

Super Scrap-Metal Brawl

A 3D Car Combat Game for PC and MAC

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Version History

Version	Author	Date	Changes
0.1	Joey Petrovski	01/08/12	Initial Draft Completed
0.2	Andrew Leung	01/10/12	Grammar/spelling revision, updated controls and A.I. section
0.3	Joey Petrovski	01/10/12	Added Title to the Game
0.4	Juan Almonte	01/11/12	Update Art Assets
0.5	Andrew Leung	01/11/12	Updated Music/SFX and A.I. Section
0.6	Andrew Leung	03/12/12	Updated Vehicle Class stats, Audio Assets, and A.I.
0.7	Juan Almonte	03/13/12	Updated Art Assets

0.8	Joey Petrovski	04/07/12	Major Re-Works Done to Some Sections, added Mini Map and Ranking Screen Sections
0.9	Andrew Leung	04/16/12	Updated GDD with gameplay changes and spelling/grammer check. Also updated Enemy A.I. section and Basic Core Mechanics.

Overview

Super Scrap Metal Brawl is a single player third-person 3D car combat game in the vein of Twisted Metal with a cartoon/cell shaded art style. This game is intended for people who enjoy this type of game which is the 12 – 35 age demographic. The goal of the game is to destroy all the other cars before you get destroyed and get the highest kill count. The game can be played on a PC, MAC or online using the Unity Web Player or Flash Player (when Unity 3.5 is released).

Walk Through

NOTE: All Numbers are Subject to Change

When the user first starts the application, a splash screen of the unity logo will appear for 3 seconds. Next, the Main Menu will then appear displaying the name of the game and 4 buttons: “Play Game”, “Instructions”, “Credits”, and “Quit” where the user can click and go to that specific menu option.

If the user selects “Instructions”, then the user will be forwarded to a screen that displays the instructions of the game and the controls. There is also a back button that takes the user back to the Main Menu.

If the user selects the “Credits” button, the user will be shown the list of people that contributed to the development to the game. There is also a back button that takes the user

back to the Main Menu.

Should the user click on the “Quit” button, the application will close(only for PC and Mac stand-alones).

When the user clicks on the “Play Now” button, the user will be directed to the character selection screen. The user will have a choice of 9 different characters each with its own unique name and attributes.

Once the user has made all their selection the application will take a second to load the game.

When the main game has been loaded, the user will be introduced to the map in which they will be playing on, the top HUD displays the pictures of all the represented AI vehicles in that play session along with their respective kill counts just below their respective pictures, a timer starting from 300 will be displayed in the top-middle part of the screen between the enemy vehicle pictures. The bottom part of the HUD will be strictly for the user's information. It will display the user's health, their kill count, an indicator to tell them if their special ability can be used and their missile recharge bar. On the right part of the screen just above the bottom HUD is a minimap that displays the positions of all the vehicles on the map in real-time.

The game play is similar to other standard single-player death matches against A.I. opponents and with a time limit. The player battles against the A.I. opponents and the A.I. opponents can battle amongst themselves. When the game starts the timer will commence starting from 300 seconds. The user will move around the map and locate the other vehicles and destroy them. The vehicle classes have different armour ratings so they will take different amounts of damage to be killed. If the user manages to destroy an opponent, the user's kill score will be incremented by 1. However, if the user gets destroyed by an opponent, then the vehicle that destroyed the user will have their score incremented by 1 and the user will have to wait for 5 seconds to respawn back into the game.

The play session continues until the timer reaches 0. Once the play session is over a rankings screen will pop up displaying the pictures and kill counts for the participants with the top 3 scores of the round. There will also be a prompt just under the pictures telling the user how they performed.

At the bottom of the ranking screen will be a prompt along with 2 buttons labelled “Char Select” and “Main Menu”. If the user selects “Char Select” then will be brought back to the character select screen. If the user selects “Main Menu” then they will be directed back to the Main Menu.

