

Project Assignment 4

Online Battlemat

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Introduction

Many friends get together on evenings or weekends to play Dungeons & Dragons (D&D), but young adults find themselves separated from friends as people move to different states for college or jobs. These friends already communicate with existing instant messaging or voice chat software and even play multiplayer computer games over the internet but there is no software that supports the freeform and imaginative play of pencil and paper D&D.

A very important tool for most pencil and paper play is the battlemat. This half-inch grid is drawn upon to simulate the environments of a fantasy dungeon and model miniatures are moved about to represent character locations. This allows an interactive knowledge of tactical capabilities accurate to the players' imaginations as well as the game's rules. Functionality like this is important to playing D&D, but it's not reproduced easily or accurately in any existing networking software. The goal is to create an online battlemat solution which will allow players to engage in D&D sessions remotely and will replace the traditional, physical battlemat.

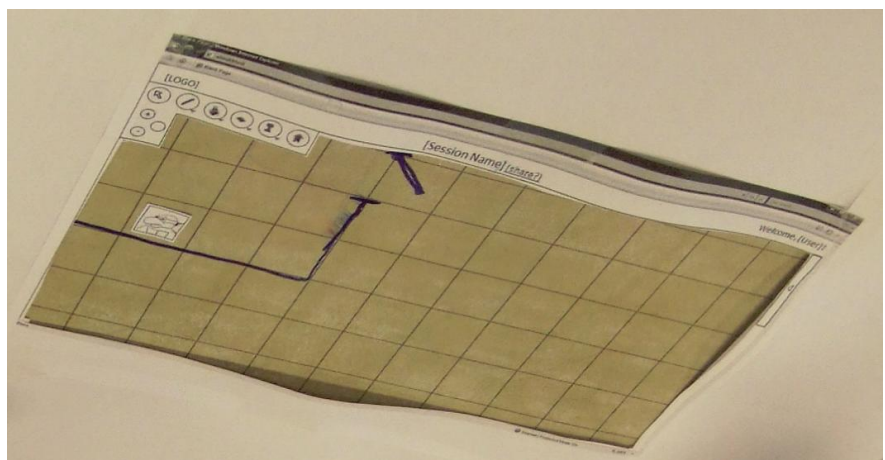
A usability study was performed to research how potential users would actually use the proposed interface. An actual battlemat was set on a table and a printout of the browser frame and Online Battlemat interface (see figure 1) was placed on top of that. Using a stylus, users performed actions as they would with a mouse on the computer. When users selected the drawing tools, they were handed uncapped markers and told to draw directly on the battlemat inside the browser frame. To use tools like templates or tokens, users were handed small printouts cut to size to place and use on the battlemat. Popups were simulated with sticky notes and index cards place on the prototype interface. Users were asked to click with the stylus like they would with a mouse and write with the stylus where they would normally type on the keyboard. Through the use of these tools, our study highlighted some areas that needed work.

Prototype Description

Our prototype involved of four main pieces:

- a real battlemat
- a screen boundary
- dialog boxes
- miscellaneous items

The real battlemat was laid on the table with the screen boundary placed on top of it. This imitated the visible area for the user. When user interacts with the online battle map by zooming in or out, or scrolling to the



sides, the boundary imitates the real design by showing larger/smaller portions of the battlemat or showing other areas. The physical battlemat and the screen boundary together compose the view of the system.

Imitation dialog boxes made out of index cards were used to display any important messages or errors. These boxes were displayed when user prompted a certain event. The following list is the dialog boxes we prepared:

- This feature is not implemented yet
- Join game
- Upload token

Finally, there are miscellaneous items including spell area shapes, tokens, and button icons. As the user interacted with the system, our imitation computer placed, moved, and interacted with the user in the same manner as our proposed, final product.

Method

During the study, Kurt acted as the director and note-taker. He gave each task to the user and gave the initial instructions and introduction to the system. He was also the one to ask users what they were expecting to happen when they indicated that they were confused or surprised. Michael acted as a note-taker as well, simply observing the actions of the user. David played the role of note-taker and photographer and is responsible for the pictures seen in this document. Jordan was the



computer, responsible for handing the user the correct tools, displaying popups, and making sure the interface responded appropriately to user actions.

