MAKING OF

ENGLISH

FRANCISCO LUIS FERNÁNDEZ SORIANO (@RONSONMARIA)
FRANCISCO JORGE MORA GARCÍA (@PACOJMORAGARCIA)
DANIEL NEVADO VILLAR (@DAN7SNOWYMAN)

Index

1. MOTIVATION

They gave me my first AMSTRAD CPC 464 when I was barely 10 years old, on Christmas 1986. The truth is that since I opened it and loaded the famous "Galactic Plague" I was always curious to know how the hell those games were made. That curiosity is what led me to study Computer Engineering. I have no doubt, I dedicate myself to this profession because I had an AMSTRAD when I was 10 years old.

Despite being an Engineer, it wasn't until 2014, the year that I met Fran Gallego, that I found out how the hell I could start to make a game for my childhood system. Thanks to Fran Gallego I started to learn Z80 assembler and to know the different tools that CPCTELERA put at our disposal to tackle this creation.

It has been many years following the CPCRETRODEV closely, and wanting to participate in them, but it has not been until 2020, a disastrous year for many reasons, where I have been able to find time to participate.

2. ORIGIN OF THE IDEA

I have been a listener of the Fase Bonus podcast for more than 8 years. In this podcast they talked about a programming group called 1985 Alternativo. Among his many projects, I was able to access two that I really liked. A remake of OH Mummy! for Mega Drive and a game Pocket Lucho made for a Bit Jam called Tronow, based on the famous Disney movie.

I spoke with Pocket Lucho and told him that I wanted to pay tribute to the TRON world and its game. He told me that there was no problem and gave me written authorization to do a tribute for AMSTRAD, in order to be able to compete in the CPCRETRODEV 2020.

3. GRAPHIC ARTS

The first idea was to use Mode 0 in the development of the game, due to its characteristic color range. This mode is more colorful but decreases the resolution compared to other modes. This was a problem, this Mode did not allow a very large game board, and much less if it put 4 motorcycles. I immediately realized the limitation of AMSTRAD in terms of resolution. That is why I had to consider making use of mode 1, with only 4 colors and thus being able to have more resolution to be able to place the game board and space for 2 motorcycles.

The colors chosen for Mode 1 are:

4 colours palette
PALETTE=0 11 18 6

The Game design was completed in Mode 1, but after several conversations with Dani, we ultimately agreed to make use of Mode 0 in the menu and Mode 1 in the game.
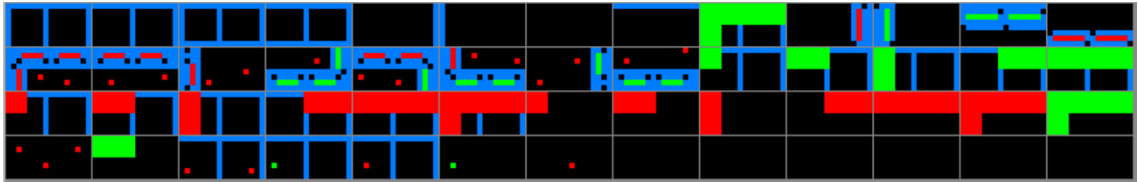

Menú AMSTRON MODO 1   Menú AMSTRON MODO 0

All artwork was done using GIMP, Krita and Aseprite.

To design the arenas, the TILED tool has been used. A set of 16x8 TILES has been made:

All arenas are 10 Tiles in size with a size of 160 x 160, leaving the top for the marker. The map properties are as follows:

