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Asteroids Mockup
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For my final project I had a lot of trouble deciding what to make. I didn't want to make a game that was too complex; however, I could not think of many 'useful apps'. After speaking with Matt he suggested to look into retro games such as Asteroids or Space Invaders and I ended up choosing the classic game, Asteroids. The theme of my game will be the vector based graphics of the original Atari version but with some added color and weapon upgrades.

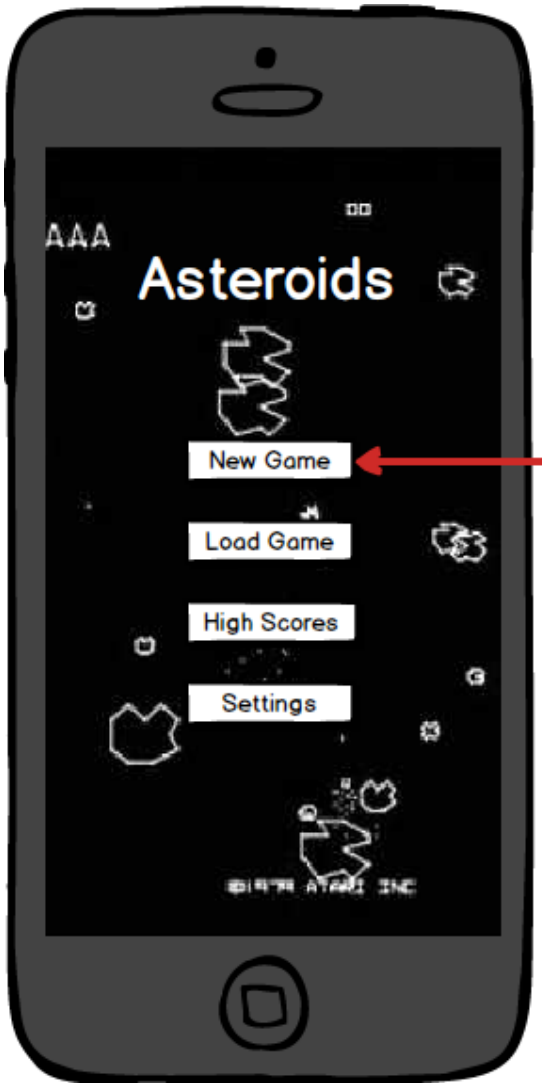
The gameplay will consist of the player's ship (starting with three lives) at the center of screen and the direction it is pointing in will change based on the player's touch coordinates on the screen. Whenever the user is touching the ship will fire at a constant rate (assuming no upgrades are being used). The enemies the player will be facing will be asteroids and UFOs. The asteroid class will have three levels from largest to smallest. Each largest asteroids will be broken into either one or two smaller asteroids which are then broken into even smaller asteroids after being shot. Asteroids have no health; therefore, it is one shot one kill. When an asteroid is spawned it will have a random directional vector generated and it sticks to the vector until it is broken up when the vector will change based on direction. If an asteroid floats off the screen it will be given a new directional vector to fly back into the game arena.

UFOs are other enemies that will have a directional vector to fly right into the user. Based on gameplay, I am planning on giving the UFOs health so you have to hit one a few times before killing it.

The UFOs will be key to destroy because they will give the player upgrades immediately. The upgrades will be burst fire, rapid fire, 360 fire, shield and an extra life. Each upgrade will have a different probability of being reached. Each game can be saved and will be auto saved occasionally based on the score. The user has the option to load saved games and also view high scores which are saved when the user dies.

Main Menu Screen

The background for the main screen will be a screenshot from the actual game; however, until I have one to provide I used the classic Atari Asteroids photo which is the theme I am going for. I plan on having the application be portrait only and covering up the toolbar with network information at the top. This is the screen that will show up whenever the user taps the icon to launch to app from the iPhone. This consists of a UI Label and four buttons. Each button pushes another view on the view stack. Future slides go into each screeen more in depth.

