ReadySelectPlay Proposal

Names: Jayanth Gangadhar, Matthew Hantsbarger, Parshva Shah

1. **Problem:**

Everyone loves a good board game party! But nobody likes wasting time arguing about what game they should play. We imagine ReadySelectPlay as a cooperative board game party application, with the goal of reducing conflict or time wasted on selecting board games.

2. **Target users:**

The user population is board game players at various types of events. They could be individuals at a privately hosted board game party, or at a board game event at a game room in a local board game shop, or even at an event hosted by a social interest meetup group.

3. **Solution:**

Prerequisite: The host acts as an administrator and is aware of all the games that are available to play with. The host selects the games from the in-app library that are available for selection for the upcoming game session.

The party host would be able to invite players to join. Next, the host could enter player criteria, such as number of players, difficulty level, play style, game category and length of play. Based on this set of filters the app would generate a list of games. Then players would be able to vote on a resulting selection of game matches, and the app would tell them which game to play.

Some factors which may influence our solution are:
- How much we want to systemize the group decision-making into our app.
- What categories for filtering/choosing games are useful to players.
- The process for final selection/voting/randomization.

Our current proposal for how voting and selection works is that each player would vote for their preferred game from the filtered list. Then the top voted choice would be presented. In the case of a tie, the game to be played would be chosen randomly from the tied games.

4. **Review**

- **Existing Systems Review**:

Overview:

- [Board Game Geek](#) has a huge database of board games. It has a feature to create a user account and add games to your collection which can be further filtered on the basis of various features like number of players, target time, game complexity, type of game, etc.
- [Cardboard Butler](#) is a website that uses the usernames and list of games from Board Game Geek and lets the users sort and filter them based on different features such as game category, duration of play and number of players.

Issues: The systems described above are similar to the application that we are trying to build. However, these systems present the users with a list of options based on the features selected. They do not narrow the list down to one single game which is essentially the problem that we

are trying to address, as the list of games again leads to wasting of time on deciding the game to be played during the game session.

- [Spinning Wheel](#) facilitates the user to enter choices manually (board games in our case) and after spinning the wheel, a random game would be selected which is supposed to be played. It can be used to come to a final decision regarding which game needs to be played which is the end goal of our application.

Issues: A user would have to make a list of games (choices for the spinning wheel) manually by making note of the games which the user has. The user is expected to have knowledge of all the games' properties and should apply the filters and preferences manually. Also, the game is selected at random and the end result might be unaccepted by many.

Solution: ReadySelectPlay tackles these issues by combining features of all of the three websites. Our system will present the users with a list of games available for playing from the in-app board games library. The list of games is further filtered by selecting the desired features. Once a list of of games is presented, the users can narrow it down further by a voting mechanism thereby taking care of the user consent. If there exists a tie even after voting the system selects a game at random similar to the spinning wheel game selector.

Hence, all of the user's preferences are taken into consideration for selecting the final game that will be played during the game session.

- **Academic Literature Review:**

  - **Designing interfaces that influence group processes**[1]**:** This paper is about how interactive environments can augment group decision making by persuading the group to change its decisions to avoid decision pitfalls. The mechanism used was a recording microphone that captured phrases said by participants and emphasizing phrases said by people who spoke less in an attempt to balance influence of participants voices in decision making. The results of the paper indicated that the task performance increased as a result, but introducing technology into decision making show a decrease. The paper and other related research suggest that implementation of the technology itself can affect the decision making process and that there exists strategies to promote discussion regarding minority viewpoints within the group, which may be helpful in our project if we find it necessary to balance individual preferences.
  - **Consensus building with individual consistency control in group decision making**[2]**:** This paper proposes a framework that balances individual consistency and group consensus that includes thresholds for overall consistency and iterative mechanisms for improving both consensus and consistency if thresholds aren't met in decision making. This paper could be important in deciding what mechanism we implement to aid in group decision making and optimizing any such model in our project.
  - **Individual Confidence-Weighting and Group Decision-Making**[3]: This paper argues that individuals combining weighted estimates of a quantity and compare the aggregate value against an optimal decision criterion to determine a binary decision outcome is a better approach than combining binary decisions from all individuals. This paper could help us decide on an alternative approach to voting (if needed and relevant) like asking for preferences among the filtered list of board games from users for calculating a total weighted score.
  - **Enhancing Collaboration in Tabletop Board Game**[4]: This paper is about how collaborative rules enhance sociality and engagement in digital tabletop games, examined using the Social Presence in Gaming Questionnaire. Ultimately we do not think this paper is useful to our project since it is primarily focused in implementation of technology into board games and the effect of collaboration on game enjoyment.

- **Polarization Effects in Group Decisions**[5]: This paper examines group decision making with regards to risk and cost analysis, hypothesizing that examining risk results in polarization towards extremes, examining cost avoids polarization if discussion exists beforehand, and that diverse preferences results in no polarization. Our group decision making problem does not seem related to risk or cost analysis issues that appear in this paper, so it's conclusions about group polarization do not seem relevant to group decisions regarding board game selection.

5. **Citations**

[1] Joan Morris DiMicco. 2004. Designing interfaces that influence group processes. In *CHI '04 Extended Abstracts on Human Factors in Computing Systems* (CHI EA '04). ACM, New York, NY, USA, 1041-1042. DOI: https://doi.org/10.1145/985921.985969

[2] C. Li, R. M. Rodriguez, L. Martinez, Y. Dong and F. Herrera, "Consensus building with individual consistency control in group decision making," in *IEEE Transactions on Fuzzy Systems*. doi: 10.1109/TFUZZ.2018.2856125, URL: https://ieeexplore.ieee.org/abstract/document/8410802

[3] James A.R. Marshall, Gavin Brown, Andrew N. Radford, Individual Confidence-Weighting and Group Decision-Making, Trends in Ecology & Evolution,Volume 32, Issue 9, 2017, Pages 636-645,ISSN 0169-5347, https://doi.org/10.1016/j.tree.2017.06.004. (http://www.sciencedirect.com/science/article/pii/S0169534717301520)

[4] Taoshuai Zhang, Jie Liu, and Yuanchun Shi. 2012. Enhancing collaboration in tabletop board game. In *Proceedings of the 10th asia pacific conference on Computer human interaction* (APCHI '12). ACM, New York, NY, USA, 7-10. DOI: https://doi.org/10.1145/2350046.2350050

[5] Muesluem Atas, Stefan Reiterer, Alexander Felfernig, Thi Ngoc Trang Tran, and Martin Stettinger. 2018. Polarization Effects in Group Decisions. In *Adjunct Publication of the 26th Conference on User Modeling, Adaptation and Personalization* (UMAP '18). ACM, New York, NY, USA, 305-310. DOI: https://doi.org/10.1145/3213586.3225242

Group Contract:

Weekly Meetings:
- Tuesdays after class (3:15pm - 5:30pm)
- We can schedule additional meetings as necessary.

Obligations, Responsibilities (All):
- Time management and deadlines: Address assignments when they come out, complete assignments 24 hours(?) before deadline
- Communication: Please keep in touch over WhatsApp and email, give notifications
- Work Allocation: Each team member will be a 'lead' for a specific aspect,although each team member will still be responsible for keeping up to date and contributing to that section.

Roles (Individual):
        Design Lead: Matthew
        Backend Lead: Jayanth
        Frontend Lead: Parshva
        Writing: All