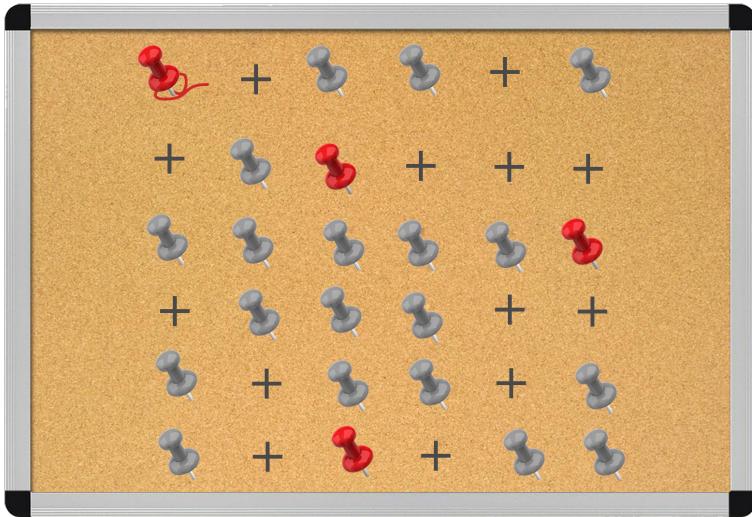


Name of game: Party Strings

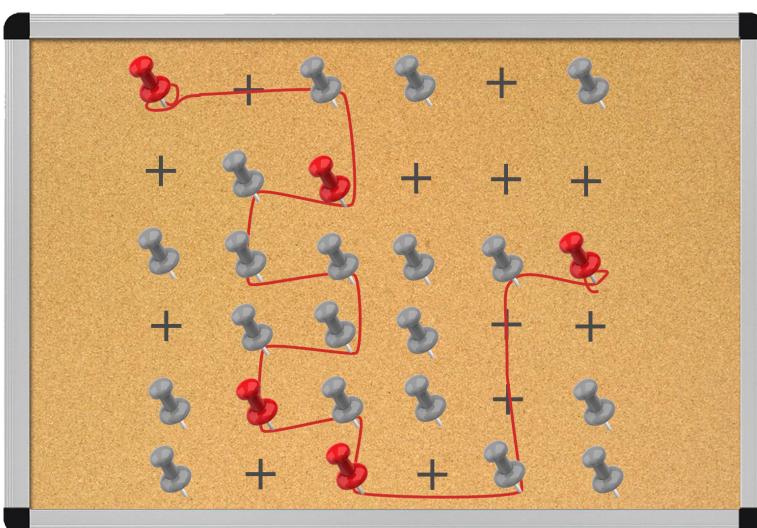
The puzzle game we propose starts with an empty board like this.



The board consists of a cork board like texture with a grid consisting of either a gray pin, a colored pin or no pin at all. The aim of the game is to get the string that is wrapped around the starting coloured pin to wrap around all pins of its color. The gray pins are considered a general pin and are allowed to be used but does not have to be used by all colors of string. The rules are

- No crossing of strings is allowed
- A pin that is already wrapped can not be wrapped again
- If there is no pin the string must go straight through the square
- If there is a pin at a particular square the string must be wrapped around and therefore can not continue to go straight forward i.e. it must be pulled left or right.
- The way to win is to get all the coloured pins of a particular color (not including the general gray pins) connected by the string of that particular color.

Using the simple example above with only 1 color (red) of string to solve the solution would be as shown below.



The first puzzles that would be played by the player would be easier puzzles using smaller boards and only 1 color of string. Later puzzles would start to be played on larger boards

with more colors of pins. If more levels or features are desired later on there is a large potential to add different pins that could behave differently such as particular pins that could allow crossing of strings at that particular pin or barrier “pins” that the string can not pass through which would allow more possibilities in making more challenging puzzles.

This game would be appealing in the form of a phone app as it can have many levels that can be done relatively quickly when the app user has a few minutes to waste when doing things such as waiting for a bus or waiting for takeaway food. Its design is simple with pins on a cork board and strings so it is easy to understand. It does not require significant time investment to get into the game. The user interface is well suited to a mobile app as dragging a string from the starting position along the pins to the final solution is simple and intuitive with a touch interface.

Puzzles will be generated starting from the desired finishing lines and then adding pin and no pin squares so that the desired finishing lines are possible. As when encountering a pin the string must be pulled left or right, and straight if there is no pin, there will be a unique arrangement of pins and no pins along the path of the strings. From the path, a selection of the pins can then be changed from gray(general pin) to its string color to ensure that the string must travel as specified. A pin or no pin is added to the unused squares in any fashion. However, if higher difficulty is desired it would be worth adding different possible ways for the string to continue in a particular path that is not the correct path before it becomes immediately obvious that it is the wrong path. In order to ensure a unique solution a brute force search could be used to check if other solutions exist. If they do exist, removing them is relatively simple as adding a pin to a particular square with no pin or removing a pin with a pin along the path of the undesired path will remove that particular undesired path.

Licensing issues to consider would include possibly using stock image sites for the corkboard and pins. Therefore when using these graphics we must check that the license on them allows for commercial use. While we independently came up with the concept of the game, the game is similar in some ways to the popular phone game flow (image right). However it differs in many core ways while also looking significantly different so we do not need to worry about licensing issues around this.

