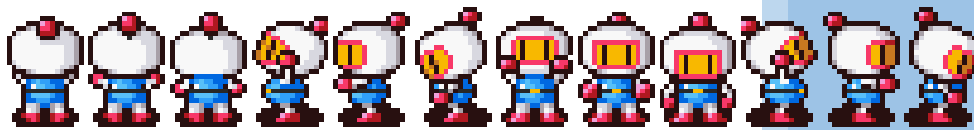2017

Interactive Media Development

Daniel Mateus Pires,

Frank Belinga

Institute of Technology Tallaght

07/03/2017

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CHOICE OF THE GAME AND EVALUATION

A SUCCESSFUL GAME

The game chosen is Bomberman, it is a game where a character can spawn bombs that need to be strategically placed to allow the player to kill enemies and progress in the level.

The game brings simplicity to the strategic genre.

The controls and player interaction are the usual direction controls plus an additional key to place a bomb.

The concept can be deemed simple, but it was and is very successful, the game originally developed in 1983 with Bomberman has seen several releases since then, around 35 with one in 2017 called Super Bomberman R [1]and available on the new Nintendo Switch.

The 34 yrs. old concept, is still a huge success today as the 2017 version was sold out on Amazon with pre-orders only![2]

THE ORIGINAL 8-BIT VERSION

The original Bomberman gameplay that we tried to replicate is described here: "In …[this]… release, the eponymous character, Bomberman, is a robot that must find his way through a maze while avoiding enemies. Doors leading to further maze rooms are found under rocks, which Bomberman must destroy with bombs. There are items that can help improve Bomberman's bombs, such as the Fire ability, which improves the blast range of his bombs. Bomberman will turn human when he escapes and reaches the surface. Each game has 50 levels in total."[3]

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[1] https://en.wikipedia.org/wiki/Super_Bomberman_R
[2] http://www.gonintendo.com/stories/274905-super-bomberman-r-sells-out-on-amazon
[3] https://en.wikipedia.org/wiki/Bomberman_(1983_video_game)

CRITICISM AND IMPROVEMENTS

Our suggestion for improvements will not suggest to change the core concept but rather bringing improvement ideas that stay in line with what a customer would expect when buying a Bomberman game.

PLACING BOMBS

Placing bombs was quite static in the first releases of Bomberman and there was no way to move them across the map once they were first placed.

IMPROVEMENT

One improvement that was made in future releases was to make a player able to "kick" its bombs on a line giving motion to the bombs themselves.

This could be made in Unity3D by:

- Adding a box collider (with trigger turned on) to the bomb
- The bomb spawns under the player position, the player is in the trigger
- The bomb spawns with a rigid body turned off
- When the player leaves the bomb's box trigger, for the first time its rigid body is turned ON[4]
- Colliding again with the bomb applies velocity to it, making it move until other forces stop it

LIFE SYSTEM

Across all releases, when Bomberman is touched by a bomb or a monster he instantly dies. The number of lives available to Bomberman are, then, decremented by 1.

IMPROVEMENT

A health bar could be implemented; it would open possibilities for innovation since a damage system could be added to monsters and bombs.

In Unity3D a slider health bar could follow our character, each hostile object would then inflict an amount of damage to that health bar.[5]

DIFFERENT TYPES OF BOMBS

All the releases (since the first release) had power-ups that would boost either the player or the bombs, but none would change the effects of these bombs

Latest releases brought cooperation with multiplayer levels that could use different type of bombs to support the cooperation aspect

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[4] https://docs.unity3d.com/ScriptReference/Collider.OnTriggerExit.html
[5] https://unity3d.com/learn/tutorials/projects/survival-shooter/player-health

If we assume the life system is changed and now a health bar is in place (see suggestion above), we could implement a new type of bomb that would heal the players touched by the explosion.

This would be interesting as the players with low health would try to heal themselves without healing enemies!

In Unity3D it would mean creating a new prefab of bomb (it would be green to signal a healing property), the damages would be changed to heal instead![6]

ENEMIES

The 1983 release had simple enemies: , these enemies seemed to roam around the 2D maze randomly without having any kind of logic to target the player. Making the enemies quite uninteresting to the gameplay.

