customizing the application.

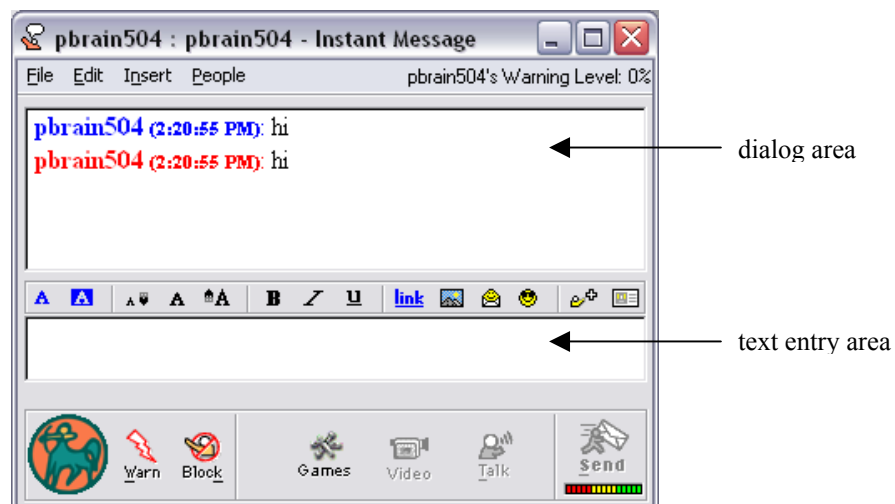


Figure 1: The typical instant messenger client interface includes a dialog window and an area for text entry. This example is from AOL.

Because ours is a virtual conversation with a simulated classmate, our application interface is somewhat simplified. As shown in Figure 2, our virtual IM program user interface is divided into

four areas: the avatar, the dialog window, an interactor dialog selection list, and a special button area.

The avatar is the general visual element for denoting classmate interaction status. We created an iconic and friendly stick-figure representation whose facial expressions denote the classmate's current mood.

The interactor's dialog selection list is one of the props used to script the interactor. The nature of a drop-down list invites browsing its contents, and the variety of elements within the list provides interesting options for replay. The interactor engages the character in conversation by choosing questions or statements from the drop-down dialog list. To structure the conversation, list elements are grouped by category, and only one question may be selected from each category during any one session.

As for a conventional IM client, the dialog window contains text elements from both sides of the conversation. The interactor's selections appear in this window followed by the classmate's responses. The combination of the classmate's responses and mood (as indicated by the avatar) provides overall session feedback.