Controls

Menus

All the menu controls(including pause and ranking screen) in the game will be entirely mouse driven where the user has to click on the left mouse button to make a selection when the cursor is on the button.

Game Play

W - Moves playable character forward

A - Turns the playable character to the left

S – Moves the playable in reverse

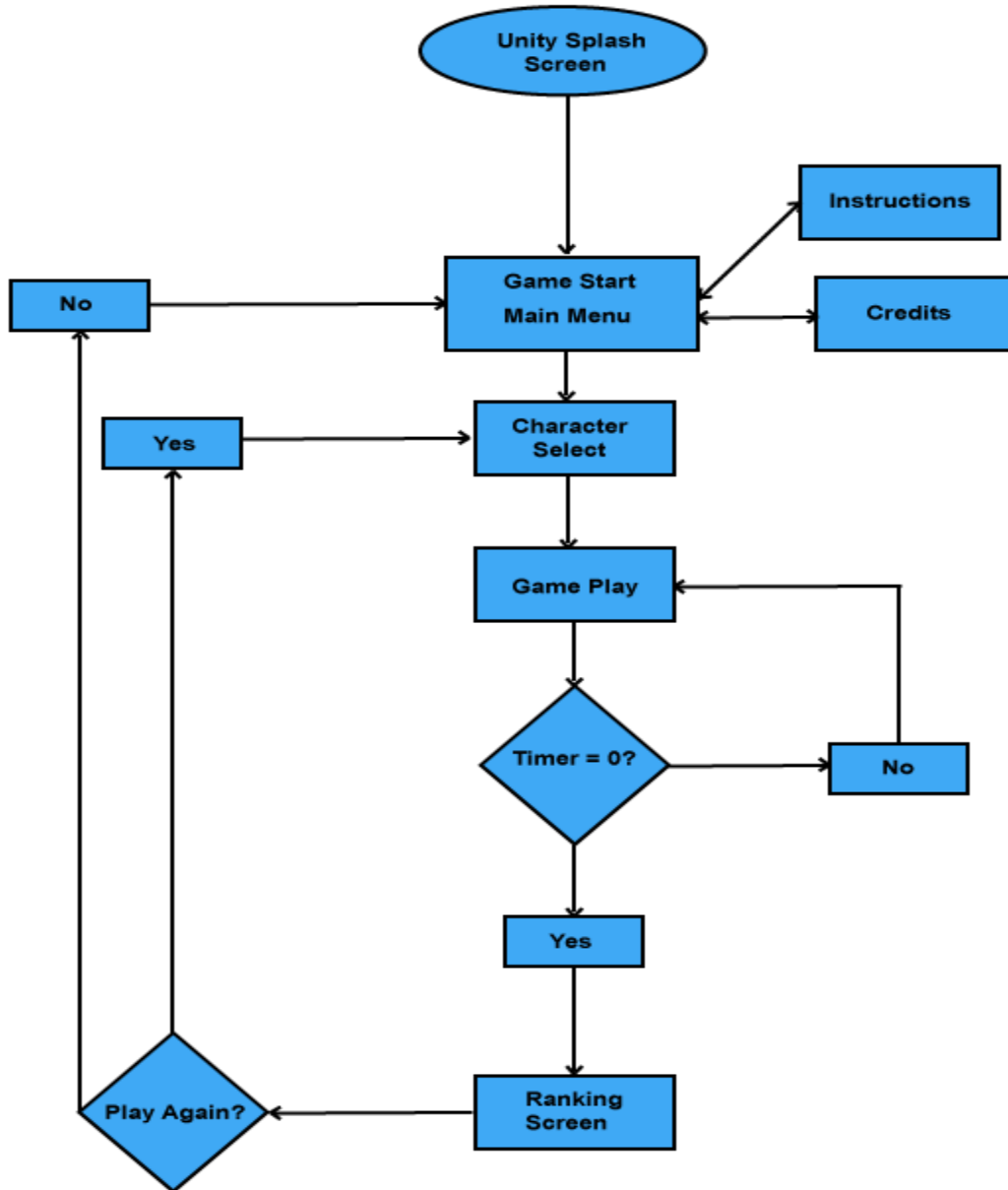
D – Turns the playable character to the right

Space button – Fires the playable character's missile

Return button – Unleashes vehicle's special attack.

