



KOBRA WARS

Final Design Project

Sadat Islam

ICT216: Table 3
TA: Jin-Tak Park
Schulich School of Engineering
13/12/15

Synopsis

A fast paced thriller for any audience. A multiplayer arcade style game that is extremely addictive and competitive. Play as two Kobras, locked in a battle to corner its opponent and suffocate it to death. Consume the ever rare gold gem which allows your Kobra to grow in length and become the superior Kobra. Whether you are playing for bragging rights or for sheer enjoyment, Kobra Wars will change the dynamic of any get together and amp up the energy in any room!

Proposal for Final Design Project

Client Definition

My target audience will be kids around the age of 7 to young adults around the age of 25 who attend arcades found in movie theaters. My goal is for my game to be sold to movie theaters and that they will have the machines to play on in their arcades. Arcades are social hubs where people around my given age come to enjoy casual games for a fun experience with friends and family. My game will be sold to arcades in movie theaters because I know people come there to play games, hence, the chances of my game being played is higher than other venues.

In order to appeal to this client, my game must be engaging from the start in order for the player to remain interested, since there will be a competition with other games on the floor. Therefore, my game cannot be heavily story based since the player will not be playing my game for hours on end to reach the climax. My game needs to be multiplayer since most movie goers watch movies with friends and family and would generally benefit from spending their money on games they can play together rather than alone. My client is also not a hard core gamer, therefore the game should be challenging, but not overly complex that the majority of people avoid it for its complexity. However, the game should also pose as somewhat as a challenge or else my audience over the age of 17 may avoid the game as being just for kids. My game should be easy enough to understand that younger kids will play it as well as having a skill element that entices an older audience as well.

Since my game will be in an arcade, it needs a lot of flair and sounds in order to entice gamers passing by. Therefore my title screen should be bold, and stand out. My game should have an extensive library of music that draws attention to my booth, as well as a catchy name and title screen.

Game Mechanics

My game is a simple arcade style game with a clear winner at the end of each game. There won't be any levels that the user needs to beat to access the next one, but it will have difficulty levels for different ages and skill groups.

The objective of my game is as follows. The game will be a two-player version of the game snake. Players will start in the center but go in opposite directions. Their avatars will be circles of different colour called Kobras. When the game starts, both circles will start moving automatically towards outside wall. Each user will be able to control the direction each of their Kobra move but they will not be able to make them stop. There will be a gold ball on the screen as well. Each time a Kobra eats a gold ball, it will cause its body to grow. The objective of the game is to survive or outwit your opponent into making them hit a wall or part of a Kobra which will make them lose. Since the game is on a fixed grid size, eventually someone will lose fairly quickly, which is good for an arcade game so that one person doesn't hog the game for long periods of time. The player who does not commit an error is the winner.

I will make settings available on the home screen that allow the players to choose what speed they want their Kobras to move at. Given the time restraints of this project, I was not able to incorporate single player. However, if my client wishes for me to add it, it is an easy fix.

Although the game mechanics are fairly simple, there is strategy involved that can be used by gamers who like to win and earn bragging rights. However, the game is simple for a pick up if the client is just looking for a fun multiplayer game to play with their friend. Clients will be playing this game over and over again whether it's for sheer enjoyment or to get back at their buddy.

Project Management (Proposal Week)

I have already created a skeleton of the game in the week prior to handing in my proposal. I am able to have two clients test my game for the general experience of how the controls work and the simple mechanics of the game. I have yet to integrate a home screen as well as fix minor bugs that my fellow class mates have pointed out. My code is also messy and not in the modular format specified by the constraints. However, given my 2 week period, I believe I will have substantial time to complete my final product.

Before November 19th, I will be busy since my midterm is on that date. After this date I will be able to give spare hours towards this project. The weekend following my midterm, my goal is to finish the home screen with working tabs for controlling the different levels of speed as well as the size dimensions of the grid. I will also need to adjust my code to incorporate the user input given.

The week starting on the 23rd, I will create functions for each of my different sections in order to clean up draw. Whenever I get spare time, I should be able to get this done since it's more tedious than innovative. I will also need to complete my story board for my TA outlining the different screens of my game.