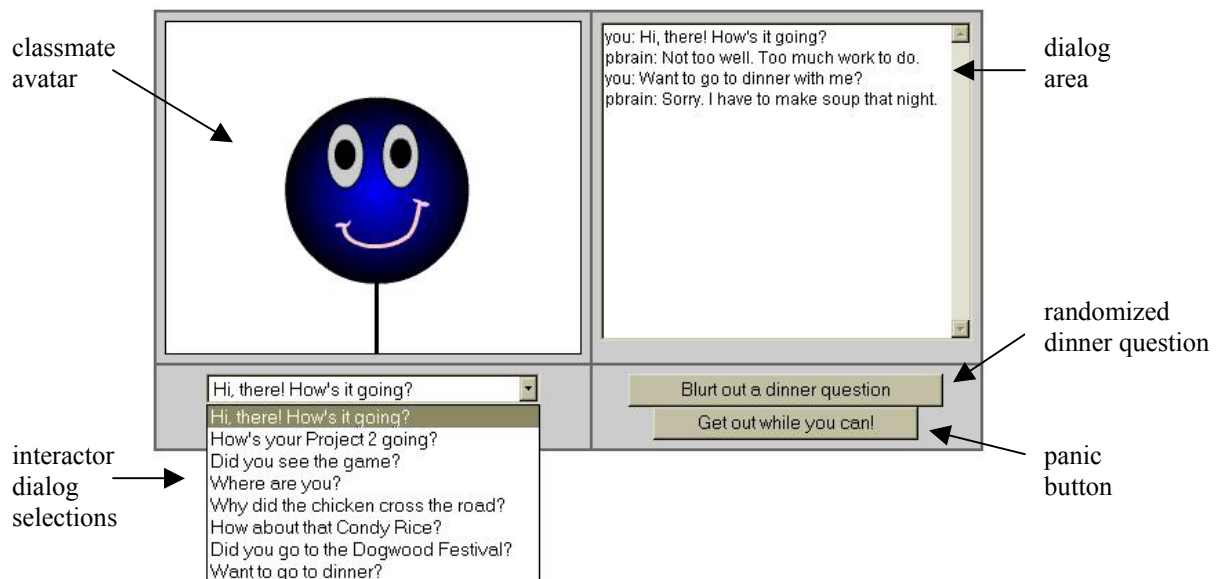


Figure 2: The virtual IM session window includes a classmate avatar, a dialog area, interactor dialog selections, and special buttons.

The "Blurt Out a Dinner Question" button is special dialog element. Designed to recall the real-life anxiety of asking someone out to dinner for the first time, clicking the button selects and posts a dinner question at random. Since there's no way to know which question will be selected, the button has to be used with care; if used too soon, or with the classmate in a bad mood, the interactor is very likely to get rejected. "Get out while you can!" is a kind of panic button that allows exiting the session without asking about dinner.

Interactor Cues & Activity Feedback

Our project effectively motivates and cues the interactor to action by providing a familiar situation--asking someone out to dinner--in the familiar context of an IM session. The specific responses offered by the character contribute additional cues. If the classmate is pleased with a particular question or statement, the response is positive. If the question is not of interest, the response is usually negative. Each response type carries an associated mood effect, as described later.

Humor is an important element for motivating play and is used to entertain the interactor and convey the classmate's personality. Humor and content variety are also important design elements for promoting interest in replay.

To provide a dramatic arc, the classmate IM session is framed by snippets of conversation with a third party, a close friend aware of the interactor's interest in asking the classmate out to dinner. The initial snippet provides an introductory narrative and sets up general expectations for the classmate IM session. The friend is in the IDT lab, where the classmate has just walked in and taken a place at one of the computers. The friend alerts the interactor with the following text:

“Hey, that special someone you’ve been wanting to ask out has just arrived in the IDT lab. Here’s your chance to start up an IM conversation and pop the dinner question. Take your time, talk for a while, and watch out for mood swings.... Good luck!”

When the classmate session ends, the final snippet from the friend is either positive or negative (depending on the outcome of the classmate session) and closes the story. If things went well with the classmate, the following message appears:

“Hey, looks like you’re finally going to have dinner with someone other than your weirdo roommate. Put off that assignment you should be working on, go take a shower, and get dressed to go out! Later!”

If the interactor is rejected or the interactor chooses to escape the session, the closing dialog takes one of the following forms. The first is displayed if the dinner question is asked too soon. The second appears if the dinner question is asked without first putting the classmate in a good mood. The third is used for in response to clicking the “Get Out...” button.

Ending Dialog 1: Post-rejection text, for question asked too soon

“Well, looks like you blew it. Perhaps you should chat for a little longer next time before popping the dinner question. Better luck next time, pal. I’m outta here.”

Ending Dialog 2: Post-rejection ending, for bad mood

“I can tell that didn’t go well! Your approach could probably use a little work. You should be a little more sensitive to mood, you know. You just might be pleasantly surprised. Perhaps you could try again... Gotta go.”

Ending Dialog 3: Panic button ending

So, you decided to quit early, eh? You know what’s best for you, I guess. It’s just a good thing you decided to get out now, before getting locked into going to dinner. See you later.

Visual Mood Indicators

As described above, the tone of the classmate’s responses is one indication of the character’s mood. The other main feedback component is provided by the classmate’s avatar and is used to suggest mood. As shown in Figure 3, the classmate can be in of four states: aggravated, neutral, bored, or happy.