Escape – Pauses the game.

Game Flow



Game Play

NOTE: Numbers are subject to change.

1. All vehicles will start in one of random spawn points on the map.
2. The vehicles are free to move around the map and the game timer will start moving down from 300.
3. There will be 6 AI opponents in the map, 2 from each vehicle class
4. The user will have to find and destroy the AI vehicles to amass points by using the WASD keys to move the vehicle, space bar to shoot the missiles and return key to launch special attacks.
5. If human controlled vehicle gets destroyed, the player will have to wait for 5 seconds until they can re-spawn back to the map. They will be re-spawned at their original starting point.
6. If a vehicle destroys another vehicle, then their kill count will be increased by one.
7. At any point during game play, the user is able to pause the game and choose whether to resume the game, choose a new character or go to the main menu.
8. The game will continue until the game timer reaches 0.
9. After the round is over, the scores will be tallied and the winner is crowned by having amassed the highest score or kill count. If the user tied with one or more of the AI characters, then the tie would go to the AI character. The user will have a choice to the character select screen or go back to the Main Menu.

Vehicle Classes/Special Abilities/Playable Characters

NOTE: Numbers are subject to change.

Classes

There are 3 different car classes in the game, light, medium and heavy each with their own different attributes. Each class will also have three different skins which are purely cosmetic.

Light

- Health: 150 HP
- Missile Damage: 25 HP
- Speed: 1.5 units/second

Medium

- Health: 200 HP

- Missile Damage: 25 HP
- Speed: 1 units/second

Heavy

- Health: 300 HP
- Missile Damage: 25 HP
- Speed: 0.5 units/second

Special Abilities

There are three different special attacks that are in the game: a ram attack, a homing missile, and a shock wave attack. Each car class will have one of these special attacks. The damage of these special attacks is dependant on its difficulty to hit opposing vehicles. Once the user has used their special their special bar icon will change to a red “x” indicating that their special needs to recharge. After 5 seconds, their icon will change back to the green check mark telling the user that they can use the special again.

Ram - “Rage Drive Ram”

- Damage: 150 HP
- Duration: 1 second

If a vehicle is equipped with this ability, then they will dash traight ahead at twice its normal speed and wall of spikes will be spawned at the front of the vehicle. Damage will only be done if the vehicle using the ram comes into contact with another vehicle.

Homing - “Type B Homing”

- Damage: 60 HP
- Duration: Until the missile hits an object

If a vehicle is equipped with this ability, they will be able to shoot a missile that will hit the closest vehicle regardless of what direction the vehicle is facing. The farther you are from a target, the greater the chance the homing missile will miss.

Shockwave - “Honey Cluster Shockwave”

- Damage: 40 HP
- Duration: 1 second

If a vehicle is equipped with this ability, they will emit a spherical shock wave which has a diameter of 3 times a heavy classed vehicles width that will do damage to any vehicle that comes into contact with it.

Playable Characters

Banana-Kong

- Class: Light
- Special: Ram

Blue Bison

- Class: Light
- Special: Homing

Homeless Tom

- Class: Light
- Special: Shockwave

Spectre

- Class: Medium
- Special: Shockwave

Croc

- Class: Medium
- Special: Ram

Kuru Teru

- Class: Medium
- Special: Homing

Kovek

- Class: Heavy
- Special: Homing

Union Jack

- Class: Heavy
- Special: Ram

Cherokee Bob

- Class: Light
- Special: Shockwave

Enemies

The enemies in the game are chosen from the same list as the playable car list (**see Playable Characters**) with similar attributes and specs. There will be a total of 6 enemy cars during a Death match with two cars selected from each class.

