Space Scavenger

By Justin Alcantara and Jonathan Wang

	Beta Version	Final Version
.aia Files (Source Code)	CSE_Wang_Alcantara_SpaceInvader/GetTheGold_Beta.aia	CSE_Wang_Alcantara_Space_Scavengers/Get_the_Gold_Final.aia
.apk (Packaged App)	CSE_Wang_Alcantara_Space_Invader/Get_the_Gold_Beta.apk	CSE_SpaceScavengers_Wang_Alcantara.apk

Table of Contents

Brainstorming

Green= ideas we are considering on adding into app
Yellow= ideas that could be improved on

User Interface Ideas	Gameplay Ideas
• Level Selection • Start button • Lives HUD at bottom of screen • Breaks between level advancement • Pause button/resume button • Customization to change color of ship, background, laser, enemies • Instruction menu • Options to change controls and how they work	• Add in power-ups that the player collects in space invaders • Add infinite amount of coins for the player to collect to advance to the next level • infinite amount of enemies • Ability for player to move up and down as well as left and right • Enemies that try to shoot player as they try to collect gold • Gold coins increase high score as they are collected by player • Time limit to collect certain amount of gold before game over • Kitten theme • Pirate theme • Touching enemies cause player to die • A certain number of Lives • Projectiles shot by enemy that travel down to the player • Different firing modes for player • Elements from Galaga like enemies that capture the user, and end the game

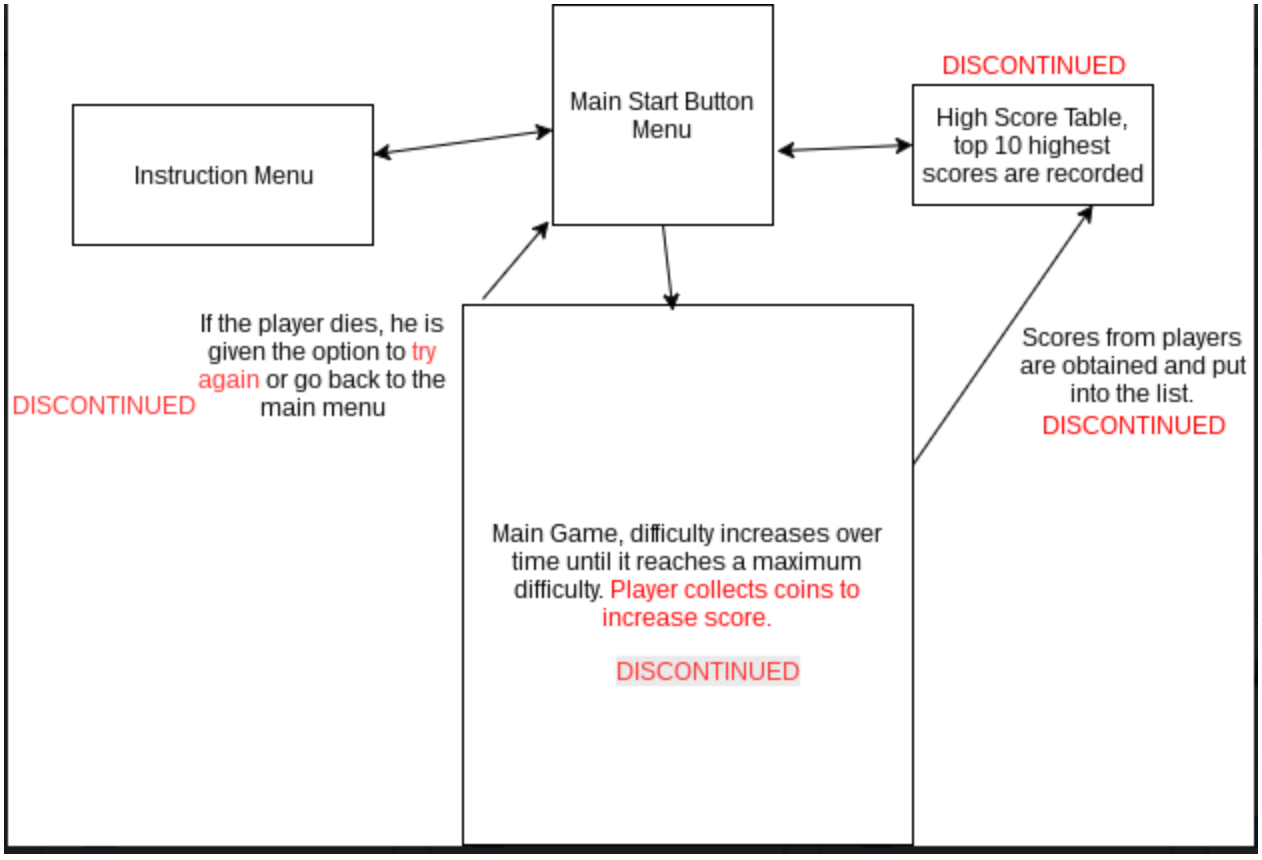
Blue= Idea that we have agreed to work on

