



GAME PROGRAMMING - DESIGN COURSEWORK

VolleyBomb

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Game Description

We created the idea for a game called VolleyBomb which is a simple, single screen, 1 against 1 game where each player can move up, down, left, right or jump. The difference between this game and any other volleyball games was that the ball would be replaced with an active bomb which would count down to 0. The aim of the game was to get a higher score than the other player by the end of the game.

My individual game idea was to use this game as part of a larger game which contained multiple small player versus player games such as VolleyBomb, a tennis style game, air hockey, etc. Each of the mini games would have their own unique turn on the usual style of game such as VolleyBomb is volleyball with a bomb, the air hockey game could have pickups that change the behaviour of the puck to create more interesting gameplay. The players could create a temporary playlist of these games where the winner would be the player that had the most victories at the end of the playlist.

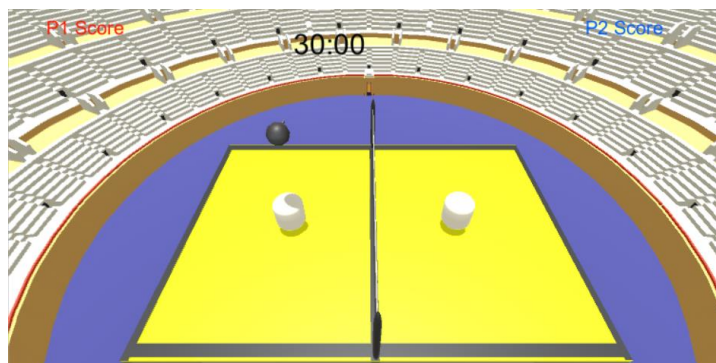


Figure 1: Demo Game

Elements and Dynamics

The game is a competitive player versus player game where the winner is the player that wins the most mini games from a player determined playlist. Using VolleyBomb as an example, a player could win a minigame by reaching the score which the player determines at the start of the game. The players would be placed on either side of the court and earn a point by having the bomb explode on the oppositions side of the court, by having the ball touch the oppositions floor or the opposition knocks the ball out of the court.

The bomb timer goes down naturally through the play of each round and explodes when the timer reaches 0 which ends the round. The addition of the bomb instead of a ball allows for slightly more tactical play between players as you don't need to try and get the ball past the opposition, you could try and time your shots better to allow it to explode on the oppositions side to win.

The gameplay would be very similar to VolleyBomb between each game where the player with the most points still wins and the controls are the same except the ability to jump which would be game specific. To win the entire game, the player must win the most mini games at the end of the playlist. This means a player can still win games while losing the overall game which creates a fun competitive feeling throughout the game.

Paper and Digital Prototypes

During the paper Prototype, we discussed the various rules, how the game play would work and drew out a



Figure 3: Drawing of Game

sketch of what we would have liked the players and map to look like.

The rules discussed during the paper prototype seen in Figure 2, were

unchanged on creation of the demo and set

out the ground rules of what needed to be done through the creation of the digital prototype. As you can see from the

comparison of Figure 1 and Figure 3, we changed the camera view of the game as we decided that the original angle would favour one player. This led to the camera being made more central allowing for an even viewing field.

We created the demo using the Unity software because this came with an assets store where we could get relevant graphics easily, and it supplies us with various useful features like shadows to see where the bomb is easier, collision detection for the objects and allowed the creation of prefabs which makes it easier to spawn/delete the bomb after each point in the game. We also had previous experience with unity making it an excellent choice for the creation of the game demo. From the available languages available to Unity, we chose to program in C# as this was the language we had the most experience in as a group. Another reason to use C# was that there are many tutorials online on how to program in Unity using this language which allowed for a lot of help with programming the player controls, the physics and bounciness of the bomb and for programming the user Interface(UI).

The digital prototype visually came out quite nicely but we had some issues with the movement of the players and finding the bomb as it was landing. We also did not manage to implement the score correctly as we could update the UI values but could not correctly and consistently determine which player the points should be assigned to.

These issues made the game quite difficult and could have been fixed with slightly more testing and fine tuning but unfortunately we ran out of time before being able to do this. This would prove to be very time consuming through the full game as a lot of fine tuning for each individual mini game could take a lot of time to perfect before getting any feedback which could potentially change the way the game is played later. This could lead to a lot of delays in the games creation and could potentially distract the creator from other possible ideas or problems.

Understanding of Feedback and Design Implications

We received some great feedback on the game play that would improve how it played as well as some additions to improve the creativity of the game. Some of the ideas were to project where the ball was heading to make it easier for the players to return, leave a crater in the floor when the bomb explodes which hinders player movement or to allow bounces but decrease the time left in the fuse to allow for some more tactical play.

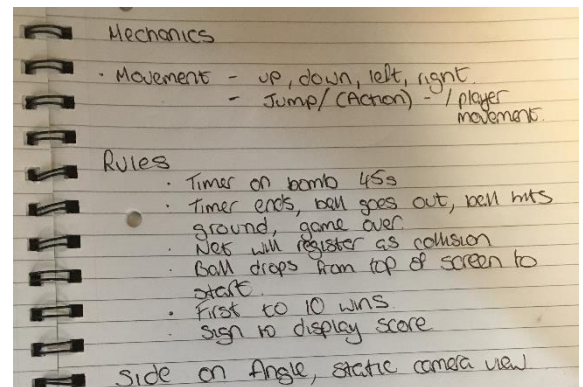


Figure 2: Game Rules

I think if these ideas were implemented it would greatly improve the game/player experience as the projected landing area for the bomb would make it easier for the player to get the bomb while the addition of a crater on explosion would add to the difficulty which overall increases the complexity of the game to make it more interesting. The addition of the bounces which reduce the fuse timer would also allow for more tactical play, such as letting the ball bounce once to increase the likelihood of the bomb detonating on the other side of the court. This would further increase the complexity and result in a more interesting game which would consist of more than just hitting the ball.

Conclusions

During the conceptualisation stage I found it hard to come up with an idea that was new and fun. As my group discussed the various ideas we discovered that a lot of them were too similar to other games or were too unrealistic for creation which led to the conceptualisation stage lasting longer than expected.

On creation of the prototype I found that utilising applications like Unity made the coding quite easy but showed me how much extra time you need to edit the small details for a game to be playable such as the speed of the players or the bounciness/gravity of the bomb. This meant that for the demo, we had completed a lot of the main ideas but had not left enough time to fine tune the game which left some of the gameplay was not as good as we would have wanted making the game harder than intended.

The playtesting of the demo resulted in great feedback for other interesting ideas for the game such as creating craters where the bomb explodes on the ground to hinder the player's movement. Many of these ideas were great as feedback and changed the way we were thinking of the game from just volleyball with a bomb to a much more creative and fun version. This also showed me the importance of playtesting for the full game as there were numerous ideas that improved just a single mini game and could potentially improve each game greatly.

Overall, I found the workshop experience to be quite interesting as it showed me that a lot of the processes can take longer than expected and even with planning you can still experience significant changes to the game.