Basic Core Mechanics

- The game camera is in third-person perspective and follows the player's vehicle as they rotate and move along.
- In the game, the player battles against the A.I. opponents and the A.I. opponents can battle amongst themselves.
- The player can turn left or right and move forward or reverse.
- The car moves in the direction they are currently facing ("moving forward").
- The car moves in the opposite direction they are currently facing when they are "moving reverse".
- Cars fire their projectile in the direction they are currently facing.
- The map is a 2D grid when viewed from a bird's eye view (shown in the Overhead Map in the HUD).
- There will be perimeter fences surrounding the arena to prevent vehicles from escaping.

Enemy A.I.

Like the player, the A.I. can turn left or right and move forward or reverse.

1. In the beginning of the game, the A.I. is wandering randomly throughout the environment (**Wander mode**).
2. When another vehicle appears within a certain radius from the A.I., the A.I. will pursue that vehicle (**Pursuit mode**).
3. During pursuit, there is a random chance (every frame) that the A.I. will attack the target vehicle by firing its missiles.
4. When the A.I. has reached a close enough distance from the target vehicle, it will do one of two possible things:
 - Rotate 180 degrees and turn backwards (**Flee mode**)
 - Drive past the target vehicle (**Driveby mode**)
5. The A.I. will then wander the environment randomly until it detects another vehicle within its radar (i.e. Step 1-4 are repeated again).

Obstacle Avoidance: If the enemy A.I. is about to collide with another object (a building or the edge of the arena), they will rotate 180 degrees and drive away from the obstacle.

Main Game Interface

NOTE: Numbers are subject to change.

On the top part of the screen the 6 AI controlled vehicles will have their pictures displayed. Just under their pictures will be their corresponding kill counts. When a vehicle destroys another vehicle, their kill count will be increased by one.

The first 3 vehicle pictures will be placed on the left side and the other 3 will be placed on the right side leaving room for the game timer in the middle. The game timer will start off at 300 seconds and decrease by one every second until the timer reaches 0.

The bottom part of the screen is entirely used for the user's information. On the left most side is the user's health bar. The length of the bar is dependant on the vehicle class (**see Vehicle Classes**). The health bar will shrink when the user is hit by an opposing vehicle's missile or special attack. When the user has more than 50% health, the bar will be coloured green. When it is less than 50% but greater than 25% it will be coloured yellow, and when it is less than 25% it will be coloured red. Once the bar is depleted, then the user has died and will be removed from the screen for 3 seconds with a timer in the middle of the screen indicating when they will be spawned back onto the map (i.e. Respawn time).

Next to the health bar is the user's kill count. It will start off at 0 and will be increased by one each time the user destroys an enemy vehicle.

Next to the kill count is the special indication. When charged, the icon displayed will be a green check mark. If the user uses their special attack, then the icon will be changed to a red "X" for 5 seconds indicating that they cannot use their special attack. After 5 seconds the red "x" will change back to the green check mark.

Finally on the right there will be user's missile recharge bar. When full, the bar has 20 points. Every time the user launches a missile, 2 points will be deducted. If the bar becomes empty, then the user will be unable to shoot any missiles until the bar has recharged. The bar recharges by 1 point every frame.

If the game is paused, then nothing on the screen will move and a menu will pop up. The menu consists of 3 buttons: "RESUME", "CHAR SELECT" and "MAIN MENU" in which the user can use the mouse to make a selection.

If the user selects "RESUME", then the game will resume back to normal. If the user selects "CHAR SELECT", then the game will end and the game will go back to the character select screen. If the user selects "MAIN MENU", then the game will go back to the main menu.

Kill Count: Min: 0, Max 999

Health: Max: (**see Playable Character**), Min 0

Game Timer: Max 300, Min 0

Re-Spawn Timer: Max 3, Min 0

Mini Map

At right most part of the screen, just above the user's information HUD, there will be a mini map displaying the current location of the vehicles in real time. On the background of the map will be a birds eye view of the map to indicate where in the game world where the vehicles are. There will also be markers to show which vehicle is where. All the AI controlled vehicles will have a yellow dot representing them while the user's vehicle will be represented by a red circle with a white arrow showing which direction the vehicle is going.

