Tool for Map Creation and Map Interaction During Tabletop Game Sessions

Abstract
Tabletop board games are a collaborative creative process that can benefit from new technical tools to augment game sessions and improve the existing creative process. This demo is an interactive map creator made to create dungeon maps for people who play tabletop board games, specifically game masters who run those games. It has an editing component for people to make maps, and a display component to view and interact with those maps. Users can engage with the demo on two levels, as a creator making dungeon maps, or as a player exploring them.

Author Keywords
Tabletop games; maps; digital interface; interaction; projection;

ACM Classification Keywords
H.5.2 User Interfaces --Interaction styles, screen design, user-centered design; H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous; Design;

Introduction
Tabletop Role Play Games (RPG) are a popular game format where a group of 4 to 10 players meets regularly to create a collaborative story. Each player controls one character, and one person is the Game Master (GM) who controls the setting, world events, and Non-Player Characters (NPCs). By following the rules set by the game system, players can control their characters to interact with the world the game master has created. There are a variety of game systems available to use, each with their own genre of stories and differences in mechanics that lend themselves to different types of games. One of the most popular and long-running is Dungeons and Dragons, made by Wizards of the Coast, which is currently on the 5th

edition of the rulebooks. The Dungeons and Dragons game typically has a high fantasy feel and players can fight monsters, interact with NPCs, and explore the world.

One common feature of many tabletop RPGs is exploring the environment, whether it be a dungeon, city, or enemy's lair. The best way to represent this fictional place is through some sort of map or model of the building. However, this is where issues arise. Giving players the whole map of what they are exploring ruins much of the mystery and enjoyment of the game. Having players draw their own map as they explore is a decent solution, but can be fraught with issues of communicating how the map should look, and can waste a lot of time during the game. Then there is the issue of where the map comes from. Using only premade maps is incredibly limiting to the GM, but unless you have decent skills in drawing or photoshop making your own can be time-consuming, difficult, or impossible. This is where technology can come in and assist in creating and displaying maps for use in game sessions.

Tabletop games are a community-centered and collaborative experience that have been operating in low tech ways for over 30 years. Currently, many tabletop game setups underutilize existing technology and can benefit from added tools that can solve common game problems. This allows for increased creativity by bringing in higher tech solutions --while still maintaining the incredible creativity and freedom that comes from playing an in-person open-ended game as opposed to the high tech but more rigid format of video games.

But first, what tools currently exist for tabletop games? Has this problem already been solved? While an exhaustive summary of all tabletop game tools is beyond the scope of this brief, two particular map-based tools are highlighted to contrast with the goals of this project.

Roll 20

Roll 20 is an online RPG game tool for people playing tabletop games online instead of meeting in person. It has a map area that the Game Master can create and reveal to players as they discover new areas. It also has a chat box for players to interact and roll dice, as well as resources for players to make character sheets and access stats for various game components.

Overall the site is very functional and has many of the tools a user would want in an online RPG game tool, but the ease of use and interactivity of these tools is subpar. User feedback indicates there isn't enough screen space to see enough of the map, and the player's character sheet, and the chat where rolls are being done all at the same time, which all need to be referred to frequently throughout the game. The overall visual design looks haphazard and unpolished because map assets are just images pulled from anywhere online, which don't scale well and don't have a cohesive look.

However, Roll20 is ultimately designed for a different purpose. It was created as a tool to allow for remote games between players who cannot meet in person, not as a tool for players who need better map capabilities for their in-person games. Therefore, Roll20 would never solve this problem even if the issues described with the site were fixed in subsequent versions.

Dyson's Maps

On the other end of tabletop tools, Dyson's Dodecahedron is a blog created by Dyson Logos to discuss and share his love of RPG games, maps, and other aspects of these games. He has a massive collection of hand-drawn maps that he has created and

discussion will be focused on the different maps he has released as opposed to his blog as a whole.

His maps have a detailed and consistent art style that adds a gorgeous aesthetic to a game session. Some notable projects are the isometric maps he's created, which have a lovely 3-dimensional quality to them that adds to the realism when playing with them. Another notable project is his Geomorph series. Geomorphs are a series of standard tiles that can be linked together in any orientation to create unique maps that can be reused over and over.

While Dyson's maps are beautiful, he is the only one who can create maps exactly like that, and his maps are limited to only what he's drawn and released. Furthermore, they must be printed out and used in physical games which is the very problem attempting to be solved. His maps are mentioned so to have a comparison between what is available in a low-tech solution and what a high-tech solution should improve upon to considered better than the current standard.

Results

From this analysis, goals for what a map tool should be able to do are starting to become clear. There are two aspects to this tool that need to be achieved in order to create an effective socio-technical system. The tool should be enjoyable, intuitive, and easy for Game Masters to use to create the maps they need, and it should be an enjoyable and exciting experience for players when exploring the map during game sessions.

In order to ensure such a tool will effectively benefit GMs, a survey was created and sent out to Davis Roleplaying Activities & Gaming Organizational Network (DRAGON), which is UC Davis' local gaming club, and the subreddit DMAcademy to collect info from the target user base. The results were compiled and turned into a user profile that became the basis for the target audience. From those results, a set of features was created. Feedback indicated users wanted lots of tile options for customizing, an ability to print or share maps, and ways to add information to the map about monsters, traps, or other notable features. When sharing the map with players a fog of war (where players can only see what they've explored and everything else is hidden) feature was highly desired, as well as some sort of projection capability so that players can interact with the map.