Our study was carried out by sitting the user in front of the prototype and asking the paper prototype user to perform six small tasks that approximated a set of common actions a real user would perform. Initially, users were handed a stylus to act as a mouse pointer. They were asked to tap things on the interface with the stylus as though they were clicking with a mouse. In the case of text boxes, users were asked to simulate writing in the boxes as though they were typing on a keyboard. The tasks users were asked to perform are:

1. Join a game
2. Upload a token

3. Place a token
4. Move a token
5. Draw on the battlemat
6. Use a spell template

Through observing users perform these tasks, we were able to take away several key things that will allow us to improve our system as discussed in the following sections.

Observations

Each user ran through their tasks of joining their friend's game session and using the battlemat for play. There were some limitations to the paper prototype in representing the functionality of our system, but the users were able to discover several high and low points of the system.

Based on the results of our study, we were able to find several areas of improvement in the system:

- Users new to D&D had difficulty understanding the idea behind our system.
- Users had great difficulty identifying the function of our small, black and white buttons.
- Users did not know what their token looked like when they performed the task of uploading it, so they could not accurately identify it at first-glance.
- Users said they had expected to be able to use the uploaded token immediately, instead of being forced to find it in the system's menus.
- Users were confused by the Paint Bucket tool and didn't understand its functionality.
- Users noted that the system lacked a way for them to erase things that they drew on the battlemat.
- Users were confused by the Template tool and using it to place different shapes.
- Users were hoping for some Help functionality.



Users uncovered some easy to use and intuitive areas of the prototype as well:

- Joining a session was very intuitive to grasp, even without being told about the game session metaphor.

- Moving character tokens and drawing on the battlemat surface worked very easily after the proper tools were found.
- Zooming worked well once it was attempted.

Prototype Iteration

Based on the observations in the previous section, the team discussed necessary changes before having three more people perform the tasks from before. The observations made during the initial session provided a good opportunity for the team to discuss details of how things should work in the system and how the interface should flow. Additionally, it allowed the team to think about the necessity of some features and to cut them where it was determined that they were not useful to users.

Before observing three more observers, we made the following changes to solve the issues we identified and discussed earlier:

- Changed the script to mention system metaphors (like a real battlemat, like a computer painting program, like an online game).
- Printing off larger, colored buttons.
- Showing the thumbnail of a token when the user browsed to it.
- Changing the in-hand tool of the user immediately after uploading the token.
- Removing the Paint Bucket tool button and putting an Eraser tool button in its place.
- Displaying a help dialog when the user first selected the Template tool.

Discussion

The paper prototype revealed many problems with the risky aspects of the Online Battlemat System. In particular, we found that our frequently-used buttons did not have clear icons, leaving users lost as they approached their tasks. After improving the buttons for the second iteration, all common tasks showed significant improvement in ease of use. We plan to add tooltips to more advanced prototypes as a limited Help function.

Another very risky area was the spell templates. As both novel and complex functionality tied to what is already an advanced task, users were often left confused about how to use spell templates in the system. This was a clear area for which to consider adding Help dialogs - after doing so, users were a little less lost about how to use the templates. It was certainly limited by the medium which prevented us from easily showing highlighted squares or special selection cursors.

One area that always worked very well was joining a game session. The simplicity of the dialog along with a predefined notion of joining game sessions made this task trivial to accomplish for all involved. The metaphor of the battlemat surface and its manipulation was also highly intuitive, as soon as users got past our unclear tool buttons.

Overall we frequently felt limited by the medium of paper prototyping. We plan to have many subtle user feedback elements that could not be easily represented by such primitive prototypes. Though we tried to make our tasks applicable to a real D&D session and as immersive as possible, there are certainly aspects of the online battlemat which will not be discovered until a real gaming session, with real players and real friends, is playtested.

Appendix

Demo Script (Old)

- We're making a new battlemat system.
- We need your honest and open feedback.
- Imagine playing Dungeons & Dragons (D&D) with friends online.
- Imagine that you are communicating with your friends via voice chat.
- Work through a D&D session using the tasks that we hand you.
- Speak out loud everything that you are thinking.
- Complete these tasks. Here is your first task.



Demo Script (new)

- We're making a new online battlemat system.
- We need your honest and open feedback.
- Think of the system like a battlemat, except on your computer screen - you manipulate it like a computer drawing program.
- Imagine playing Dungeons & Dragons (D&D) with friends online, like joining an online game.
- Imagine that you are communicating with your friends via voice chat.
- Work through a D&D session using the tasks that we hand you.
- Speak out loud everything that you are thinking.
- Complete these tasks. Here is your first task.

Tasks

Join a game

You intend to join an online D&D game with your friends. You have already loaded the Online Battlemat system Web-page in your browser. In a chat room, your friends tell you to join game session 45345 with the password *foo*.