The following weekend I should either catch up on my responsibilities given earlier if I have yet to complete them, or I can allow classmates to beta my game. I will take their feedback on how to fix some bugs that they may have encountered or how I can change certain aspects to better the user experience. If after their critique time permits, I will design a computer generated opponent to play in single player. The time needed for this is unknown. I can also try to incorporate 4 players, although it may be difficult to play 4 players on a single keyboard. I should be done a finished version with no bugs which will be available to submit to my TA. Any additional improvements should be made on a separate file in case I am not able to complete it in time for my submission date.

Project Management Reflection (Post Game Completion)

Looking back at my proposal, I realised that my goals were quite ambitious given the time frame. I was not able to incorporate many features that I had wished to during our proposal week. However, it should be noted that I had these features listed as a bonus if time was left over. Therefore, I can say that I met my deadlines with ease. I was just not able to reach above and beyond what I ranked as the barebones.

I am pleased that I was able to realise what type of finished product I could deliver based upon my time and skill level before I started to code. I had a realistic calendar which I was able to keep throughout the project process. I can say that I was able to stay true to my timeline and that my initial schedule was very realistic. I am glad to know that I was not overshooting nor undershooting what I could do for my project. I was able to complete the most sophisticated product given the schedule I had during these 3 weeks.

Many problems arose during my game especially near the beginning since it was all fairly new to me. However, after my mind got accustomed to the way a computer works and thinks (or not thinks), I found this project fairly easy. I'm not saying that it was simple, however I didn't struggle as much as others nor did I need to reach out for any extra help.

One part that could have been improved in my design process was my project idea. During my coding, I made a lot of spontaneous changes that I believed would make the game better. This is not a bad trait, but I feel that my finished product is completely different from what I initially had planned. Since my planning stage was not concrete, my finished project deviated from my initial proposal. A lot of features have been improved, but some features were also discarded to accommodate the new changes.

BETA TESTING – Story Boarding

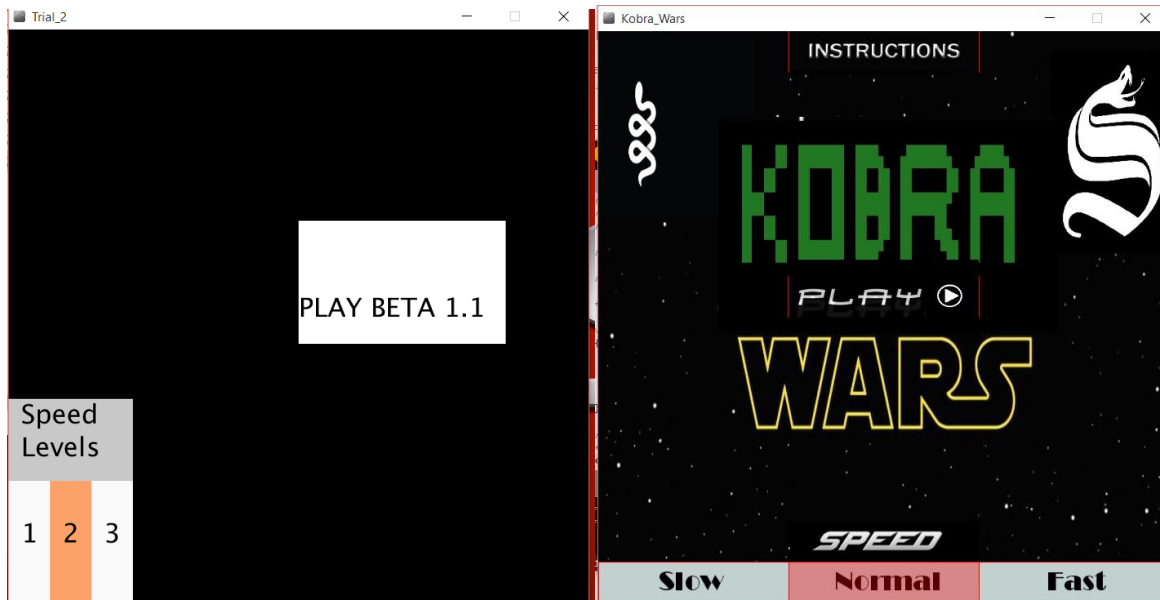
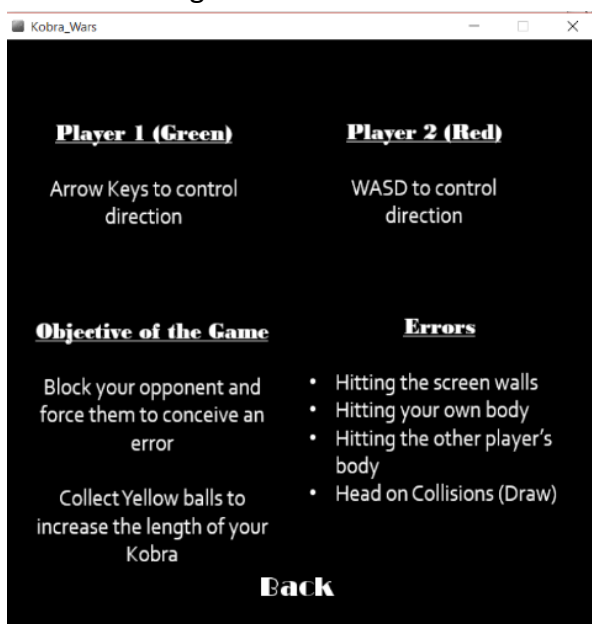