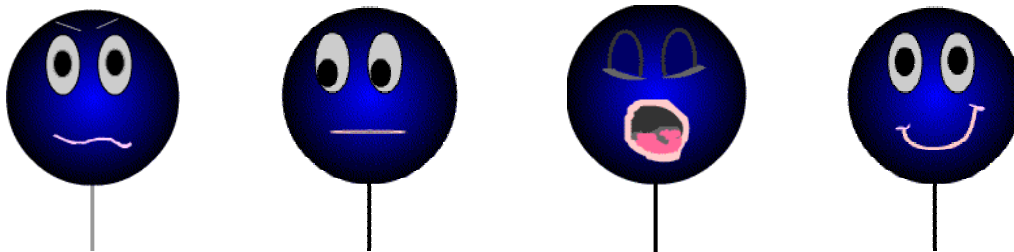
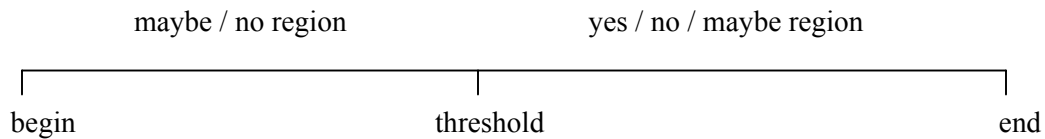


Figure 3: The avatar indicates classmate mood. The moods shown here, from left to right, are aggravated, neutral, bored, and happy.

Program Objects

The objects (and props) in our virtual IM application are the dinner button and the dialog elements available to interactor via the list box. The order (and to some extent, the timing) in which the objects are used affects the outcome. Each interactor question or statement has a specific effect on the character's mood. For example, saying something nice makes the character happier and selecting a dinner question too soon aggravates the character

The Dinner question is a special object. It can be selected from either the list or via the "Blurt Out a Dinner Question" button. The response is time threshold-based, as shown below.



If the interactor asks too early in the session (below the programmed threshold), the classmate's response is either a "maybe" or a definite "no." In the "no" case, the session ends. In the "maybe" case, the session continues, and the interactor has a chance to ask again.

Beyond the threshold, possible responses include a "yes" option. The "no" and "maybe" options are as described above, but in the "yes" case the session ends happily, with a dinner date. In all cases, the interactor is returned to the appropriate snippet of conversation with the friend (see Interactor Cues & Activity Feedback, above).

Program Structure

Our program functions are centered on interactor activity. As shown in Figure 4, if the interactor fails to offer conversation within a pre-determined period of time, the program times out and the classmate automatically selects a text element to get attention (see Appendix A for a list).¹ If the classmate is in a good mood, it tells dumb jokes. In bad mood states, the classmate is further aggravated. In all cases, the classmate's state is updated, and the program again waits for the interactor to take action.