The score was linear as each enemy killed had a value of 100, if other types of enemies were to be implemented the score system could be refined.

Enemies have been totally abandonned in modern releases to be replaced by Bomberman Artificial intelligence that have the same capabilities as your character. This fixes the "monster" problems but instead of dropping totally the idea of monster, new original types of monsters could be created to vary the gameplay.

IMPROVEMENT

Enemies of different original types that could be created:

- One that moves slowly, unkillable, is drawn to bombs and eats bombs but does not kill Bomberman (forcing bomberman to move on the map to be able to place bombs successfully)

This monster would require the development of an unkillable state which would be a boolean! And when colliding with a bomb it would destroy the object from the scene[7]. Walking towards bombs would have to be calculated taking the closest bomb as the reference point and calculating a path to reach the bomb.

- One that throws bombs in line in Bomberman's direction, killing Bomberman or fellow monsters in the process

Logic should be implemented so the monster does not kill itself when throwing a bomb, calculating the explosion reach and how far the bomb would go on the map.

MAZE FORMAT

The Maze format did not change since 1983, see screenshot from the new Bomberman, lower.

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[6] https://docs.unity3d.com/Manual/Prefabs.html
[7] http://answers.unity3d.com/questions/176001/destroy-on-collision.html

The Bomberman could break out of the 2D maze to have different environments. We could imagine a playing surface being a 3D box, each side would be similar to a classical 2D level but the players could be walking from one side to another.

In the example of Super Mario Galaxy, the map is a 3D planet and Mario can walk on the entire surface of the planet, it seems hard to imagine that super Mario was originally a 2D scroller!

FIGURE 1, SUPER MARIO GALAXY WALKING AROUND PLANET

NO IMPROVEMENTS ON GRAPHICS OR MUSIC?

The new graphics of the Super Bomberman R game are very modern, the style is loyal to the first releases and shows Japanese influences (Konami produces the game). The music was changed to have much more energy and goes well with the action of multiplayer Bomberman.
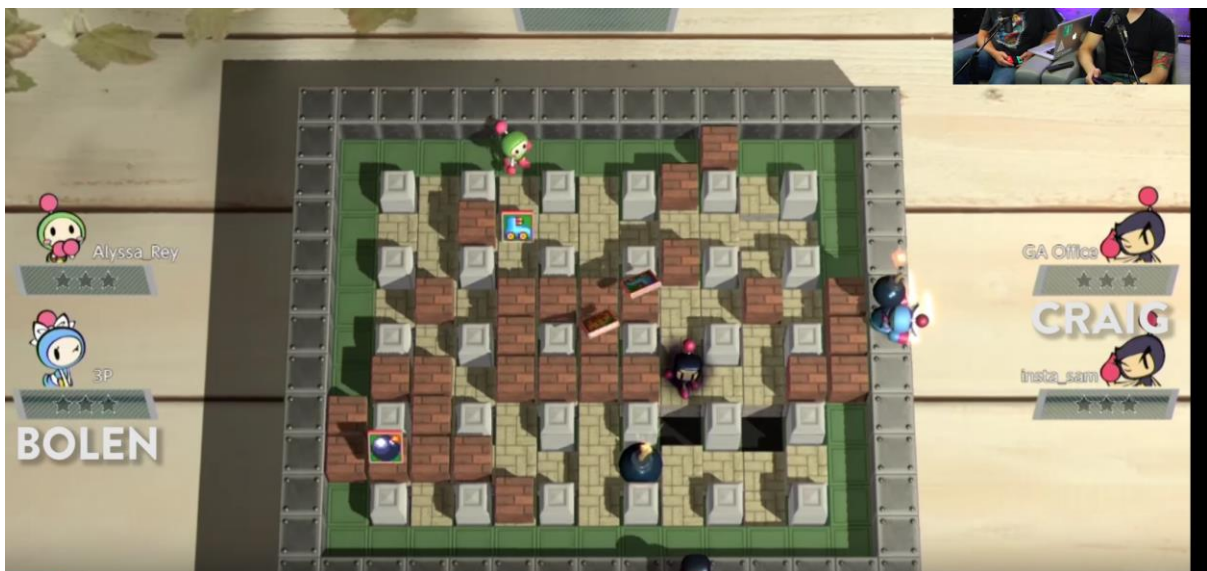

FIGURE 2, SCREENSHOT FROM SUPER BOMBERMAN R -> HTTPS://WWW.YOUTUBE.COM/WATCH?V=FWC_ATDXHYQ

One of the presenters said "Oh wow nice, they kept the retro icons", it illustrates how making a Bomberman game needs to fit expectations, there is not much space given to change drastically the graphics (or the gameplay).