Figure 1: Intro Screen (Left Beta, Right Final)

Explanation: This is the home screen and the first screen the user sees. Since it is an arcade game, the amount of buttons is minimal and straight to the point. The beta of the intro screen is on the left. The final version (right) will look more aesthetically pleasing with a background and colourful fonts. The speed buttons control the difficulty of the game with 3 being the fastest and 1 the slowest. I may incorporate an instructions button if I have time. From this screen, the user can choose the difficulty or play the game. The game's default is level 2 if the user does not choose a speed level. Hitting play with the cursor will lead to my second scene shown in Figure 2.



What's New in the Finished Product?

The home screen is made more aesthetically pleasing. The buttons light up red when hovered over. There is also an instructions page which displays the instructions (Figure1.1). On the instructions page, there is a back button which returns the user back to Figure 1.

← Figure 1.1: Instructions Screen

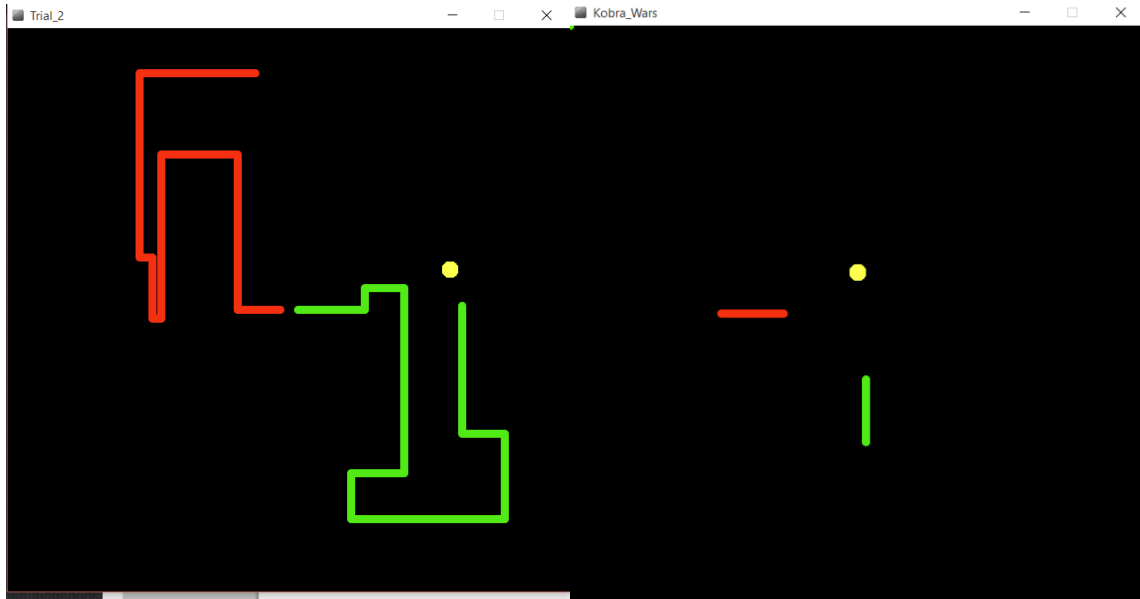


Figure 2: Game screen (Left Beta, Right Final)

Explanation: This is where the user has complete control of the game. When the player hit play from Figure 1, this screen appears. The two dots, red and green, start initially at the center. The red dot starts to go left while the green one goes right. The red Kobra is controlled by 'WASD' while the green Kobra is controlled using the arrow keys. These controls allow the users to decide which way their Kobras will maneuver. The objective of the game is force the other player into conducting an error which makes them either hit the end walls or part of either Kobra. The yellow circle is a bonus. Currently, if either Kobra manages to hit it, they gain a bonus 2 points. If either Kobra touches the bonus, it will relocate to another random position on the game screen. However, I am planning to change the bonus into being random power-ups which enhance or hinders a player. For example, it may increase the speed of the opponent which will make it harder for them to maintain control. When either Kobra touches a part of either Kobra or the wall, Figure 3 will occur.