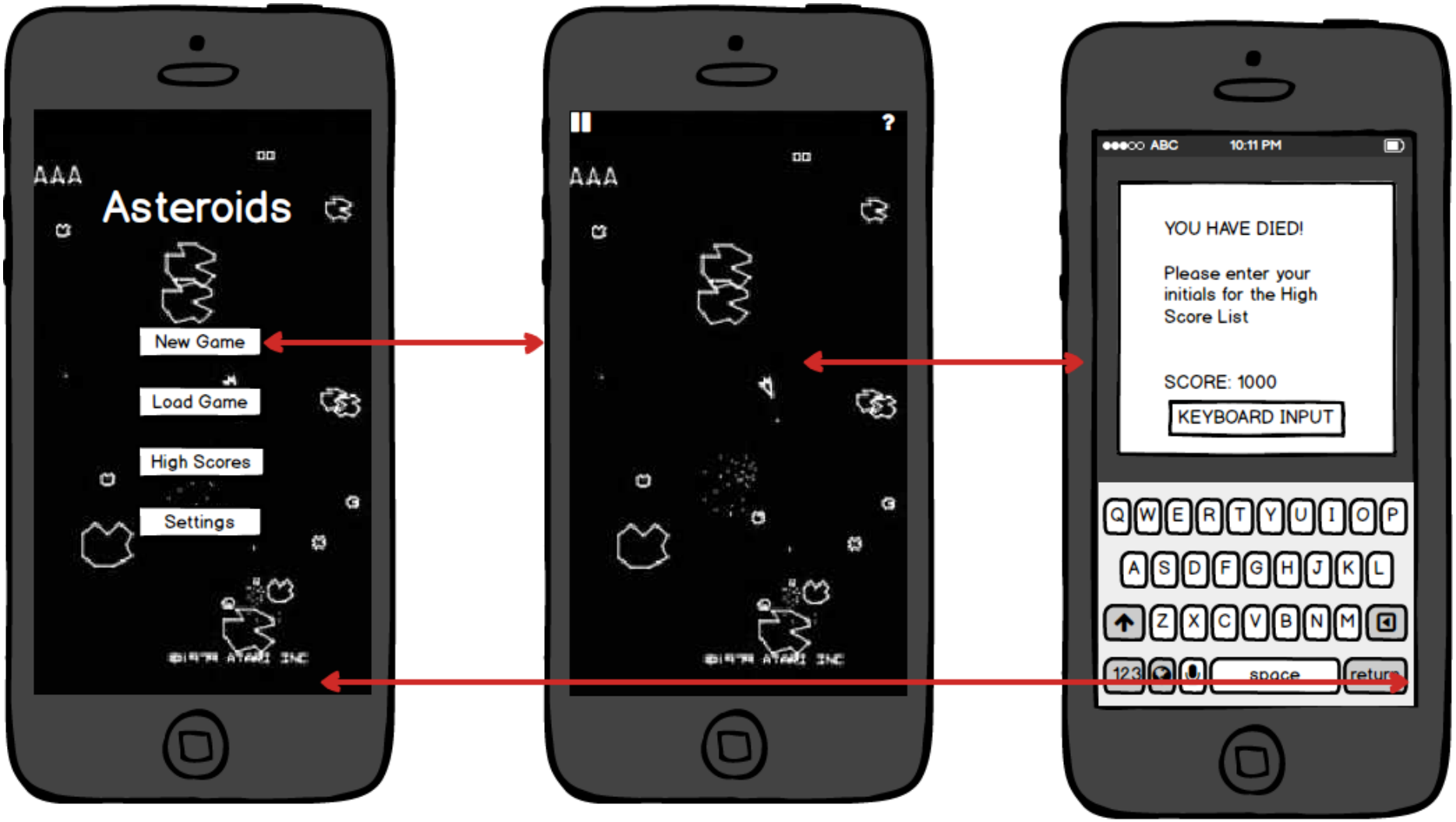


New Game Screen

When a new game starts the player has a moment to adjust to the controls and prepare for the game before the asteroids start spawning. The player's ship is in the center of the screen and will point to the directional vector generated by the user's touch coordinates. Whenever the user is touching the screen the ship will begin shooting and will end when the player lifts their finger. One concern I have is that having to always have a finger where you are trying to shoot will cover too much of the screen in which case I will have the player's ship always be shooting at a constant rate but will change direction when the user touches the screen. For more information about gameplay please refer to the 'Abstract' slide.