That can be an issue for 8-bit games that became successful but did not break out of the original concept "box", to become a franchise with much more freedom, which super Mario succeeded to do:
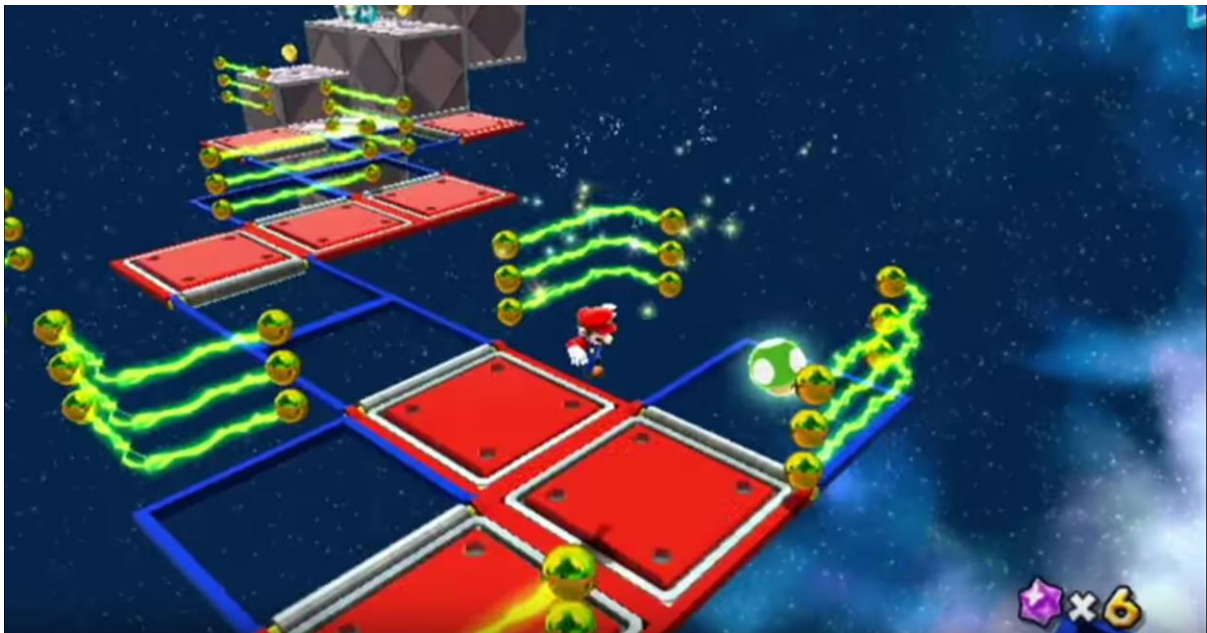

FIGURE 3, SCREENSHOT FROM SUPER MARIO GALAXY 2 -> HTTPS://YOUTU.BE/YA41GN3K1FE

OUR APPROACH TO RECREATE A BOMBERMAN EXPERIENCE

We split the work in two parts, 1st part (Daniel Mateus Pires)

- Creating the level
- Breakable and unbreakable blocks
- An animated character
- A timer
- A life system and death system
- Animated enemies that kill the player

It feels like a Bomberman already!

2nd part (Frank Belinga)

- Adding music
- Spawning bombs
- Bomb logic
- Killing enemies' logic
- Adding exit doors to finish level

Using the Unity3D framework we could collaborate using the Cloud feature in a way very familiar to us (with commits) as Computer Scientists. And even with a limited knowledge in Game design and experience with the Framework we could reproduce a Bomberman experience:

FIGURE 4, BOMBERMAN RUNNING IN UNITY3D