What's New in the Finished Product?

The point system has been removed as well as the tails staying stagnant in their initial positions. Now the tails follow the head and only grow if the yellow dot is reached. The objective of the game is still the same.

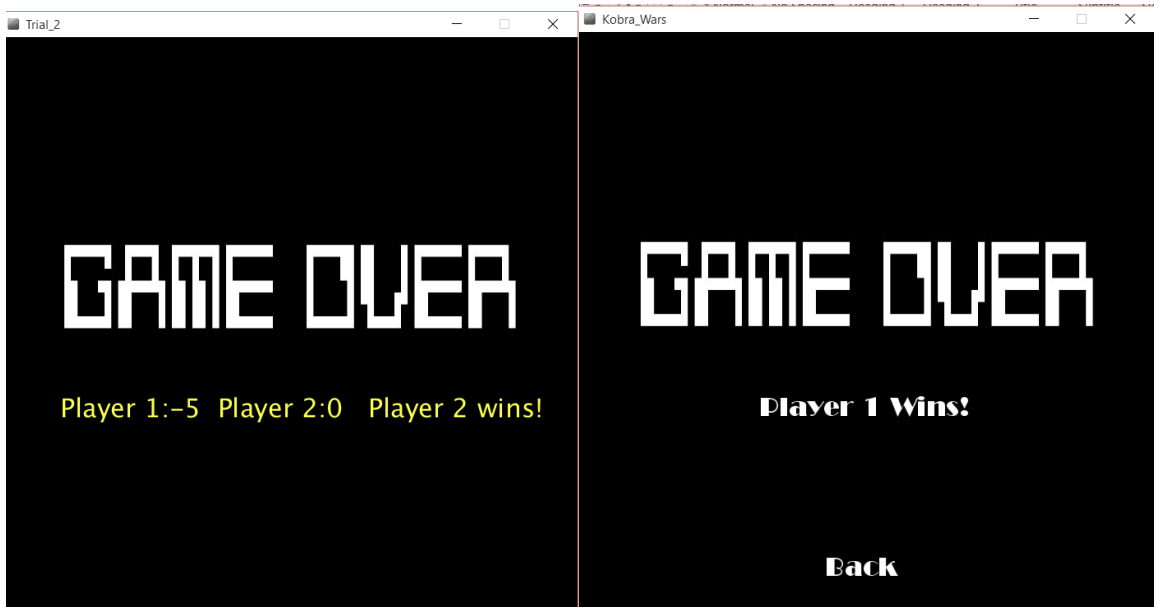


Figure 3: Game-Over Screen (Left Beta, Right Final)

Explanation: After a player conducts an error, this screen will show up on the console. It shows that the game has come to an end. It also prints the scores of each player and the outcome of the match. I have a scoring system based on how the game ends (ex. If player 1 hits player 2, player 1 loses 5 points while player 2 gains 2). However, I want to scrap that system and just have the player who doesn't die first be the winner. Currently the bonus ball adds 2 points the receiver, but I want to just make it a random power up ball. Therefore the scoring becomes obsolete and it's more of a game of survival. This skill of this game is to be the most efficient in using your space and capturing as much territory as possible. It essentially teaches sustainable practices such as making sure that enough of the board is left in order to outlast your opponent. You must also be efficient in how you move your Kobra in order to not waste precious resources, in this case the game board space.

What's New in the Finished Product?

The game is simpler without the scoring method. The winner is simply determined by whoever does not commit an error first. A back button has been incorporated which leads the user back to the main screen (Figure 1).

Sustainability

In order to make my game sustainable, I will take a few measures to help it cause as little harm as necessary to future generations.