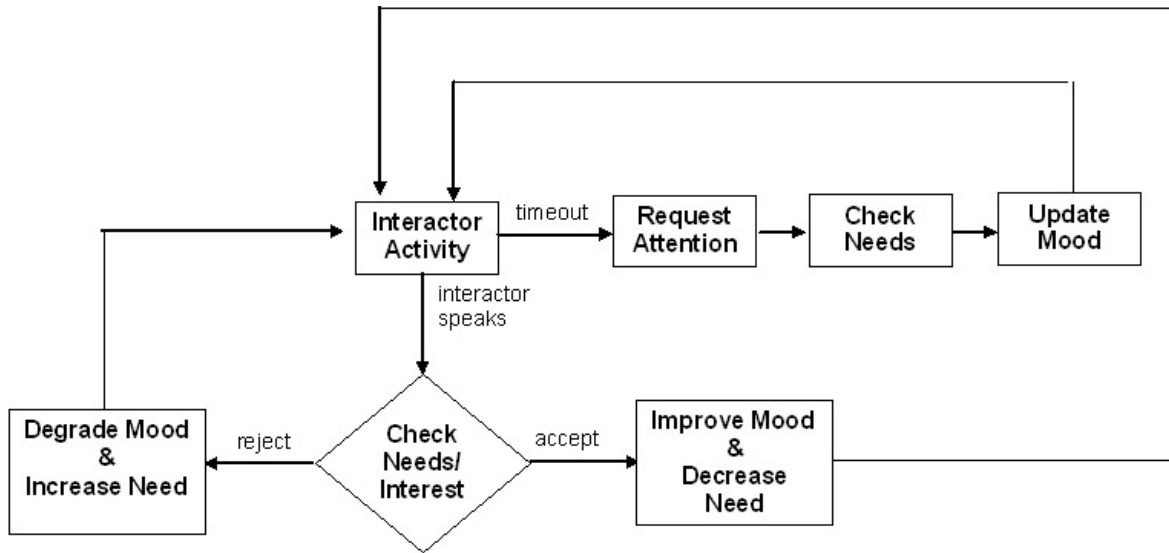


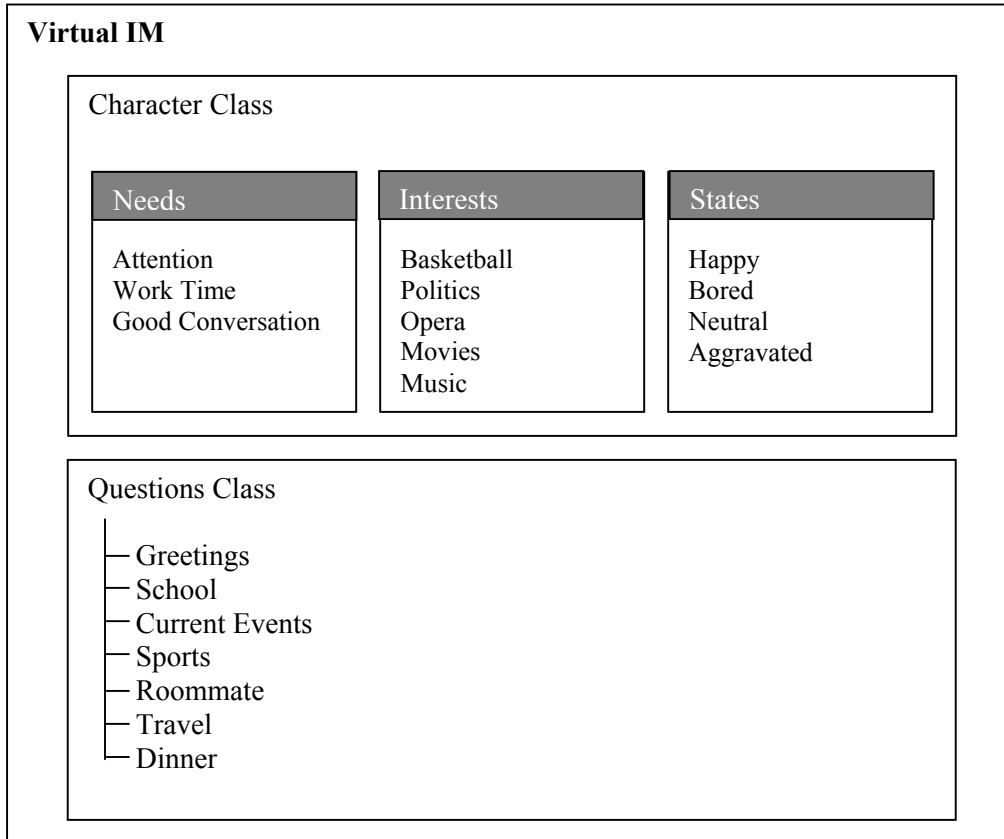
Figure 4. The structure of the virtual IM program is centered on interactor activity.

The rest of Figure 4 diagrams the basic conversational and interactive structures described in previous sections. In general, when the interactor “speaks,” the character checks its interest and mood, responds to the question, and updates its mood.

We defined specific likes and dislikes for the classmate in order to map out specific questions and responses. Each mood corresponds to an internal program state (happy, interested, neutral, or aggravated) that is updated throughout the session according to interactor activity.

¹ This is the only case in which the classmate “speaks” on its own.

Program operations are primarily contained within two main classes used to handle Character and Question elements. The Character class contains sub-classes that define or track classmate needs, interests, and states. The top-level Questions class contains specific question category classes. The question subclasses match the categories listed in the following diagram (and in Appendix A) and inherit behaviors from the Questions class. The following diagram captures the overall program class structure and how the classes interrelate.



Conclusion

By employing widespread cultural conventions in our application, we have created a virtual instant messaging program capable of presenting situations that are familiar and entertaining. Opening and closing messages from a third party provide additional drama, context, and interactor orientation. Combined with dialog variety, multiple outcome possibilities, and humor, the result is a fun and compelling applet that motivates replay.

Appendix A: Dialog Table

The following table relates possible interactor-character dialog elements. The “Interactor” column lists the questions and statements that can be used to engage the classmate in conversation. The “Character” column shows corresponding responses. “Mood Effect” shows the result (positive, negative, or neutral) of choosing a particular question. A positive response is given when the character is in a “happy” or “neutral” mood state; negative responses are given when the classmate is either “aggravated” or “bored.”