Idea #1	Idea #2
- Space Invaders-esque screen/gameplay, with shields and enemies in an array, etc.	- Vertical scrolling game with player moving left and right

- Gold falls from the top of the screen, must collect a certain amount before level time runs out. - You can shoot shields or the opponents, who are shooting at you.	- Player is collecting gold coins along the way that disappears - enemies shoot down at player who has to dodge the projectiles - power ups that make the player shoot faster for a certain amount of time. - Live count -

Red= Discontinued Features

Space Scavenger Flowchart



Group Feedback

Features Liked	Suggestions/ Criticism
- Based around gaining a better high score	- Better background

-	- Better controls, control settings (joystick, arrows, etc)
	- Faster bullet speed
	-

Tier 1:

- Movement controls
- Firing Mechanism
- Bullet Behavior
- Meteor Behavior
- Clock1, Clock2, Clock3
- Instructions Menu

Tier 2:

- Main Menu
- Custom Sprites for Spaceships, Meteors, Coins
- Coin Behavior

Tier 3:

- High Score Menu
- High Score Table
- Live Count
- Score Display in HUD

Beta Gallery Walk Feedback

Instructions: Press the red button to fire. Tilt the screen to move the spaceship left and right. Red circles are supposed to be enemies.	
Pro: Features Liked	Con: Aspects that were confusing, buggy, or etc.
-the game idea is good -I like the use of the sensors to move the spaceship	-Tell the user the objective -Try adding a score -The red balls are too fast

-after user finds out how to play game, then it is fun for them -red button feature at bottom of page is nice I like the way the ship moves with the gyro. -Like how you can tilt screen to move spaceship -like colors -Unique tilt feature. -Tilt controls are good - The layout is understandable	-starting of the game is confusing for user -blue bar looks like ad; make directions more clear for user -The game needs a score. Balls are going too fast -Do the enemies disappear when hit? The enemies are moving a little too fast -add high score at end -make easy in beginning and the harder, level progression (don't just start with a hard game) -Tilt feature is highly inconvenient and annoying combined with awkwardly placed fire button. -No objective in the game. -When tablet screen is horizontal spaceship is not visible. -The enemies are moving very fast

Final Gallery Walk Feedback

Instructions: Note- there aren't any coins, despite mention on instructions	
Pro: Features Liked	Con: Aspects that were confusing, buggy, or etc.
- Fire button works smoothly - Nice starting page and instructions - The main features work well together - I like how the instructions look hand written - The progression in the game is very good. - Tilt controls are an interesting way to approach the game layout. - The cover page and title are very creative and look very nice. - Nice color scheme and attractive GUI - The artwork and the hand-drawn parts of the program are really cool	- Try to add a "lives" feature so that the user gets more time to play. - Try to control the speed of the crown/spaceship. - Faster firing would be more helpful - Have a score feature - Fix the lag - You have to press fire 2 times to order to shoot the circles. - The game needs to be more responsive - If you keep at the left, the balls will never hit you. - Very difficult to play - Are the balls supposed to explode or disappear when you hit them? It seems as if they are simply pushed bac - No green balls appeared - What is the purpose of green balls if the score isn't even displayed throughout the game? - It'd be better if the balls and the spaceship moved more smoothly

