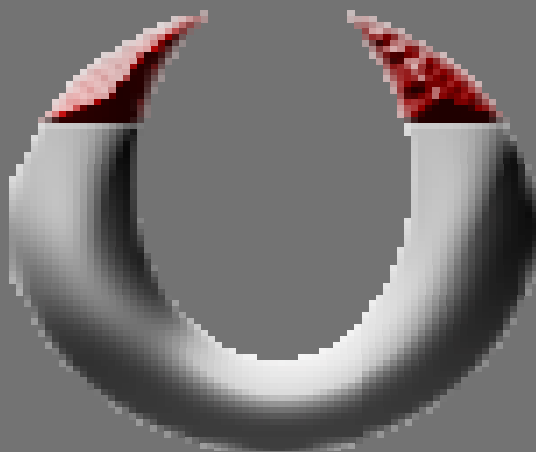


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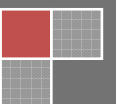
Killer Atomic Robotic Magnetic Ants

User's Manual

XBOX360 game documentation



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CSS450 Final Project
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Overview

K.A.R.M.A. is a top-down, two player game. The game is set in a futuristic, biomechanic environment where players have to fight for supremacy over the biological computer in which they live. Each player represents a member of a separate virus.

There are objects that appear randomly throughout the game and can be used as projectiles to damage your opponent. The hole in the middle can be strategically used to dispose of your enemy, and of course, yourself as well!

The final version runs on the XBOX 360. Most of the textures and the soundtrack are custom created.

Controls

The following screen shot shows the control of the game.



Start button is used to bring up the pause menu from which the game can be reset with back button.

Hint: To quit the game, press the big Xbox button to bring up the side window and press Y to return to XBOX360 dash board.

Player Movement

Player movement is defined entirely with the left analog stick. Up on the analog stick results in forward acceleration. Down gives backwards acceleration. Left and right make the hero rotate.

Projectiles

Throughout the game, there are projectiles that randomly spawn on the map. These projectiles are antibodies and biological compounds that players can utilize. The center of the map has a high concentration of projectiles. This section describes the usage and types of the projectile objects in the game.



Projectile Usage

Charge projectile: Hold right trigger **and** left trigger while a projectile is in range of your magnet.

Shoot projectile: Once projectile is charged and locked into place, release the right trigger. The speed of the projectile depends on the thrust of the left trigger.

Note: do not let go of the left trigger unless you want the projectile to stop!

Projectile Types

-  **Antibody Heatseeker:** Automatically attempts to move towards your opponent. Upon impact, it does 20 points of damage. This projectile type is scarce.
-  **BioGuided Missile:** This projectile is bound to your magnet. It will adjust its velocity to the direction that your magnet is facing in real time. To change its direction, mid flight, change your magnet's direction. Upon impact, it does 10 points of damage.

Player versus Player Combat

The main focus of the game is player versus player combat. There are various techniques that can be used to quickly dispose of your opponent. We encourage you to explore different options. You might find unexpected results!

The basic controls are as follows:

Right trigger: Pull enemy player towards you.

Left trigger: Push enemy player away.