Property	Value
▼ Map	
Orientation	Orthogonal
Width	20
Height	20
Tile Width	16
Tile Height	8
Infinite	☐
Tile Side Length (Hex)	0
Stagger Axis	Y
Stagger Index	Odd
Tile Layer Format	CSV
Output Chunk Width	16
Output Chunk Height	16
Tile Render Order	Right Down
Compression Level	0
▶ Background Color	Not set
▼ Custom Properties	
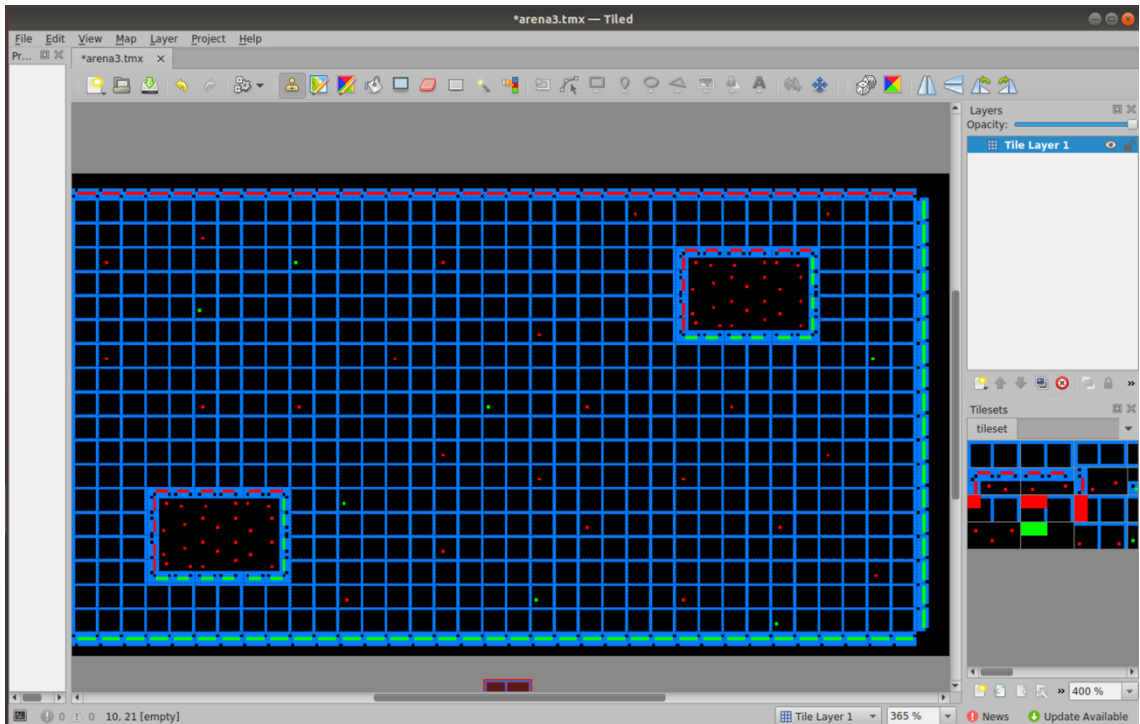
Before using the TILED, many sketches were made in the notebook:
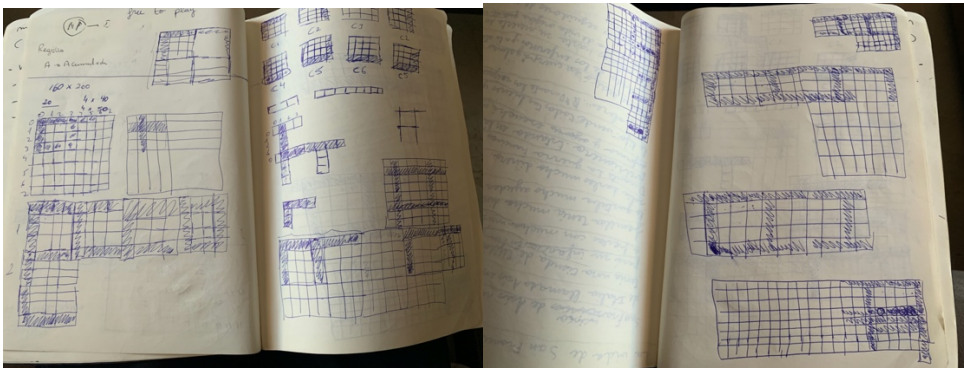
The only animations that the game has are those that occur when the Moto is destroyed:

4. MUSIC

The music has been provided by Francisco Jorge Mora García, better known as Paco Mora. Paco is a composer and author of several soundtracks in the world of Cinema, however he had never done anything for video games, much less for 8-bit computers.

