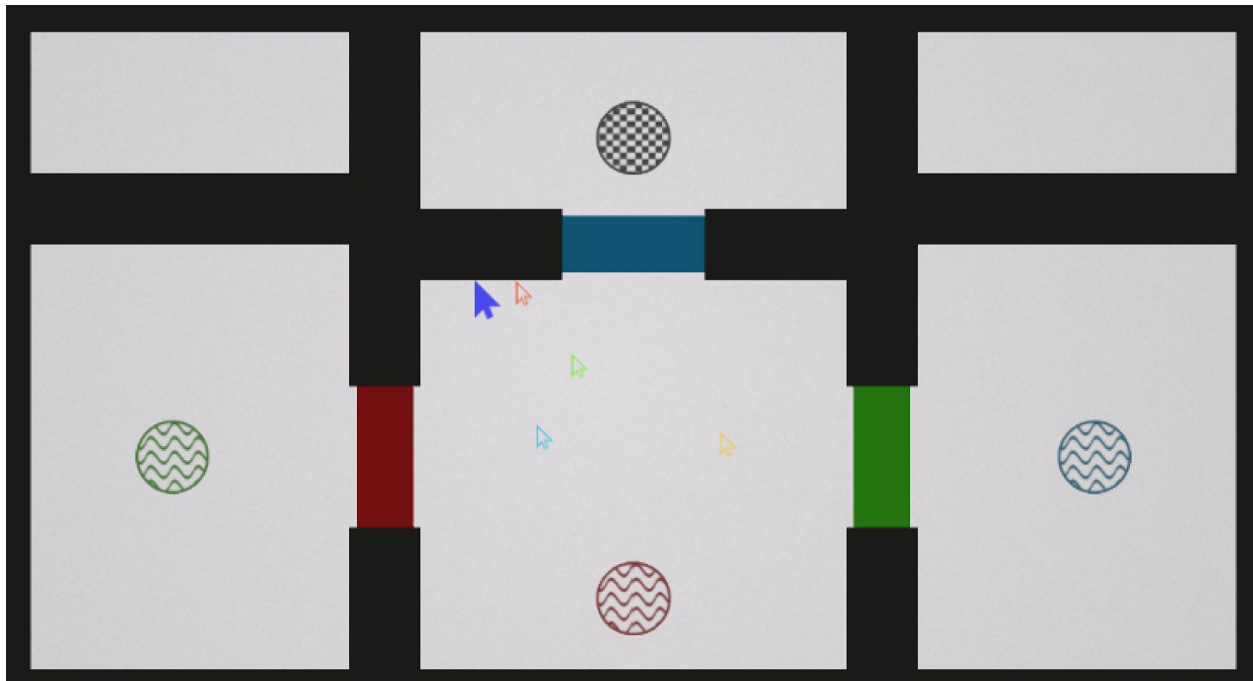# Project 3
# Research and Analysis Paper

Thomas Bartlett (tbartl)

Prototype Game: **ChronoCursor**



(Development Screenshot)

**ChronoCursor:** For this individual prototype, I decided to explore just a single mechanic: time manipulation. In ChronoCursor, the player moves their mouse through puzzles, clicking on buttons to open doors to the exit. The trick is that the player can also reset back to the start of a puzzle and clones of all previous cursors will carry out their movements and keypresses alongside the player. I combine this with switches and other intractable parts of the environment to create a mouse controlled puzzle game.

# Game 1 - Chronotron
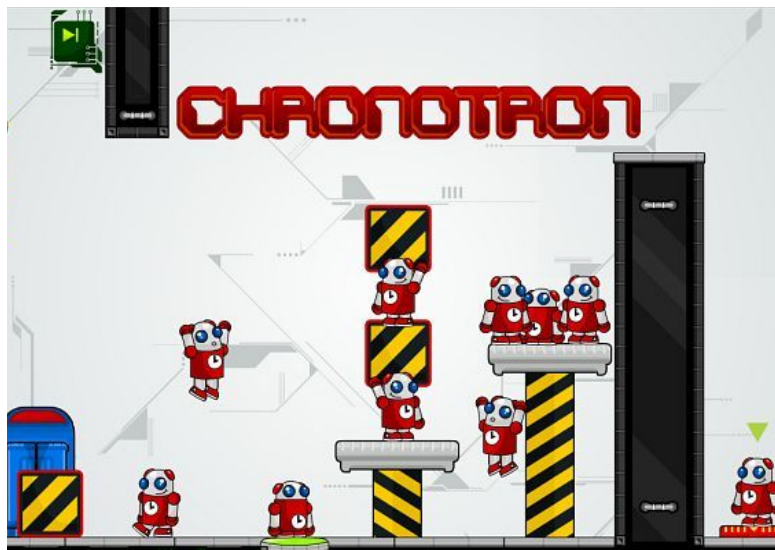


**Overview**

Chronotron is a puzzle platformer developed by small team Scarybug Games. In Chronotron you play as a robot trying to bring back a circuit to your time machine. Returning to your time machine without the circuit will reset the level but with clones of your character carrying out your past movements and actions. The player must cooperate with their past lives in order to change the environment in a way to get the green chip.