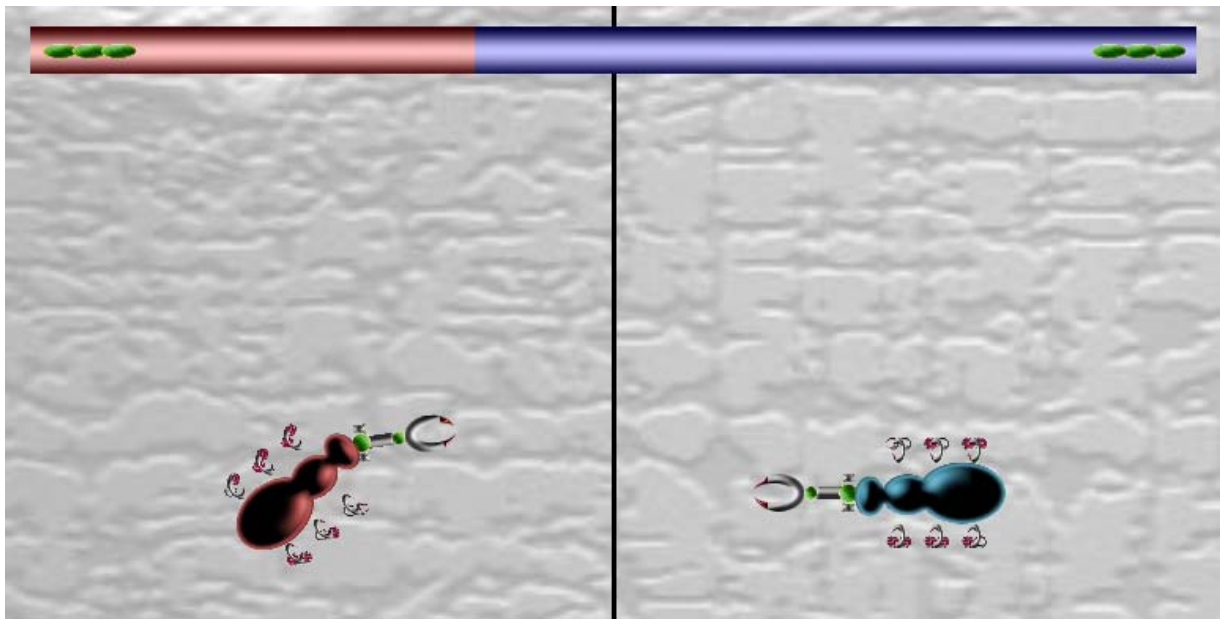
Hint: The magnet can be used to catch incoming projectiles!

Warp Holes



This object transports the player into an unknown dimension. Falling into this environmental hazard causes you to lose a life instantly.

Life and Health Points



Health points are represented in the bar as shown above. In the above case, the blue player is winning. The red player will lose a life if the bar fills up with blue, and vice versa. The number of lives is represented by the green circles. In this case both players have three lives.