Menus

The menu is divided into two parts, Main Menu and Character Selection Menu, both of which are controlled by the mouse.

Main Menu

The main menu can be subdivided into 3 parts: Title Screen, Instructions, and Credits.

Title Screen

At the title screen, a title of the game will be at the top part of the screen. Under that there will be 4 buttons in which the user can choose from: "PLAY GAME", "INSTRUCTIONS", "CREDITS", and "QUIT GAME".

Should the user select "PLAY GAME", then they will be directed to the character select screen. If the user selects "INSTRUCTIONS", the camera will turn to the left changing the title to "Instructions" indicating that the user is at the Instructions screen. If the user selects "CREDITS", then then the camera will turn to the right and change the title to "Credits" telling the user that they are at the Credits screen. Finally, if the user selects "QUIT GAME" then the application will close (**NOTE: This only works if the game is a standalone .exe or .app. You cannot quit the application this way if the the game is played on a web browser**).

Instructions

When the user arrives at the Instructions screen, they will be presented with a cube showing them how to play the game along with 2 arrows, one pointing to the right and one to the left. The instructions are divided into 4 part: The rules of the game, the controls, and explanation of the weight classes, and an explanation of the special abilities. By using the arrows, the user can turn the cube to reveal a different part of the instructions.

There is also a "BACK" button on the right side of the screen to take the user back to the Title Screen. This will change the title back to the game's name.

Credits

At the Credits Screen, the user will be shown a panel of all the people and involved in the making of the game including their respective job titles. Like the Instructions Screen, there is a "BACK" button to take the user back to the Title Screen changing the title back to the game's name.

Character Select

When the user arrives at the Character Select screen, they will be able to choose which vehicle they want to use during game play.

The user will be presented with 11 buttons in the left side of the screen, 9 for the playable characters, one "BACK" button and one "RANDOM" button. When the user hovers over each character's button, they will be presented with the name of that respective vehicle, their class type and their special ability. They will also be shown a 3D model of the vehicle rotating just under its name heading. When the user clicks on a character button, then they will be using that character during game play.

When the user hovers over the "BACK" button, a graphic will appear telling the user that this button goes to back to the Main Menu. If the user clicks on that button, then the game will take the user back to the Main Menu.

If the user hovers over the "RANDOM" button, then a 3D model of a question mark will rotate on the right side of the screen. If the user clicks this button, then the game will generate a random number from 1 – 9 to determine which vehicle the user will play with.

Ranking Screen

When the game timer reaches 0, the game will put all the kill counts into a list and sort them from largest to smallest. The game will then take the top three kill counts and the pictures of the vehicles that obtained these scores. Next the Ranking Screen will load up. There are 3 columns on this screen. They are labelled "1st", "2nd", "3rd" from left to right.. Under the "1st" column, the picture of the vehicle with the most kills will be displayed with their kill count just under its picture. Under the "2nd" column, the picture of the vehicle with the second most kills will be placed there along with its kill count just under. In the "3rd", the picture of the vehicle with the third most kills will be placed here along with its kill count just under the picture.

If the user's score ranked in the top 3, then a label named "YOU!!!" will be placed on top of the picture that is associated with the user's character.

Under the pictures will be a section for in which text can be displayed. This text will tell the user how they did during the previous round. There is different text for the 7 different positions the user can place and they are:

First: "Congratulations!!! You Came in First!!!"
 Second: "Sooo Close, You Came in Second!!"
 Third: "Good Job, You Came in Third."
 Forth: "Just Missed It, You Placed 4th."
 Fifth: "Keep Trying, You Placed 5th."
 Sixth: "You Need More Practice, You Placed 6th."
 Seventh: "OHHHH NOOO!!! You Came in Last!!!"