**Similarities**

As the names of both Chronotron and ChronoCursor suggest, both games have an **emphasis on the manipulation of time**. While it may seem like both games are recording the positions and actions of each player, they are actually recording the input. What this means is that if the environment changes in the future, the past player object may not function in exactly the same way as before. The complexity introduced in the time changing requires the player to be able to plan ahead as trying to brute force through some levels is nearly impossible without messing up earlier lives. From a development standpoint it also means that a developer can create complex levels with just simple tools like buttons and doors.

While the player object is extremely different for both games, they share one trait in that each player object **can only interact with nearby objects** in the environment. If the player were able to interact with all elements of the level there would be no need to rewind back to an earlier state (unless the challenge came from speedy inputs). To encourage the player to rewind a game like this needs to limit the player in some way. Both Chronotron and ChronoCursor do this by limiting the player's movement in the environment and allowing them to only interact with switches and other interactables that are close to them.

**Differences**

As mentioned before, the biggest difference between the game is that Chronotron is a **platformer rather than cursor controlled.** There are a few benefits in doing this, primarily that the environment itself can be more challenging to move through while cursor controls are second nature to any computer user. It forces the player to think about not only what elements of a level need to change to reach an area, but also how the player will reach it once they've done that. It also allows the developer to introduce objects like boxes with gravity that couldn't exist as neatly in a top down game like ChronoCursor. Despite this many of the puzzle layouts can still be done with the same sort of spirit; both games can block off an area with a switch but that switch could create a platform for Chronotron and open a barrier in ChronoCursor.

Another interesting decision the developers made was the **inclusion of paradoxes**. In Chronotron the player had to return back to their time machine upon completing their actions. If for any reason a future bot changed the environment such that an earlier bot couldn't return, a paradox would occur causing the player to fail the level. This adds a lot of complexity in how the player approaches a level as they won't be able to simply leave their last player at random spots like you can in ChronoCursor. It also means that the player is less likely to brute force a solution as any random action could break a previous bot, even if it didn't serve a useful purpose.

# Game 2 - Cursor * 10
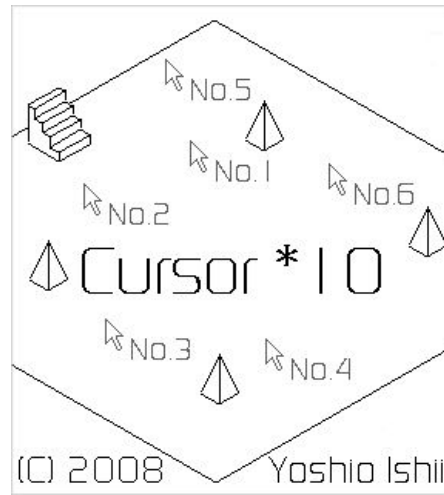


**Overview**

Developed by solo developer Yoshio Ishii, Cursor * 10 is a simple game about getting your cursor to the top of a tower while collecting as many points as possible. If the player fails to reach the top of the tower in the given time the game will restart with the previous cursor's actions still executed. As the name suggests however, the player only has 10 cursors to reach the top.

**Similarities**

ChronoCursor and Cursor * 10 both use the word "Cursor" for a reason, the **player controls only a cursor**. Perhaps the best strength of this comes from having an intuitive control scheme: every player will already be familiar with their character's movement before opening the game. Given the freedom of cursor movement both games also had to come up with some way to restrict the player's movement as the time travelling mechanic would otherwise be unnecessary. Both games do this by separating their environments: ChronoCursor using walls and Cursor * 10 using different floors. This allows the developer to force the player to do something before progressing as this mechanic is generally much easier in something like a puzzle platformer.

In addition to the cursor-like movement the player is also restricted to only a single method of interacting with the environment: **clicking.** Just like movement this will mean the player will already understand the controls but it will also mean that elements of the puzzle will be easy to understand. In another puzzle game a block could be pushed, pulled, lifted, placed on-top of something and more but with this Cursor setup the player will only ever have to understand what will happen when the object is clicked. Because of this the player focuses less on what individual puzzle pieces will do and more on how to change the environment as a whole.

**Differences**

While I may have been speaking like the Cursor * 10 was a puzzle game before, it actually **focuses more on speed than critical thinking**. The player is more focused on rapidly clicking down an obstacle that requires 100 cumulative clicks from each clone, rapidly searching a matrix of boxes for a set of stairs, or rapidly clicking on pylons to get more points. While there are switches, they are often times just used to restrict a player until their next life and grab more points in the meantime. The life of each cursor is also restricted to only 60 seconds encouraging even more quick play. Comparing this to ChronoCursor which encourages the player to wait and think through a puzzle we see that the two games only share the same control scheme and time manipulation mechanic, but the actual feeling of both games is very different.

Another interesting decision by the developer was to use only a **single level**. In ChronoCursor the environment would be presented in its entirety beforehand and the player would only need to worry about the solution to that puzzle before forgetting about it. Cursor * 10's single level approach encourages the player to memorize critical parts of the level and replay the one level to finish the game with a higher score. In ChronoCursor the player is responsible for figuring out a level while in Cursor * 10 the player is responsible for memorizing a level. While this offers some level of replay value, it can very quickly make the game feel stale as the developer never introduces anything new.