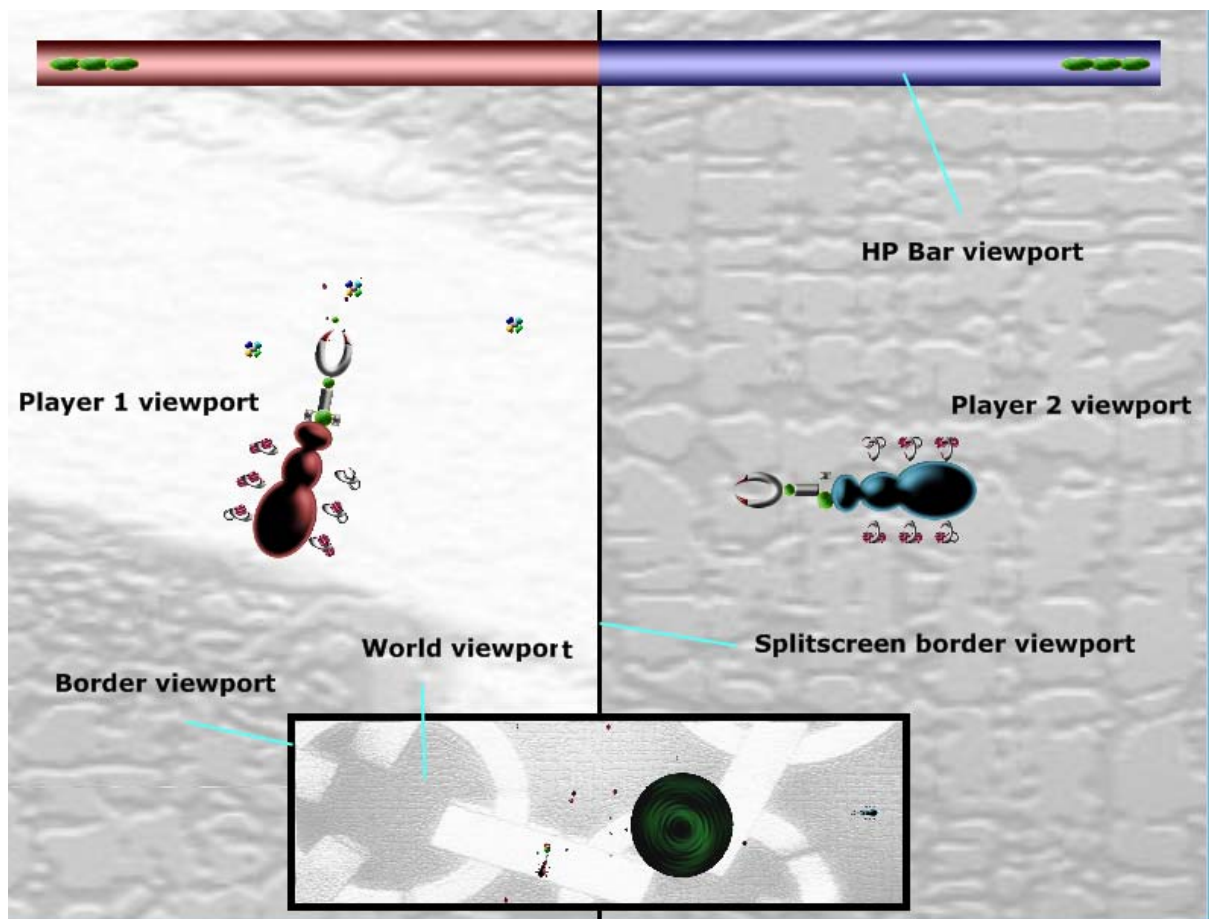
Game Progression

The game ends when one of the players uses up all lives. The end result of a level is displayed after the game ends, and players are able to proceed to the next level with a press of A button. The game environment changes as the game progresses and the environment variables such as friction and number of projectile objects are affected by the level. There are only three levels in this build.

System Design

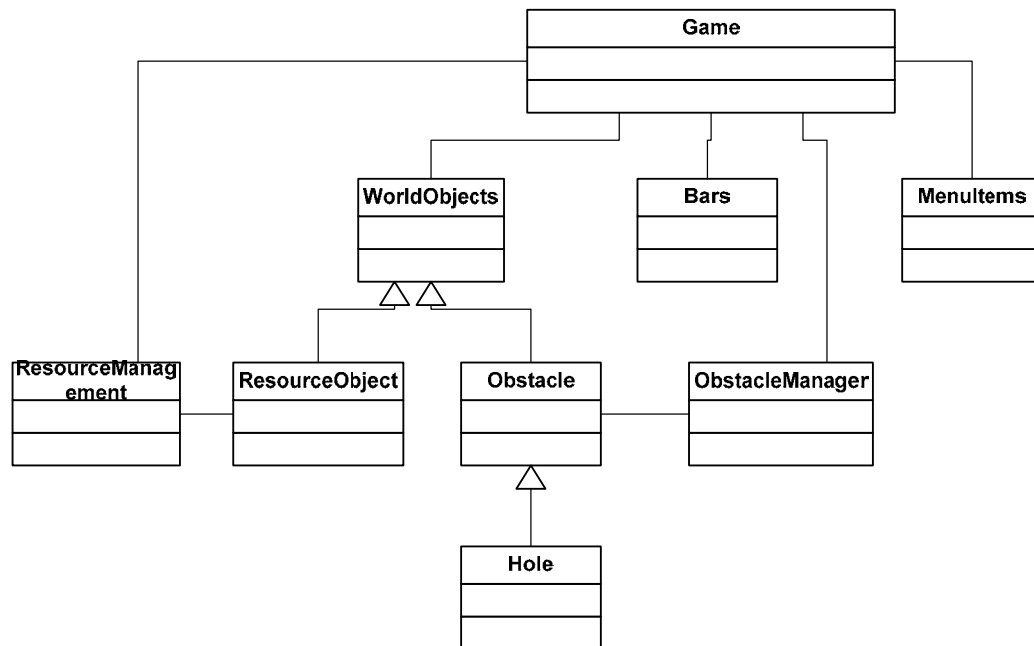
This section briefly documents the design of various aspects of the game.

