

Formal Logic

a Serious Game by Group Ate

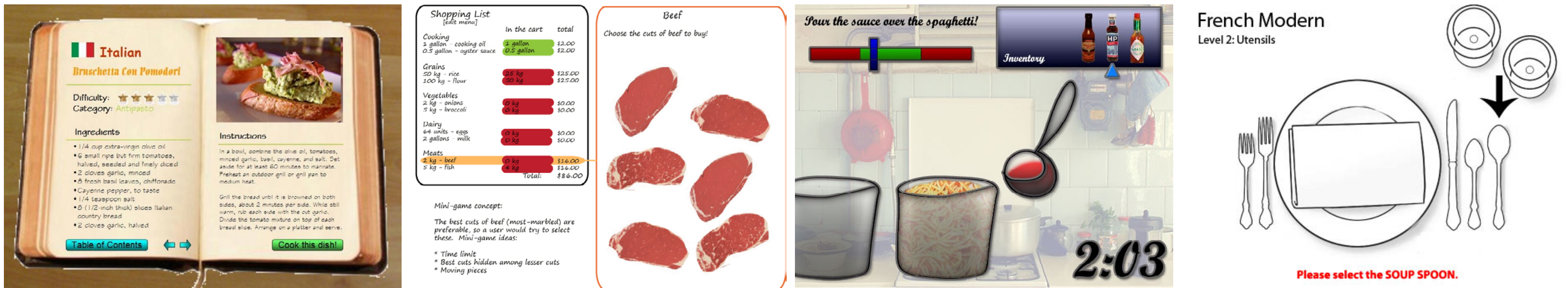
Problem, Solution

Problem and Solution

- Problem:
 - Dining etiquette is becoming a lost art
 - No easily accessible, low-cost source for etiquette *training* (rather than just instructions)
- Solution: a serious game for dining etiquette

Growing up, many people's exposure to food is confined to what they experience eating at home or within their local community. As a result, many people are unfamiliar with foreign food culture and etiquette. In addition, today's fast-paced world that emphasizes a "casual" dining atmosphere (fast food, take-out, no sit-down dinners at home) has led to overall unfamiliarity with general food etiquette. Both issues can lead to significant consternation as diners realize they have no idea how to "eat properly" at foreign and/or sit-down restaurants to avoid social embarrassment!

To make up for the lack of education in that regard, we've designed a game that can familiarize people with the behaviors deemed appropriate for formal dining occasions. The game aims to simulate a supervised dining experience where the player controls an avatar in a formal dining setting. The player is coached to behave correctly by an on-screen instructor who voices his concerns about the player's table manners. Additionally, the player must correct his mishaps in order to prevent a faux pas during the meal. The game is controlled using the mouse and is built on the C#.NET platform.



As it turned out, the initial restaurant manager idea which was produced during the Group Brainstorm turned out to be far too vast in scope, both in terms of allotted time for the project and effective instruction for users. We decided to return to one of our original brainstorm goals - teaching users proper eating manners - and concentrate our efforts on the dining aspect of the restaurant. By the time the Contextual Inquiry rolled around, we had a general idea of the gameplay for the game: the user would be presented with a view of their in-game character and the table with food, and complete various "tasks" that would serve as obstacles to eating and tools for teaching certain etiquette concepts, such as keeping a straight posture or passing condiments around the table. After feedback from actual prototype testing, we made changes and refinements to the control scheme, but the core gameplay model did not change much after the contextual inquiry.



When we set out to create our low-fi prototype, we made a few changes:

- * Slouching was changed - instead of a slider interface, we opted to change it to a more intuitive interface in which the player's avatar's shoulders droop and head wobbles down to indicate slouching, which would be fixed by the player clicking and dragging those body parts to their correct configurations. We thought this would help users to keep posture in mind by providing a visual cue for the player's posture status, rather than some abstract slider.
- * Originally we planned an intricate eating system where the user would be able to directly manipulate utensils to use them (for example, dragging a knife back and forth to make it "cut" through the food). We dropped this idea in favor of a system of left- and right- mouse clicks to "use" the utensils, which have predetermined actions based on the location of the cursor and the state of the food. We made this change mostly for feasibility reasons: during our low-fi prototype, we had no way to simulate the wide range of possibilities that could occur where the user given freeform control over manipulating the food. In addition, a simple two-button mouse wouldn't be able to fully simulate the range of freedom allowed with utensils without a complicated combination of clicks and holds, which we felt would be too complex for most users and require memorization of the scheme rather than an intuitive design.