Greetings / Opening Lines

Interactor	Character	Mood Effect
Hi, there! How’s it going?	It’s going ok, I guess. I’m still trying to cope with having lost an hour to daylight savings time.	positive
“	I’m having a horrible day	negative
It’s good to see you online.	Thanks, I just logged on. Good to see you, too.	positive
“	Wish I could say the same	negative
Hi. What’s up?	Oh, nothing. Just working on my lab assignment.	positive
“	I’m in the IDT lab. I’m trying to get some work done! But between the frenzied activity level in here, and people popping up in my IM window, it’s not going well...	negative

Current Events

Interactor	Character Responses	Mood Effect
Have you heard the latest on Social Security?	Yes, I have. It’ll be a miracle if there’s anything left by the time I’m ready to retire. Good thing I’m already saving for retirement.	positive
“	Huh? Retirement is a long way off for me, and I’m not really interested in that stuff. Besides, once I’m a famous and powerful designer, I won’t have to worry about money.	negative
How about that Condi Rice?	She’s pretty sharp. I like her.	positive
“	What is that? Some kind of casserole?	negative
Did you hear the latest on John Kerry?	Yeah, they’re trying to bring him down, but he’s got my vote!	positive
“	Nah, I don’t really follow politics. I just don’t have time to devote to it, and I’m not really interested, anyway.	negative
Did you get to the Dogwood Festival?	Yeah, it was great. Dogwoods are cool.	positive
“	No, I didn’t have a way to get there. Besides, there was the OO Baby lab to do, then Project 2 to work on, and I’m rewriting my Project 1 paper...	negative
How’d you do on taxes this year?	Not bad. I’m getting back some money, for a change. At least there’s one good thing about being a poor grad student!	positive
“	Stupid IRS...don’t they know I’m broke?	negative

School

Interactor	Character Responses	Mood Effect
I like your Project 2 concept.	Thanks. Been thinking about it a lot.	positive
“	Yeah, right. Go kiss up to someone else.	negative
Your work is impressive.	Yeah, you really think so? Thanks for saying that.	positive
“	Why not stellar? Are you trying to say you're better than me?	negative
How is your Project 2 work going?	Not too well. My partner is a slacker, and I have to do all the work. I'm stressed out about it.	negative
“	Great! I'm just about done!	positive
Will you be at IDT demo day?	Of course. There are always tons of great things to see.	positive
“	Not if I can help it. I'll be sleeping!	negative
Have you applied for summer internships?	Yes, and I've got ten offers! Now it's just a matter of picking the one that pays the most for the least amount of work....	positive
“	No, it looks like I'll be stuck here again. What a bummer.	negative

Entertainment

Interactor	Character Responses	Mood Effect
Been to the opera lately?	Yeah, I recently saw La Boheme for the third time.	positive
“	No way. I hate opera. It's too drawn out, and I'm easily bored. I usually fall asleep.	negative
Been out shooting pictures lately?	Yes, at Piedmont Park. It's beautiful there this time of year.	positive
“	I wish! Just don't have time for that right now. Maybe this summer...	negative
What's playing at the Ferst?	MacHomer. It's a riot.	positive
“	Beats me. I've been trapped by schoolwork and haven't been out for weeks now.	negative
Seen any good movies lately?	Yeah, that Kitchen Stories film was pretty good, though my friends didn't get it. (It's a wacky Swedish film.)	positive
“	Who has time for movies?	
Any good music in town this weekend?	Yeah, there's tons of stuff. Check out Creative Loafing.	positive
“	Not sure, though there's bound to be something good happening at the Roxy or at the Variety Playhouse. But how would I know?	negative
Did you get to the Dogwood Festival?	Yeah, it was great! Dogwoods are cool.	positive
“	Nope. Too much other stuff to do. There was the OO Baby assignment, then the Project 2 prelim, and I'm rewriting my Project 1 paper from scratch...	negative
Did you see the finale of The Apprentice?	It was great. Omarosa caused lots of trouble as usual and Bill was running around like a chicken with his head cut off.	positive
“	I started watching it, but I fell asleep before the ending.	negative