Viewport Description



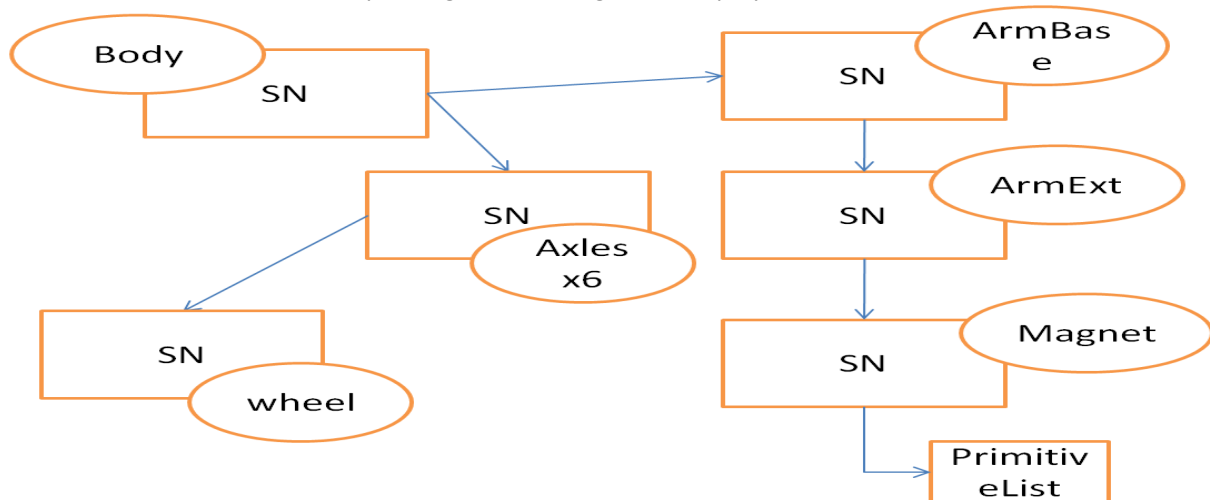
There are a total of 6 viewports visible on screen, as shown above. The split screen border viewport is basically a very thin viewport with a black background. The border viewport around the zoomed out world viewport is a little bigger than the world viewport, and it is drawn first.

Class Diagram



Main Character Design

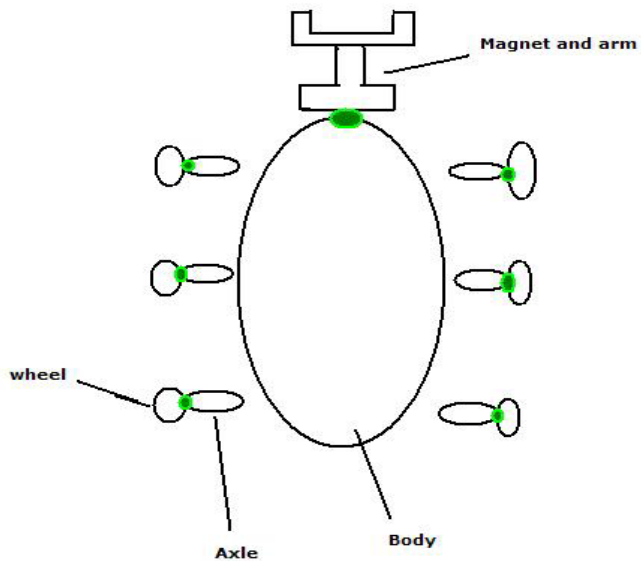
The main character consists of several scenenode structures. All player movements are done via transformation. Below is a simple diagram showing how our player is structured.



On the magnet level, the scenenode holds a list of rectangle for display/texturing as well as a few primitive circles for collision detection, and a point for reporting the direction in which the player is facing.

Note: SN denotes SceneNode

Below is a diagram of our player character



System Evaluation

This section contains known bugs, system limitations and design issues.

Known Bugs and limitations

- ❌ Warp Hole generator does not create more than one hole. The game skips the for-loop entirely.
- ❌ Player one has the ability to adjust the health bar with the directional pad. This was done for testing purpose.
- ❌ The way collision calculation is handled in the game might create slow-down in certain situations.
- ❌ Under certain circumstances, players might be able to leave the world bounds from corners.
- ❌ Due to the time constraint, the organization of the project is not in the optimal condition. A large portion of the time was spent on MP5 which was almost entirely unrelated to the design of our final project.

Possible Future Features

- ❌ Four player support
- ❌ More warp holes
- ❌ Different kind of obstacles
- ❌ Particle Effects for player explosion and collision
- ❌ Power ups (speed boost, magnet boost, size change etc.)
- ❌ XBOX LIVE support