When the new game starts the music will also start playing (as long as the user has not deselected the music in the settings screen. If the user taps the '?' button it will pause the game and push the settings screen on the view stack. Here the user can change game settings and view the ' How to Play' screen.

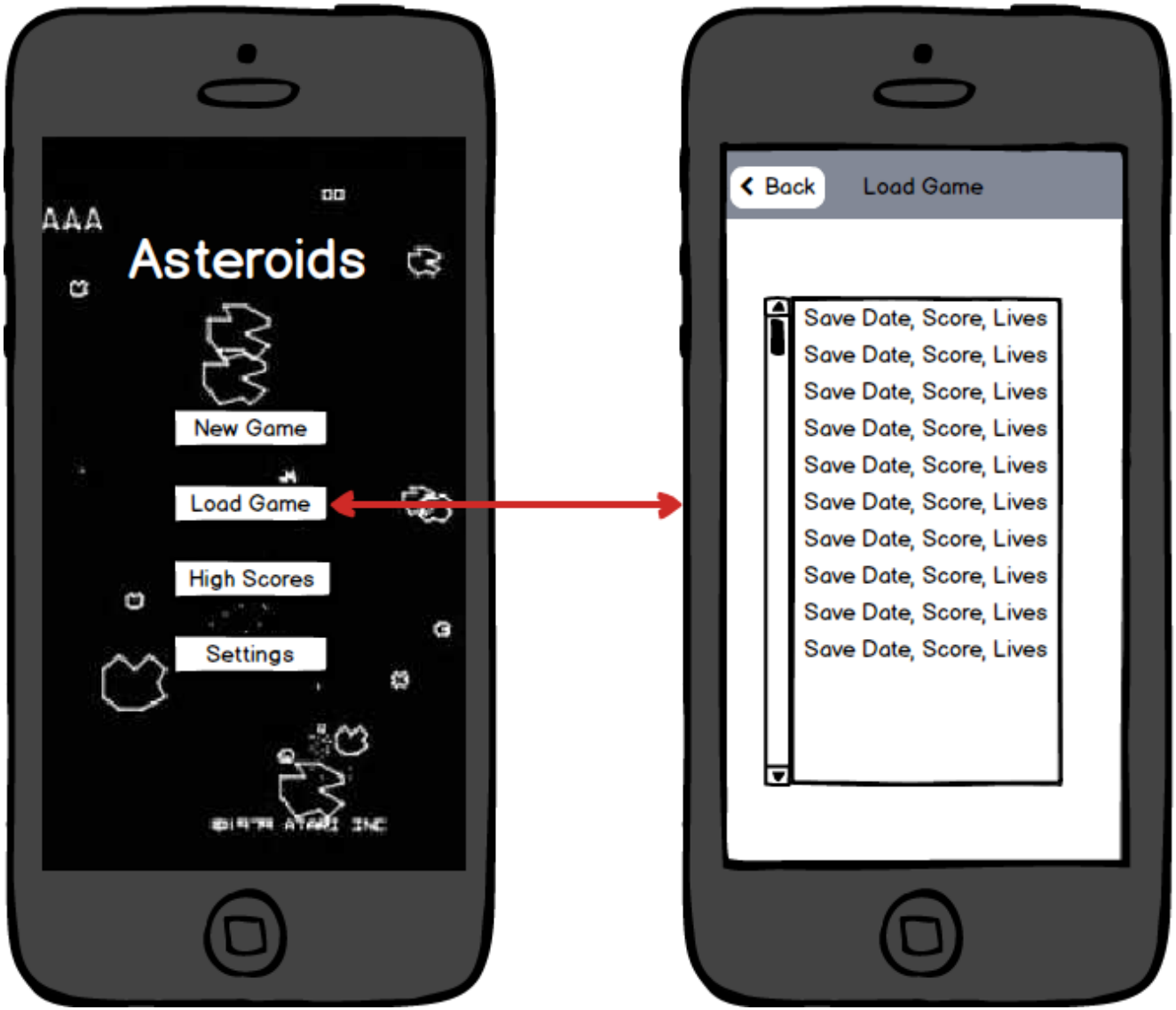
If the user selects the pause button the top left corner it will pause the game and the icon will change to a play button that the user can tap to keep playing the game. This pause icon will also act as the save button so a different icon may be used. Each time the user presses either the pause or '?' button the game will auto save as well (if that option has not been deselected in settings).