Based on the feedback from our low-fi tests, we also made some changes afterward:

- * Instructions on using fork and knife: Because our first two interviewees found the application of the fork and knife confusing, we created dialogue boxes with instructions on how to use the utensils. Two boxes were made, one for the left hand and another for the right hand.
- * We noted in the boxes that to use the utensils, the user would have to operate two buttons (or mouse clicks). Based on the user feedback, we found it was most helpful to have the instructions displayed at the beginning of the game or at least in the tutorial. Click and drag body parts to fix posture: Initially, we had the user click on the various body parts (i.e. head and arms) to correct the character's posture. However, through the interviews we saw that the users were inclined to drag the body parts as opposed to simply clicking on the parts.
- * Changing cursors: The cursor was made to change from a utensil cursor when on the table area, to a "grabby hand" cursor (indicating click+drag ability) when hovering over the character's body, and a neutral pointer (indicating nothing to click) when in other areas. This should serve as an indicator to clue the user in on what can be done with the control scheme.
- * The etiquette coach, as represented by the smiley face and speech bubble at the top of the screen, was added to the game to give the user instructions and feedback. The smiley face icon can either be happy, neutral, or unhappy. This provides the player with a way to quickly see how he/she is performing. The reaction time is minimal for the player to glance at the face and recognize the "expression" depicted. The speech bubble provides a means to praise the player when he/she is doing well (positive reinforcement) and guidance on how to improve when the player is performing poorly. Our Contextual Inquiry and Task Analysis interviews showed users trust authority figures and/or "experts", so the instructions, tips, and guidance provided in this area will use that tone (e.g. the "coach" will not be overly-friendly or act as a peer of the user would act).



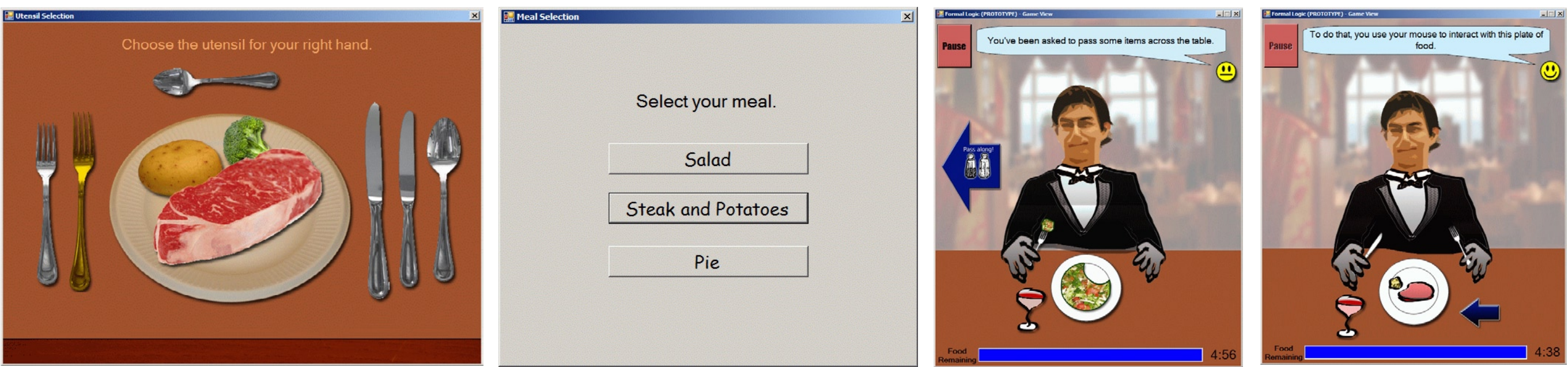
The top two main concerns in the Heuristic Evaluation were that (a) the game wasn't very effective at teaching good dining etiquette, and (b) the game's controls were somewhat unintuitive and hard to understand immediately. The first concern was valid, and we attempted to encompass more etiquette material by adding a utensil selection component. In general, however, we decided to not focus greatly on making the game more educational and instead put our efforts towards refining the interface for the game we already had, since the purpose of the class/project is not really to make the best game but to design the best interface possible.

As for the unintuitiveness of controls, we did a lot to address this. Initially the game's fork-knife utensil cursor (displayed when hovering over food) has lost some of its confusing nature. In the Lo-Fi prototype, the cursor had been merely an idea, and was just a crossed fork-knife combination on a post-it note. This evolved into the below icon for the interactive prototype. Finally we discovered that the order of the fork and knife was the opposite from the head-on view AS WELL as the actual controls (as in, the fork was on the left in the cursor icon, but it was on the right side in the actual gameplay, and was controlled by a right click). This was initially remedied by flipping the icon. Eventually we flipped it back and settled on a left-click-controls-object-in-left-hand while right-click-controls-object-in-right-hand setup, which works well also for continuity for the utensil-selection screen.

A component of the game we had intended to implement from the start but did not have time to until this stage was a utensil selection stage. This stage takes place after the user has selected a dish and begun a game, but before the player can start eating - the point is for the user to recognize the proper utensils to use for certain dishes. The interface uses a buzzer if the user chooses the incorrect utensil, and if there's a left-hand utensil as well, it goes onto that after having selected the right-hand one already. This actually somewhat addresses problem (a) of our Heuristic Evaluation concerns by introducing more material for the user to keep in mind.