At the very bottom of the screen there are two buttons: "CHAR SELECT" which will take the user back to the Character Selection screen and "MAIN MENU" which will take the user back to the Main Menu of the game.

Art Assets

File NAME	Description
UnionJack.max	The 3D body of the heavy based character class
UnionJack.fbx	The Exportable version of the Heavy class for use in unity
Bus2.jpg	The Skin "UnionJack" for the Heavy Vehicle class
BusTires.png	The wheels skin for the Heavy class
homeless.max	The 3D body of the light based character class
HomelessTom.fbx	The Exportable version of the light class for use in unity
Homeless.png	The skin "HomelessTom" for the light vehicle class
Mecha.max	The 3D body of the Medium based character class
Mecha.fbx	The Exportable version of the Medium class for use in unity
MechCanon.png	The canon and engine skin for the Medium class vehicles
Mecha Wheels.png	The Tire skin for the medium class

	vehicles
mecha2.jpg	The skin “KuruTeru” for the Medium vehicle class
Missile.fbx	The Exportable version of the Projectiles for use in unity
Missile.max	The 3D body of the Projectiles
Missile.png	The skin for the Projectiles
BOB.fbx	Exportable Version of the 1 st Heavy alternate skin
Kovek.fbx	Exportable Version of the 2nd Heavy alternate skin
BOB.png	The Skin “Cherokee Bob” for the Heavy class
Kovek.png	The Skin “Kovek” for the Heavy class
WindShield.png	A blue material for the front of the heavy class
Bluebison.fbx	Exportable Version of the 1 st Light alternate skin
Banna.fbx	Exportable Version of the 2nd Light alternate skin
BlueBison.png	The Skin “BlueBison” for the Light class
BannaHammock.png	The Skin “Banna-kong” for the Light class
Croc.fbx	Exportable Version of the 1 st Medium alternate skin
Spectre.fbx	Exportable Version of the 2nd Medium alternate skin
Croc.png	The Skin “Croc” for the Medium class
Spectre.png	The Skin “Spectre” for the Medium class
Red_clay.png	A terrain texture for the mountains unity file

Red_earth.png	A terrain texture for the mountains unity file
Red_sand.png	A terrain texture for the mountains unity file
Arrowz.fbx	Small arrows indicating which direction you wish to rotate the instruction cube
Arrowz.png	The first texture for the arrowz.fnx
Arrowz2.png	A highlighted over state for the arrowz fbx
green.png	A green texture for the player icon
BackArrow.fbx	An arrow sign used in the main menus
red.png	A red texture for the player icon
Player_Icon.fbx	A red texture for the player icon
Banana-kong.png	A headshot of the Banana-kong character used in-game and character select
BlueBison.png	A headshot of the BlueBison character used in-game and character select
CarSelectBG.png	The background image used in the character select screen
Cherokeebob.png	A headshot of the CherokeeBob character used in-game and character select
Crok.png	A headshot of the Croc character used in-game and character select
HomeLessTom.png	A headshot of the Homeless Tom character used in-game and character select
Kovek.png	A headshot of the Kovek character used in-game and character select
KuruTeru.png	A headshot of the KuruTeru character used in-game and character select
Spectre.png	A headshot of the Spectre character used in-game and character select

UnionJack.png	A headshot of the UnionJack character used in-game and character select
Banana-kong_D.png	A headshot of the Banana character when defeated
BlueBison_D.png	A headshot of the BlueBison character when defeated
Cherokeebob_D.png	A headshot of the Cherokeebob character when defeated
Crok_D.png	A headshot of the Crok character when defeated
HomeLessTom_D.png	A headshot of the Homeless Tom character when defeated
Kovek_D.png	A headshot of the Kovek character when defeated
KuruTeru_D.png	A headshot of the KuruTeru character when defeated
Spectre_D.png	A headshot of the Spectre character when defeated
UnionJack_D.png	A headshot of the UnionJack character when defeated
SpecialOff.png	An indicator that your special attack is not available
SpecialOn copy.png	An indicator that your special attack is available
Timer copy.png	An Image that holds the game timer
Exit.png	An Exit image used in character select
P_select_bob.png	A header displaying the characters name in the select screen
P_select_croc.png	A header displaying the characters name in the select screen
P_select_jack.png	A header displaying the characters name in the select screen
P_select_kovek.png	A header displaying the characters name in the select screen