Death Screen

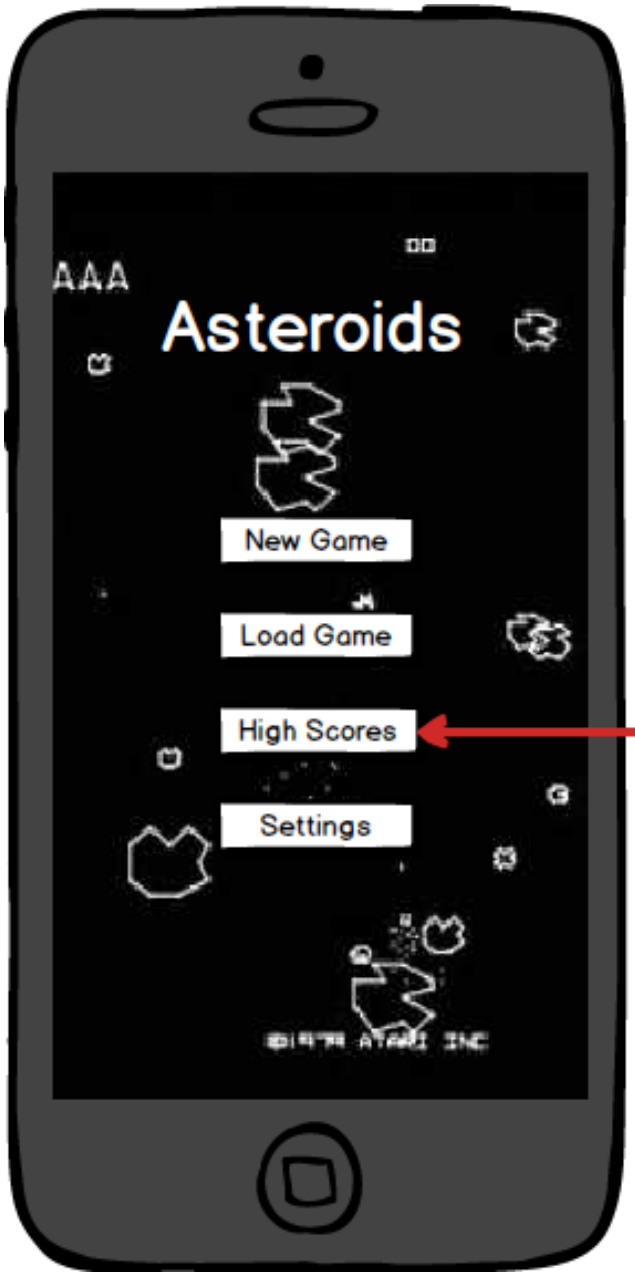
This the screen that shows up when the player dies. The user can enter 3 letter (initials) to be shown in the high score list. When the player presses return the views are popped back to the main screen.