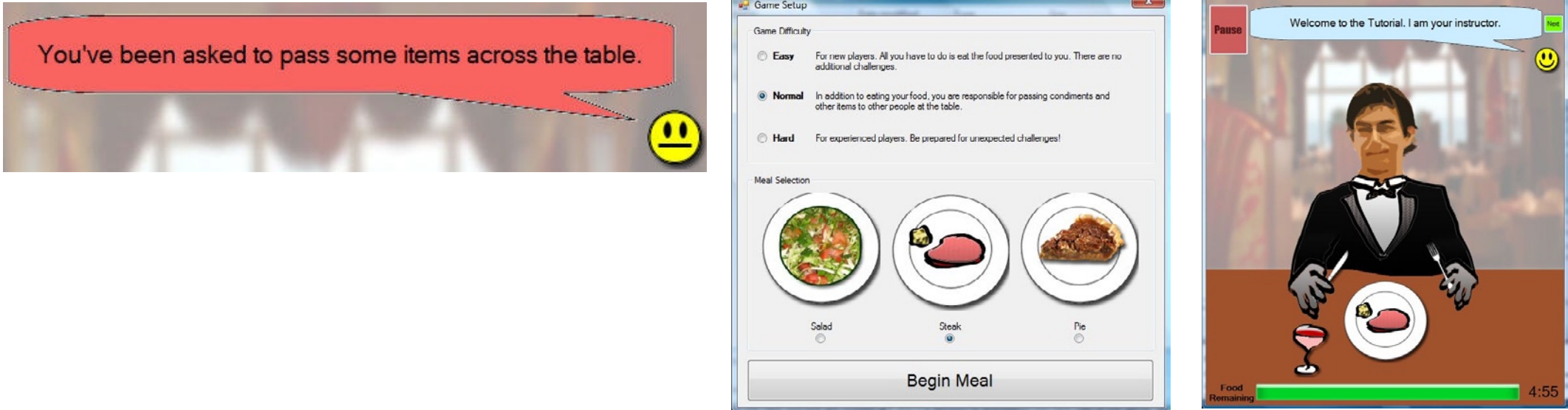
Finally, the game has the option of other meals besides steak/potatoes. This also means different control schemes; the salad does not need cutting at all, and the pie does but the cutting is done with the fork (so clicking with the fork first cuts it, then clicking again sticks it on the fork).

Last but not least, a Tutorial section was implemented to introduce the user to the game. The tutorial explains the interface components and control scheme, which will help with any user who is unsure about how the game works. The instructor for the tutorial also talks in the context of the game, explaining the real-life reasons behind various tasks and things to do in the game. The tutorial goes through everything step by step, so the user can understand what he/she needs to do when it comes time for the actual game. It is selectable from the game's main menu and presents the user with an example main game screen in which the tasks are laid out one at a time.



Ultimately, the Final Pilot implemented the items that were seen as problematic in the Pilot Usability Study. Thus the majority of the changes are merely fixes of past issues.

* Some users in the Pilot Usability Study complained about too many messages going in at once and not knowing which are time-sensitive. Now, urgent, time-sensitive comments from the coach as highlighted in red and stay up longer, solving this issue.
* Previously our special goal tasks have dealt with separately eating the food and then eating the food with all the distractions, two very different experiences. Originally we had planned out a long game in which each new stage introduces new etiquette-related distractions from eating. By giving players a level choice at the beginning of the prototype, we can test these tasks separately and we can ease in new players.
* Many of the interviewees for the Pilot Usability Studies had attention issues in that the tutorial was too slow-paced, and they kept trying to click places to make it go faster. A next button immediately solves this issue. It also grays out when the player needs to do something else (e.g. cut meat) to advance the tutorial.000



Target User

Target User Group: Gen Y

- tends to be more comfortable behind a keyboard or with a cell-phone than face-to-face across a table
- recognize inadequacy in "traditional" social encounters such as lunch interviews
- trust authority-figures and domain-experts regarding unfamiliar topics

Based on Contextual Inquiry and Task Analysis study conducted on October 1, 2008. A report on this study is available at: http://bid.berkeley.edu/cs160-fall08/index.php/Contextual_Inquiry-Group:Ate

Formal Logic is for casual "Generation Y" users who are interested in learning about dining etiquette. Specifically, the users are English-literate, of either gender, and have a basic computer-literacy and comfort-level interacting with computers.

As we discovered in our Contextual Inquiry, Generation Y users are inherently comfortable with technology. Our intended users currently use computers in a task-oriented manner: word processing, research, communication (email and instant messaging), and entertainment (videos and games). They also play simple computer games.

The target users learn through clear diagrams and visual instruction. Many use video walkthroughs that can adjust to the user's learning speed allow the user to follow along. Others have experienced (or strongly prefer) personal instruction from a credible authority (a parent, grandparent, or trained expert).

Final Prototype