Upload icon

Now that you're in the game, you need to upload a picture to use for your character token. Your picture icon is called picture.jpg and is located on your desktop.

Place token

Now with your token uploaded, place your token on the battlemat surface. You can place it wherever you would like as long as it is outside the blue box (it's a temple that your dungeon master drew).

Move token

It is your turn, and you want to move your character inside of the Temple of the Forgotten God to further inspect ornate treasures stained with blood and placed on the sacrificial altar.

Draw on battlemat

Your dungeon master placed some tokens representing evil cultists attacking you in the temple. Your character casts a wall of fire spell to prevent their escape. This spell creates a lasting blaze that blocks off the temple entrance. Draw some fiery lines on the battlemat to delineate the conflagration.

Spell template

You need to cast an instantaneous spell that blasts the enemy cultists in a 15-ft (3-square) cone. Select a spell template to see which enemies you could affect in front of you.

Condensed Initial Paper Prototyping Notes

- joining the session was carried out without hesitation or delay.
- upload icon was recognized as a "person"
- Unclear buttons in game – guessed correctly ("looks a little bit like a person")
- No feedback of successful upload
- No help button
- Just started trying buttons in order
- Click outside to [make message] go away
- "Large pirate" [placed] on grid intersection
- paint bucket was not intuitive
- Buttons are too small.
- character token selection was recognized as "small nuclear explosion"
- move [character token] was intuitive (drag & drop)
- scrolling screen was intuitive
- Remembered button icon response
- Squares vs. feet and setting that display
- How to get other template shapes [side vs. corner]
- Expected multiple shapes to "drop permanently"
- Dialog to show how to place template, first time
- No help feature
- Clear join screen
- Not sure where to even start looking [for icon upload] – good guesser though (far edge)
- Clicked the battlemat to place right after loading – good guesser again (next button over)
- Just used cursor (not marker) for drawing – again a good guesser

- Response from bucket and pen too similar -> confusing
- Needed the dragging action but had the template icon out
- Browse button in the "upload icon" isn't implemented yet... was confused.
- Got the character icon correctly.
- ...did not a drag & drop but click and reclick.
- Correctly got the paint tool.
- ...didn't get the shift of screen.
- Login screen never confusing so far...
- Completely lost on the icon upload. Starts looking at the icons, takes about a minute. Confused even when given right message box was given.
- Clearly frustrated at the icons.
- Much happiness upon clicking on the correct icon.
- Does not know what "wall of fire" spell should be.
- Didn't get the across the entrance part of drawing on the board.
- "don't know how to upload", no help, just start trying buttons – at least clear that other buttons were not for upload [by button response]
- "that does the same thing as the other thing" [paint bucket vs. marker]
- "is [logo] clickable?"
- Didn't recognize the upload response
- Couldn't remember what any [buttons] did
- (tasks not clear enough to implicitly include battlemat dragging)
- Figured out selection tool implicitly
- Tried to draw without marker
- Pen tool obvious selection – figured out dragging after that
- Memorable once figured out [button responses?]
- Drop downs [options] clearly labeled
- Might want a help button
- Guessed upload button right
- Tried arrow for placing icon – "obvious nothing happened" [on upload]
- Zoomed out – obvious
- Scrolling, not sure how to try
- Zoom back in
- Red a clear choice for fire
- Easily logged on.
- Easily paid attention to the icons.
- Got the zoom and scroll screen easily.
- Placed the cone in a wrong way.
- Requested that buttons be more intuitive.
- Implicitly knew to get selection tool back
- Picked correct template tool and template – attached corner to wrong square
- Not as clear (supposedly) for someone who hasn't used a battlemat, what a battlemat can even do.

Condensed Improved Paper Prototyping Notes

- Placing token immediately after upload easy [with immediate selection] – could be more confusing for DM that uploads many icons not placed right away...!
- Image confirmation thumbnail recognizable
- Button icons seem clearer – bigger, color helps
- More esoteric battlemat buttons still caused hesitation
- "like MS paint...there should draw buttons..."
- [General] help would still be nice –tooltips could work for some things
- Spell template help dialog made it clearer how to proceed.
- Wanted to place permanent template, switch to different tool and draw outline...
- Things that worked [in previous prototype] still work
- Eraser handy for line mistake [not even part of the task]
- "do other players see the template?"
- Confused a little by instructions on template placement...
- Buttons seemed to confuse them less
- Found marker tool easily [without paint bucket to confuse them]
- Eraser tool selection response not as clear [limitation of paper prototype...]