Jonathan's Reflection

Our app's development process was primarily based on the tier list. We wanted to complete everything on Tier 1 before we moved to Tier 2, and then Tier 3. The movement mechanism took longer than expected because we came across several issues that made the app feel inconvenient. The button controls teleported our spaceship sprite and made it disappear, and the dragging controls wouldn't work because the tablets we had did not have good multi touch sensors. We settled on tilting controls because it did not interfere with the shooting controls. Some other issues that we faced were setting up the behavior of the meteors, and creating the behavior of the bullet when the fire button was clicked. These projects caused us to spend extra time on them, leading us to not being able to work on the coin sprites and score sprites. However, the meteors serve as the Get the Gold part of the app as the player "collects" the meteors by shooting them and surviving. One of the aspects of our app that was complained about was about how laggy the meteors and bullets were. The different blocks of code on screen2 is the reason on why it's so laggy because there is a large amount of code being run through simultaneously when screen2 is initiated. Another complaint was about how the fire rate of the bullet was too slow and the player should be able to shoot more bullets. When designing the shooting mechanism, we purposefully intended to make the fire rate slow so the player wouldn't be able to rely too much on shooting the meteors and surviving. We wanted the player to use the tilting controls to dodge meteors as well as they wait for the bullet to reload. I think I could have improved on time management because for a number of days, I did not work on the project at home. This limited the amount of work that was accomplished on the project and made it a slow process.

Justin's Reflection

Our process started off pretty well, since we had a pretty strong focus as to what we were going to do for our project, though as we got into more details there were more conflicts, and the time restraint could've been taken into consideration a bit better. One thing I did like about the development process was the creation of tiers, since that really set our priorities straight, though I'll admit I didn't put my input into the tiers much, and I disagreed with the placement of some of the tiers while we were developing the app. Next time I'll make sure to have an equal say in tiers, though it was my fault for not speaking up when they were created. I think we did alright in regards to following and more or less efficiently using the development process, though the actual planning should have been done a bit better since we ran into a lot of problems, and the time restraint made some of our priorities slightly offset, though not by much; we did okay in the end for the most part.

The comments we got from the walks mostly got confused because of the time restraint; we didn't get what we tried to get done and due to lack of testing, the game didn't work exactly as intended. For example, the meteors started acting up in the beta walk which left all the players confused. In the main gallery walk, I left the instructions not updated, and it explained the purpose of coins, when coins were actually removed in the final version. Overall, I just think I could've planned better, and tested our stuff before sharing it.

Daily Log

Date	In-Class	Justin At Home	Jonathan At Home	Partner Reflection
9/19	**We brainstormed and came up with possible ideas to add to our app.**	**I highlighted our best ideas from our brainstorm list**	**I continued to brainstorm ideas and find new ways to enhance and improve our app idea.**	**Jonathan: Justin helped brainstorm several ideas on how we can improve our app idea. Justin: Jonathan contributed a good amount of ideas.**
9/20	**We started to work on the tutorials and flowchart. Justin worked on completing the Get the Gold tutorial and Jonathan formed a basic flowchart illustrating all of the menus and user interface features that we want to create.**	**N/A**	**N/A**	**Jonathan: We worked well by working on different things. I worked on the flowchart while Justin began the Get the Gold tutorial. Justin: Jonathan organized the notebook and created the flowchart faster than I could've**
9/21	**We worked on the tutorials for Space Invaders and Get the Gold to learn the basic elements that both game incorporate.**	**N/A**	**I finished copying from the Space Invaders tutorial to create a basic version of a working Space Invaders game.**	**Jonathan: Justin was on task as he worked to finish the Get the Gold tutorial. Justin: J**
9/22	**We gave and received group feedback as other partner groups looked at our app project and gave us suggestions on how to add more to our ideas. We also walked around and observed other group projects and gave them friendly criticism and suggestions.**	**N/A**	**N/A**	**Jonathan: Justin gave helpful suggestions and feedback to other groups as we looked at their app ideas. Justin: We had some conflict in ideas on how the game would progress/function but we worked it**