Currently, the demo is a lightweight web application created using HTML, CSS, and Javascript. It is still being designed and tested but the features described below are the planned full capabilities the demo will have once finished.

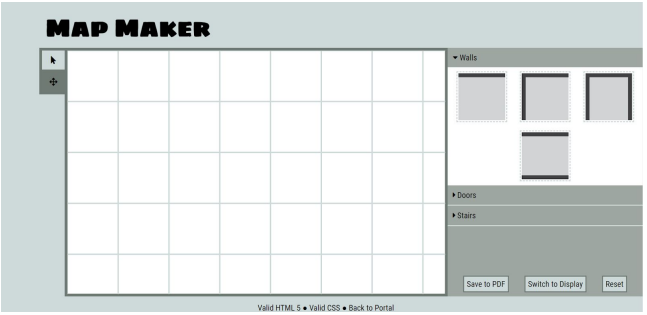

Figure 1: Current Iteration of Map Creation Interface. Note the sidebar with tiles that can be dragged onto the canvas.

The map creation process is designed to be simple to accomplish, so the user can focus on creating their map and not worry about how to use the tool. To achieve this a series of modular tiles were created that can be dragged out onto a grid and rotated, layered, and moved into the position the user desires. A basic pan/zoom feature allows the user to change how much and which parts of the canvas they are looking at.

When they are done creating their map, they have a couple of options. They can print a to scale version of their map if they are more comfortable with the low-tech paper way of presenting maps. Otherwise, they can switch to display mode, which allows them to hide and reveal sections of the map, add and move player icons, and their map is now ready to show to their players.

To create a truly enjoyable and immersive experience for players, a projector can project the map onto the table, and physical tokens can represent the players and be placed on the table, aligning with the map. Thus, the interaction between the digital -the map projection- and the physical -the player tokens- allows the players to claim ownership over their characters and be engaged in their characters interactions with the world. On the computer, the GM can control the map, revealing sections, and adding to the immersion through storytelling. Thus, the interactions between player, token, game master, and projection creates a fully immersive experience and allows the world created in everyone’s imagination to come to life through technology.

Discussion

A large part of being a game master is the creative process of creating a world for your players to explore. The human touch and imagination needed to generate ideas for game sessions are augmented by the demo, which allows the user to record the ideas they have in a tangible way which can then be shared with others. However, that is only part of the process. The draw of tabletop games is really in the collaboration of the community. The GM can come up with as much material as they want and have a whole plan for what is going to happen, but the minute the players start to interact with the story hook the GM has given them, that all changes. The improv, the collaboration between the GM, who controls the world, and the players controlling their characters is what transforms the creativity of each individual into something larger than the sum of its parts.

This map demo is an attempt to tap into that in a tangible way, and aid GMs and players in this natural creative process to allow them to create better things than they could on their own. It is an attempt to take the story being created out of the theater of the mind (where vivid imagery is created in players' minds through sound alone) and sonic modality, and into the visual and tangible modalities. Because of the highly variable nature that stems from the improv during game sessions, being able to modify and change components on the fly is an important feature that allows the demo to work with users needs and not against them.

While the main focus of this project is to explore the transformational creativity that can result from bringing technology into the traditionally low tech community of tabletop RPGs and how that transforms the experience of playing a tabletop RPG, a user does not have to be a game master or even have knowledge of tabletop games to use this demo. The map making tool is designed to be simple and intuitive enough that anyone can use the tool and enjoy creating a map, and see the map that they’ve made come to life as an interactive projection. Such a demo would be a creative and rewarding experience on its own even when removed from the environment it was designed for. Furthermore, the demo would allow audience members to learn a little bit about one aspect of the creative process of tabletop games.

References

1. @BESW. 2017. Origin of term 'Theater of the Mind'. Retrieved March 8th, 2019 from https://rpg.stackexchange.com/questions/9244
2. @RadioactiveCashew et al. 2019. DMAcademy. Reddit. Retrieved March 8th, 2019 from https://www.reddit.com/r/DMAcademy/
3. Dyson Logos. 2019. Dyson’s Dodecahedron: An RPG Blog, with a few Maps. Retrieved March 8th, 2019 from https://dysonlogos.blog/
4. Emily Hery. 2019. Tabletop RPG Map Survey. Retrieved March 8th, 2019 from https://docs.google.com/forms/d/e/1FAIpQLScbQGoH_JOJSjPAnkEi6mgtzLGN9kb_b1DCBZD42QQrpoul5Q/viewform?usp=sf_link
5. Jeremy Crawford and Mike Mearls. 2014. D&D Player’s Handbook. Hasbro SA, Delémont, CH.
6. Joseph Senecal et al. 2019. Dragon at UCD. Facebook. Retrieved March 8th, 2019 from https://www.facebook.com/groups/ucddragon/
7. The Orr Group. 2019. Roll20. Retrieved March 8th, 2019 from https://roll20.net/