In order to protect nature, I will make sure that arcade machines that run my games have suitable memory and hardware needed to run my game in its present form, as well as if I needed to post updates and patches which would require more powerful hardware. If my machines come equipped with slightly powerful hardware, this saves the environment by not creating e-waste in case I need more power for my updates. The client will not have to dispose of my current machine and replace it with a more powerful one in order to continue to play my game. My updates will also take into account the amount of power my initial arcade machines possess. I will try to limit my power usages to what can be handled by my machines to maximize its power usage as well as to limit the need for replacing hardware.

A drawback that my game may cause is that it will remove profit for other companies in a movie theater. In a competitive environment, if my game is successful, it may cause another game machine to go out of business. The smaller the venue, the more impact my game will have on other companies. Game companies who have their merchandise in a small local movie theater probably does not have the resources to sell their games on a massive scale like multinational game companies or across various platforms. In order to limit the damage my game could create, I will make sure that if my company is successful enough, I will move my business to a greater scale to remove my completion presence from small local communities and their economies.

Video games are a factor in why younger kids and their generations below them are becoming less active and more obese. Technology makes our lives easier, hence we tend to become lazier. As a company, this trait that is evolving is good for making profit, but isn't sustainable in the future since it is making a generation that doesn't have the imagination of the current generation who created these games. Therefore, games should have a deal of creativity involved and not just a linear storyline. Games should incorporate puzzles that engage the users and make them think rather than to just follow instructions. A strength of my game is that it has simple user instructions, but the various techniques they can use to outwit there opponent must be thought of on their own. This helps the kids who play my games to still think and to make decisions.

Video games can also lead to addictions. A player may be so fed up that they can't win a certain game that they may spend countless hours and dollars trying to win a game. Most games in arcade like venues are flashy in order to get the attention of the people there. These games are made to be fun as well as addicting. While addiction is good for making a profit, it has a negative impact on the user. Although arcades don't suffer as much from this problem as casinos do, there is still some potential for users to become addicted to a video game. A way that my game can prevent a user from abusing my machine is to limit the amount of retries a

player can hit before their game session ends. Since my game will be used in a movie theater, there should be security that stops a user from hogging the machine if other players are waiting for a turn.

References

- [1] D13yacurqjgara.cloudfront.net, "Google Images", 2015. [Online]. Available: https://d13yacurqjgara.cloudfront.net/users/310751/screenshots/1425819/dribble-cobra_1x.jpg. [Accessed: 13- Nov- 2015].
- [2] Image.freepik.com, "Google Images", 2015. [Online]. Available: https://image.freepik.com/free-vector/snake-silhouette_91-5788.jpg. [Accessed: 13- Nov- 2015].
- [3] I.ytimg.com, "Google Images", 2015. [Online]. Available: <https://i.ytimg.com/vi/vJaAy3jmEx8/maxresdefault.jpg>. [Accessed: 13- Nov- 2015].
- [4] Public.blu.livestore.com, "Google Images", 2015. [Online]. Available: http://public.blu.livestore.com/y1pAQVNpzyZY8fcYsfu7rf1XIBITi6zjNOBTaiXT3bTZTfwUq9Tid71n6V8-pQYk_WSpby-4UVTuo6-xTheX6Br6w/logorev01.png?psid=1. [Accessed: 13- Nov- 2015].
- [5] Rocketchainsaw.com.au, "Google Images", 2015. [Online]. Available: <http://www.rocketchainsaw.com.au/wp-content/uploads/2012/07/Nfs-logo.jpg>. [Accessed: 13- Nov- 2015].
- [6] Upload.wikimedia.org, "Google Images", 2015. [Online]. Available: https://upload.wikimedia.org/wikipedia/commons/thumb/6/6c/Star_Wars_Logo.svg/2000px-Star_Wars_Logo.svg.png. [Accessed: 13- Nov- 2015].
- [7] YouTube, "[Drumstep] - Tristam & Braken - Flight [Monstercat Release]", 2015. [Online]. Available: <https://www.youtube.com/watch?v=OVMuwa-HRCQ>. [Accessed: 13- Nov- 2015].
- [8] YouTube, "Star Wars Imperial March (Dubstep/Brostep Remix)", 2015. [Online]. Available: <https://www.youtube.com/watch?v=1h1VD7ui8Ng>. [Accessed: 13- Nov- 2015].
- [9] YouTube, "Super Mario Bros. - Game Over Sound Effect", 2015. [Online]. Available: <https://www.youtube.com/watch?v=Furs535ly94>. [Accessed: 13- Nov- 2015].