				out after sharing
9/23	**N/A**	**Spaceship sprite created**	**N/A**	**N/A**
9/24	**N/A**	**Spaceship, coin, enemy, and bullet sprites created in Paint Tool Sai.**	**I started the layout for version1 of our Space Invaders/Get the Gold app. I created a custom sprite for the Spaceship sprite in our app, as well as creating code that moves the spaceship left and right when pressed on, which will be the controls for the game.**	**N/A**
9/25	**Tried to make the left and right buttons work in order to move the spaceship left and right. Was unsuccessful in preventing the spaceship sprite from disappearing after clicking the buttons.**	**N/A**	**Tried to fix the left and right button movement controls, but was unsuccessful.**	**Jonathan: Justin helped create custom sprites for the app and tried to find ways to fix the left and right buttons. Justin: We both tried our hardest to get the movement to work properly but we couldn't, we might resort to another method of moving the ship**
9/26	**Switched the sprite of the spaceship which fixed our issue with the disappearing sprite, could not find a way to repeat action of moving the sprite as the buttons are held down,**	**I messed with the sprites and code but couldn't find a way to make it work the way we wanted to.**	**I attempted to create new code that would repeat the action of moving the sprite with the buttons when holding or clicking the buttons, but was unsuccessful.**	**Jonathan: Justin tried to fix the issue with the disappearing sprite bug and realized that it was the current sprite we had set it to. Justin: We tried to fix movement**

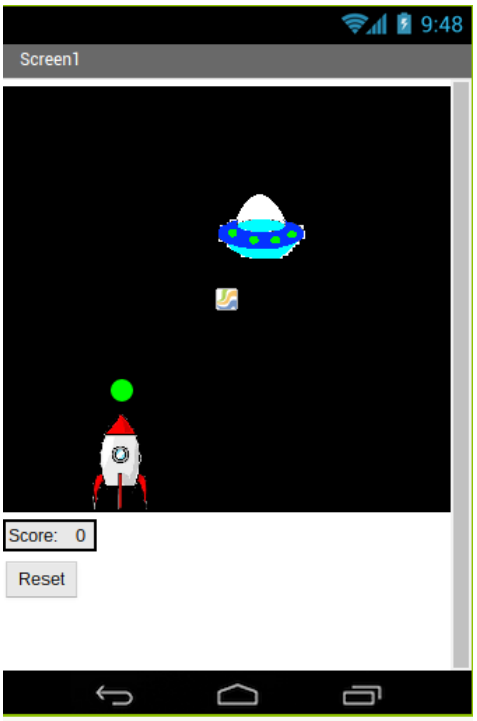
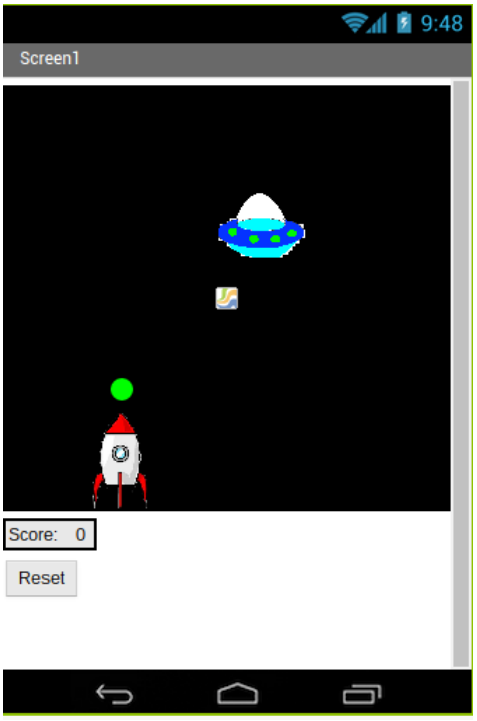
				again and failed. Both of us made an effort to fix it both at home and at school.
9/27	**We changed the controls to use the touchscreen to drag the sprite left and right. However, we realized that the touchscreen on the tablets given to us in class were not very good in detecting multitouch. We decided to change the controls so that the user would have to tilt the tablet in order to move the sprite.**	**Fixed the tilting mechanic for player movement. Also tried to add the meteors, which are supposed to drop from the top of the screen.**	**I tried to change the ball sprites and make multiple copies of them so that they would fire one after another from the spaceship sprite but the tests were unsuccessful.**	**Jonathan: Justin helped create the code for the touchscreen controls, but the tablet did not detect multiple touches when firing while dragging. Justin:**
9/28	**We made the ball sprites to be made up of only 1 ball sprite. We increased the speed of the sprite and now the user can fire multiple balls from the spaceship faster than before. We also experimented with the orientation sensor of the tablets in order to make the spaceship move upon tilt but we were unsuccessful.**	**N/A**	**With code given to us from Mr. Brown, I was able to make it so that the spaceship sprite's x position changes depending on whether the tablet is tilted left or tilted right.**	**Jonathan: Justin attempted to fix the orientation sensor code but we were using the wrong sensor. Justin:**
9/29	**We received feedback from other groups about our beta version for our app. We also walked around the classroom and gave constructive feedback to other groups by testing out their beta versions of apps.**	**N/A**	**N/A**	**Jonathan: Justin gave helpful feedback to other groups and he also gave criticism to other projects that could use the improvements. Justin: Jonathan contributed a good amount in suggesting to the other groups, and helped me describe some**