P_select_spectre.png	A header displaying the characters name in the select screen
P_select_teru copy.png	A header displaying the characters name in the select screen
P_select_tom.png	A header displaying the characters name in the select screen
P_select_banana.png	A header displaying the characters name in the select screen
P_select_blue.png	A header displaying the characters name in the select screen
Random_select copy.png	A header for the Random selection in the select screen
Random.png	An Image to select A random character
HoneyCluster.fbx	A 3d file for the shock wave special attack
Ram.fbx	A 3d file for the ram special attack
Ram.png	A texture of a spiked wall for the ram attack
Sphere.png	A texture for the shockwave attack
Billboard2.fbx	A scenery asset used in-game
Billboard.png	A scenery texture used in-game
Bridge.fbx	A scenery asset used in-game
Crapshack.fbx	A scenery asset used in-game
Saloon.fbx	A scenery asset used in-game
Stands2.fbx	A scenery asset used in-game
Stands.png	A scenery texture used in-game
Steakhouse2.fbx	A scenery asset used in-game
Steakhouse.png	A scenery texture used in-game
Arrow.fbx	An arrow sign used in the main menus
Title.fbx	A wood post sign that holds the main menu options
wood 1.png	The wood texture used on a majority of

	in-home scenery and menu assets
box2.png	The instruction texture on the rotating rules box
Ranking_#1.png	The 1 st place image asset used in the ranking screen
Ranking_#2.png	The 2nd place image asset used in the ranking screen
Ranking_#3.png	The 3rd place image asset used in the ranking screen
Ranking_kills.png	A title used in the ranking screen to display the victors total number of kills
Ranking_title copy.png	A title for the rankings screen
Ranking_placement	The background image used in the rankings screen
Homing.fbx	The 3d file of the homing missile special attack
Homing.png	The texture for the homing missile special
Logo.png	Game title used in the main menu screen
pauseTitle.png	The Header for the paused options menu
resumeBtn.png	The resume button with in options menu
CharselectBtn.png	The Char select button with in options menu to return to character select
MainmenuBtn.png	The main menu select button with in options menu to return to Main menu
camBg.png	A border for the mini-map used in game
Woodcircle.png	The image that houses the kill count for each character
Rockets.png	The title for the Rocket meter

Special.png	The title for the Special indicator
Kills.png	The title for the players' kill count
Health.png	The title for the players health bar
greenHealthbar.png	The player's health bar
yellowHealth.png	The player's health bar
Class_heavy.png	An indicator in character select determining the vehicles weight class
Class_medium.png	An indicator in character select determining the vehicles weight class
Class_light.png	An indicator in character select determining the vehicles weight class
Special_Homing.png	An indicator in character select determining the vehicles special attack
Special_Shockwave copy.png	An indicator in character select determining the vehicles special attack
Special_ram.png	An indicator in character select determining the vehicles special attack
CRED_TITLE.png	The Credits header used in the main menu
INS_TITLE.png	The instructions header used in the main menu
CHAR_SELECT_TITLE.png	The character select header used in the character select screen

Music & SFX

File Name	Description
Cattle Drive (Theme).mp3	Main Menu
Moosehead Honk(Pad).mp3	Game Music
Moosehead Honk(Theme).mp3	Car Selection Menu

Bang.mp3	Player and Enemy missiles
Orb.mp3	Shockwave Special
Boom.mp3	Ram Special

Credits

Design

Joey Petrovski

Art

Juan Almonte

Programming

Andrew Leung

Music and SFX

Michael Samuels

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Purple-Planet.com for the music*