Arkos Tracker has been used for music. For convenience we have chosen to use Arkos Tracker 1 for music since for this version, CPCtelera provides us with an automatic converter in the compilation toolchain itself.

Two songs have been created, one for the menu and one for the game. Both tunes have been introduced together with the interruption system explained in Fran Gallego's videos.

5. PROGRAMMING
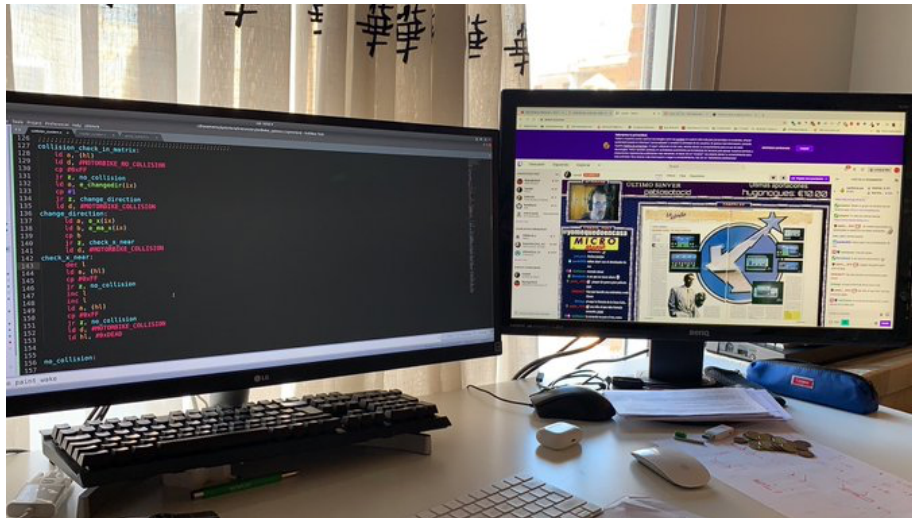
The game is developed entirely in Z80 Assembler. CPCTELERA has been used as a framework, specifically version 1.5 in its Development branch and the ECS (Entity-Component-System) model Explained by Fran Gallego in the videos.

In this section we are going to comment on some special things that we have had to develop:

5.1 FONTS

In Mode 1 we had to hack the CPCTELERA functions to be able to write custom fonts:

The sources used have been the following:

With these modifications, these fonts have been used in development.

5.2 MODO DE PANTALLA PARTIDA

The intention was to divide the screen into two areas, one of them in Mode 0 and the other in Mode 1. A few years ago Fran Gallego explained this technique in a Sunday Retrospective. I leave the video here:

https://www.youtube.com/watch?v=lyr_LsFedMs&ab_channel=ColegioDiocesanoSanto DomingodeOrihuela

We came to implement this system, but it did not work due to synchronization. We lost several weeks trying to break the screen. It is a challenge to continue learning about this topic and testing to achieve synchronization between the two screens.

6. TOOLS

- CPCtelera (Motor de juegos)
- Gimp (Diseño de gráficos)
- Arkos Traker 1 (música)
- Ubuntu 18.10
- Tiled (Diseño de mapas)
- Trello (organización de trabajo)
- Git y Bitbucket (control de versiones)
- Krita
- Aseprite

7. CONCLUSION

After many months working on the design, analysis and implementation of the game that we have submitted to the contest, I must say that we are very happy. We have learned many things and we cannot be happier with the results. Not only for the product delivered, but for all the things we have learned in the process. On the other hand, our sincere congratulations to all those who dedicated themselves to making games for 8-bit systems with their own tools. Now we have many tools and large machines with which to tackle complex developments without so much effort. Still, it is incredible that in only 64 KB we can put graphics, music, logic and AI.

On the other hand, from a personal point of view, I have managed to fulfill a dream, to make a game for the system that I had since I was little. I hope I have been up to the task, regardless of where we are in the contest.