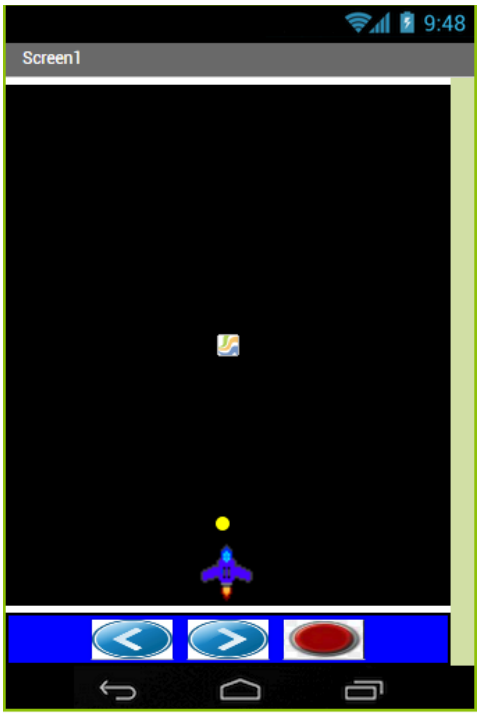
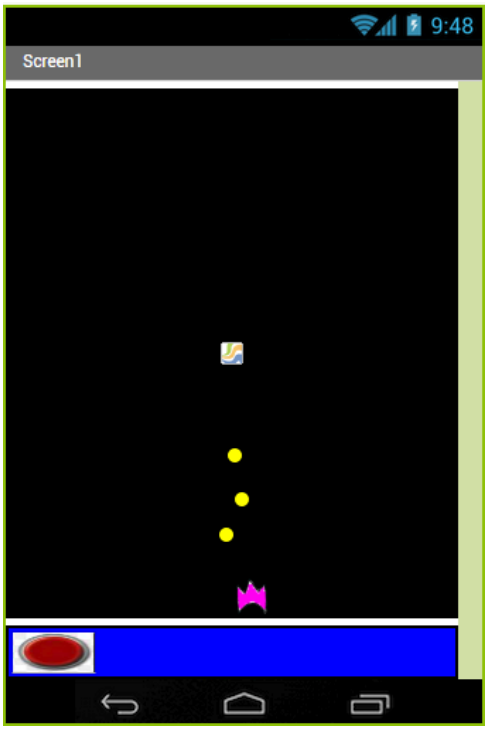
				aspects of the game.
9/30	**N/A**	**I got rid of extra code and reuploaded Version 5, where the main menu was on Screen1 rather than Screen2 (making it default). I also got rid of the meteor code since it wasn't working.**	**N/A**	**N/A**
10/1	**N/A**	**Fixed Version 5, since bullets and movement weren't working properly; reuploaded as Version 5.5. In this version I also fixed the 'Go!' button in the main menu.**	**N/A**	**N/A**
10/2	**We worked on the code for the meteor by creating 2 clocks in order to keep track of the time as the game progresses and to obtain random time integers when the meteors spawn back to the top of the screen. We also set the speed and heading of the meteors.**	**Fixed Version 8 code, though I still ran into a few errors I couldn't fix (meteors spawning in unspecified areas). I fixed the layout of buttons to make it more user friendly, and created the instructions page and the title screen.**	**Created procedure blocks which dictate the behavior of meteors like speed, heading. I placed these procedures in control blocks like when Screen2 is initiated, the meteors must be turned invisible through a procedure. I also created a variable to set the rate of the time interval for clock 2.**	**Jonathan: Justin helped explain to me how we needed different clocks to randomize the position and timing of the meteors as well as increase the difficult. He started writing the code blocks for the clocks. Justin: Jonathan was cooperative with the changes we had to make, since we had to negotiate a lot about how to fix the problem and what mechanics**