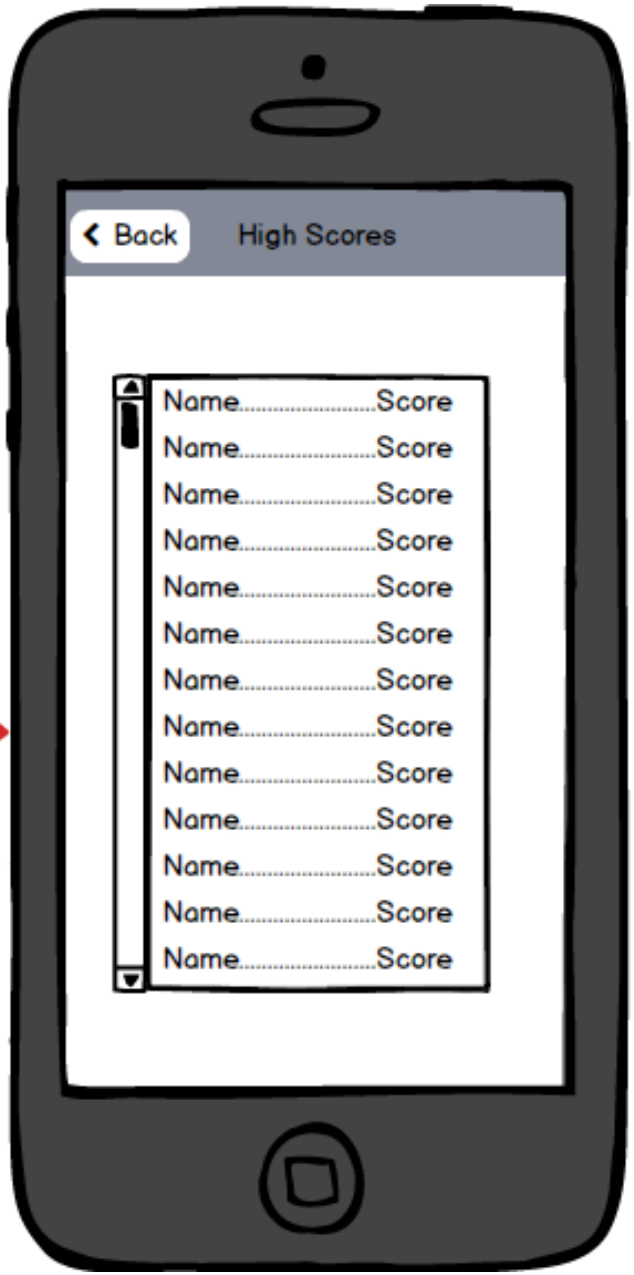
Alternative: I am considering a more old school approach and have 3 spinner selectors that parse through the alphabet. Old arcade games used to do this sort of thing since they did not have keyboards. In this case I will have a 'OK' button that saves the name and score and return back to the main screen as well.



Load Game Screen

When the player taps on a row in the list the New Game Screen will load with provided parameters. All asteroids will be originally cleared off of the board so the user won't spawn and immediately die. There won't be a physical scroll bar however I added one to indicate that the list will be able to scroll as any collection view is able to. Each row contains information about the game such as lives, score, upgrades, and kill count. Each game will have a unique identification number, so if a game auto saves or the user saves ten times, it will all be in one game with a UID instead of ten different saves.





High Scores Screen

This is a UI Collection View of the recorded high scores (sorted high to low). High scores are saved when a player runs out of lives - it does not include current games in progress.

The 'Name' is the initials entered in the death screen. These rows will not be selectable - only scrollable. I do not believe a max number of high scores will be needed however if it is, the lowest score will be deleted to make room for the current high score that needs to be entered.