Sports

Interactor	Character Responses	Mood Effect
It's good to see baseball on TV again.	Gotta love those Red Sox!	positive
"	Man, talk about a slooow game. Watching baseball is about as exciting as watching paint dry. Booring.	negative
Did you see the game the other night?	Yeah, baby! I put off my work, grabbed a beer, put my feet on the coffee table, and watched the whole thing.	positive
"	Nah, I'm not really into sports. Too much work to do, anyway. I haven't even been out much lately.	negative
Going fishing this weekend?	I'm tagging along with my roommate. She loves to fish. I think she's a little weird, but what the heck...	positive
"	Fishing? Ha. No way. You must have me confused with my roommate.	negative

Roommate

Interactor	Character Responses	Mood Effect
How are things with your roommate?	Okay, I guess, but she's pretty messy.	positive
"	Ugh. Don't ask. I have to walk through her piles of junk just to get to my room every day.	negative
Aren't you living near campus now?	Yeah, I'm rooming with a wacky CoC grad student.	positive
"	Yeah, but I have to walk though an icky part of town to get here.	negative

Travel

Interactor	Character Responses	Mood Effect
How was your spring break?	Okay, I guess. I should have stayed around to work, but I decided to head for the beach for a few days, instead.	positive
"	I'm broke, so I just stayed here and watched soaps all day.	negative
Got any travel plans for the summer?	I'd like to do something fun, but where I go depends on where my internship takes me. Wherever I end up, though, I'll be sure to watch out for sharks!	positive
"	Well, since I didn't get an internship, it looks like I'll accept that job offer from Arby's after all. I'll be starting out as head potato cake fryer!	negative

Dumb Jokes²

Interactor	Character	Mood Effect
[if no entry for >= a period of time & if mood is positive]	<p>[randomly selected response]</p> <ul style="list-style-type: none"> ▪ Here's one I heard just the other day...A neutron walks into a bar and orders a drink. When he asks the bartender how much he owes, she replies, "For you? No charge." ▪ Check this one out: Two atoms are out for a stroll. One stops suddenly and says to the other, "Hey, I think I dropped an electron!" The other atom says, "Are you sure?" and the first atom says, "Yeah, I'm positive!" ▪ A man walks down the street with a fried egg on his head. A passer-by asks him why. The man replies, "Because if was hard boiled, it would roll off." 	positive
[if no entry for >= a period of time & mood is negative]	<p>[randomly selected response]</p> <ul style="list-style-type: none"> ▪ Hey, where are you? I need a little attention here! ▪ I'm getting bored with this... ▪ It's not much fun to have an IM conversation by myself.... 	negative

Dinner

Interactor	Character	Accept/Deny
Maybe you need to get out. Dinner?	Yeah, okay. That sounds good. Pick me up at the IDT lab in 20 minutes.	accept
"	It's not going to get my project finished any faster. I think I'll just order pizza and have it delivered to the IDT lab.	deny
Can I buy you dinner?	You bet! Even if I wasn't broke I'd let you do that!	accept
"	No, thanks. It's my turn to make soup that night.	deny
The student center has an early-bird special....	Mmm. Sounds great. Meet you there!	accept
"	Hm...I have been here for hours....	maybe
"	Are you kidding? The student center? No thanks. Besides, that's the night I wash my hair.	deny
How about OK Café?	Excellent idea. I love their three-cheese macaroni. Sometimes I get four or five helping heaped on a single plate. Messy, but good! Pick me up in 10 minutes!	accept
"	I love OK Café, but I don't have a car....and I'm broke. (GRAs don't pay much, ya know...) I have to get back to my Project 2 now. See you later.	deny
How about we meet at the Varsity?	What a great idea! I thought you'd never ask. I'll shut down right now and get myself over there ASAP!	accept
"	Mmm...grease.... I don't know about that.	maybe
"	Yuk. Sorry. No way I'm eating there again. Last time I did I had to drink a whole bottle of Pepto. I gotta get back to work. See ya.	deny
Want to get a bite to eat? My treat.	Now you're talking! Pick me up in 20 minutes. I'll be ready!	accept
"	What? Look, you're a good designer and everything, but I'm not really interested in eating with you. Sorry.	deny

² This is special category that does not require interactor activity.