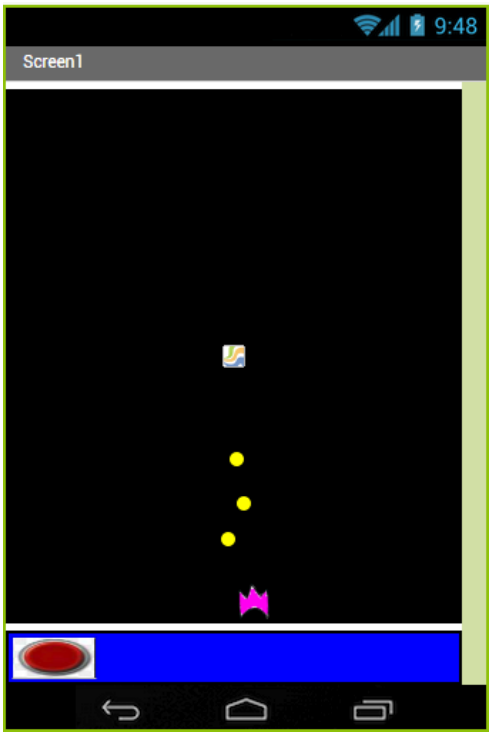
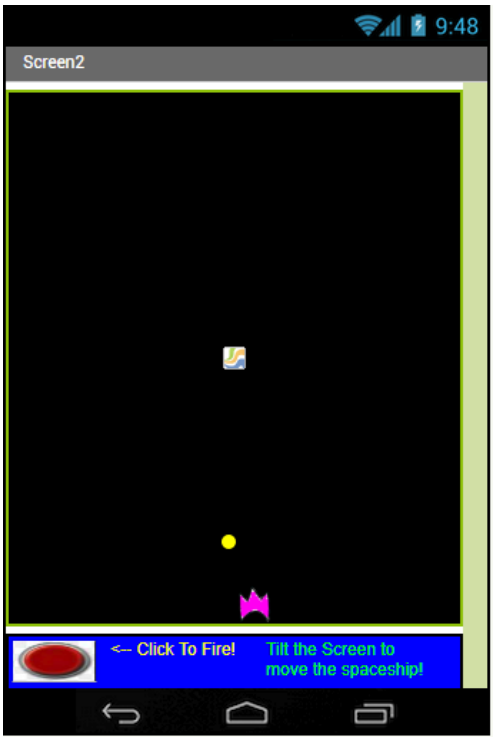
				to potentially change
10/3	**We set up the clocks code and started on increasing the difficulty for the meteor's speeds as time passed. We also improved the spacing of the screen for the sections that each meteor is in for the tablet screen, so that they would not be in sections that are too small.**	**I added difficulty progression by adding a counter by seconds, and making speed increase at certain second marks. I also added coins and gave them the same code as the meteors, and giving points when they collide with the player.**	**I edited and simplified the code for the clocks so we could get rid of any unnecessary code and variables. I also found certain issues where the Clock1 TimeInterval rate was set to .01 seconds instead of 1 second, which affects the randomization of the timing of the meteors.**	**Jonathan: Justin created the code for the meteor's speed over time so the difficulty increased. He also suggested what the spacings should be for each section. He also added in coin sprites and made some code for them. Justin: Jonathan cleaned up the workspace since I didn't, and helped fix the efficiency of the code in general.**
10/4	**We created code where the screen would change to the gameover screen once the meteors touched the spaceship once. We also fixed a bug that would change the screen even if it wasn't touching the spaceship directly. We fixed the issue by decreasing the hitbox of the spaceship so that the edges matched with its own hitbox. We decided to get rid of the coin sprites and their code because they interfered with the meteors spawn locations when the coins and meteors collided during spawning phase.**	**N/A (out of house)**	**I got rid of the "other" variable must equal the Spaceship to change the screen in each of the Meteor code. I also tried to create text labels in the gameover screen where it would display the variable value for the score variable from Screen2 but I found out that screens do not transfer data among themselves, so I could not display the score in gameover. I fixed the position of the GAME OVER! Label because it**	**Jonathan: Justin helped edit the hitbox of the spaceship by editing the sprite in paint.net. With the help of Mr. Brown, Justin explained what was causing the bug to me which allowed me to understand what must be done. Justin: Jonathan took care of everything and wrapped the project up before the gallery walk since I couldn't be home.**