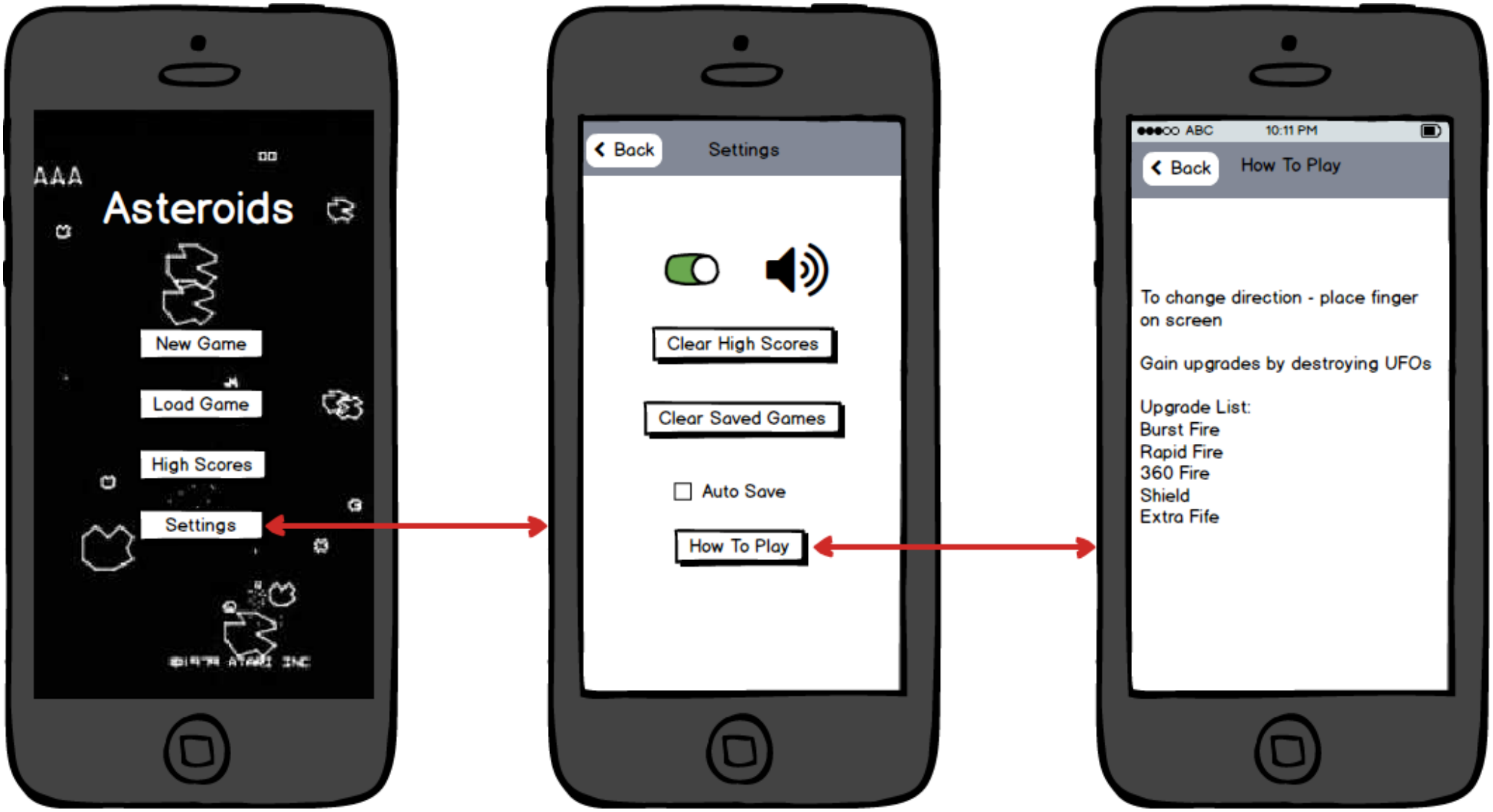
Settings Screen

This screen has a switch toggle to mute the sounds. Hopefully I will be able to implement multiple sound switches that mute sound effects or music.

The clear high scores and clear saved games will clear the saved data.

Toggling the auto save turns off the auto save feature and only saves when the user does in the '?' screen.

How To play pushes the How To Play view on the view stack.



How To Play Screen

This screen will mostly just be a block of text instructing the user how to play the game and give a list of upgrades that are unlockable.

Future Features:

Main Screen Animated Background:
In the 'Main Menu Screen' instead of a static image, generate asteroids to float around the background the make it more interesting. Would be very cool to have an AI ship shoot the asteroids in the background as well.

Advanced Settings:
Being able to change your ship's icon and color. In addition, choosing between playing as a stationary ship and one that can move.

Stationary vs Moving Ship:
This is the largest advanced feature that would really change gameplay. To have a moving ship, it would move and shoot in the direction of the user's touch. This opens up a whole new world of being able to move around generated maps which would greatly change the game. Having obstacles, barriers and pathways to move around would make the game very enjoyable.

Countdown after pause:
Have a countdown when the player resumes play so the player can see incoming asteroids and be less likely to accidentally have one run into him. This also would be helpful for loading games since currently I plan on loading the game with no asteroids on the screen so the player has a moment to get their bearings before asteroids kill the player.

Sharing High Score:
Share your high score on social media such as Facebook or Twitter.

High Score/Load Game Game Info:
A hopeful feature is to be able to select a row and load game details such as level, streaks, game length, and kill count.

Feature:	**Time in Hours:**
Main Menu Screen	1
Death Screen (saving persistence)	4
Load Game (loading persistence)	3
High Score Screen (saving persistence)	2
Settings Screen	1
How To Play Screen	.5
New Game Screen	1
Game World and physics	10
Game Mechanics	5
Upgrade Implementation	3
Sprite Designing	5
View Creation/Management	1
Sprite Animation	3
Misc	2
Total Hours:	**40**