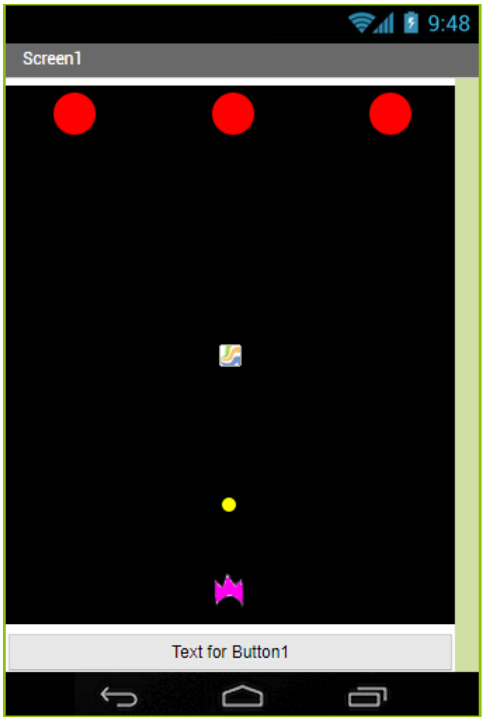
			was clipping with the You Died! Label. I fixed it by removing the You Died Label and adjusting the position of the Button1 on gameover.	
10/5	**Fixed a small error where the game would randomly end. We went around the classroom giving feedback to the final versions of other groups apps.**	**N/A**	**N/A**	**Jonathan: Justin gave a lot of constructive feedback to other groups and found some bugs in their apps. Justin: Jonathan helped fix the error in the first few minutes in class.**

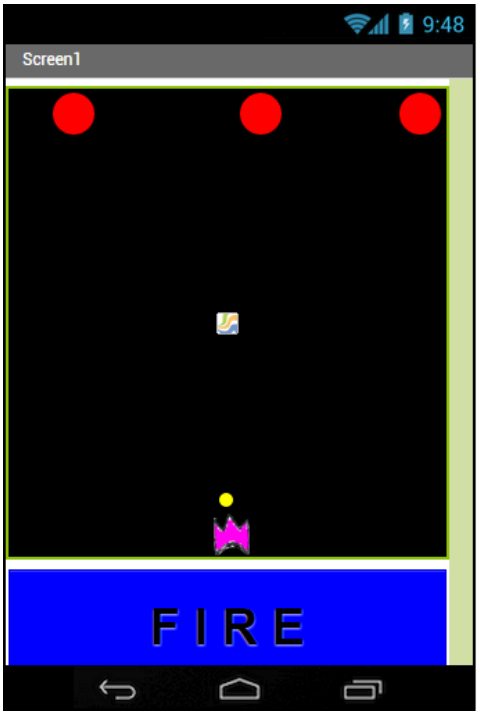
9/19	**N/A**
9/20	

9/21	
9/22	
9/23-9/24	**N/A**

9/25	
9/26	

9/27	
9/28	
9/29	**N/A**
9/30-10/1	**N/A**

10/2	 9:48 Screen1 Text for Button1
10/3	 9:48 Screen2 SPACE SCAVENGER Go! Instructions

10/4	 9:48 Screen1 FIRE
10/5	 9:48 gameover GAME OVER! Back To Main Menu