Ant Annihilation

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Background Story

In a long forgotten land, an ant colony is stranded in a hostile environment. As an ancient ant god, your job is to save the fate of your ant colony. Threatened by the influence of the four seasons, you lead your colony to face the dangers originating by nature and enemy colonies. Fight for the survival of your colony.

Game Description

Ant Annihilation is a multiplayer game where players control ant colonies. The main tasks include food collection, expansion and attacking enemy players. The ant population consists of worker and warrior ants. Worker ants are responsible for food collection whereas warrior ants are responsible for combat. Individual ants react to their local surroundings, e.g. worker ants collect nearby food and warrior ants attack enemy ants. Players control their ant populations by drawing pheromone paths onto the map.

Ants

Ants are divided into two types: Worker ants and warrior ants.
Worker ants are capable of collecting food from the map and bringing it back to the hive. Worker ants are more intelligent and less obedient than warrior ants; if a worker ant gets hungry, it will ignore commands of the player and return to the nearest hive for feeding.
Warrior ants are strong, aggressive and unintelligent ants capable of defending the hive. They can easily overpower worker ants in one-on-one combat and always follow the player's commands.

Pheromone paths

Ants are controlled using pheromone trails drawn by the player. Ants close to the starting point of a pheromone trail will start to follow it to its end point. The strength of the pheromone on a trail can also be controlled; a stronger pheromone scent means that more ants will follow that trail. The length and amount of pheromone trails placed on the map is limited by a global pheromone pool. Placing a trail will deplete the pool. Longer paths and stronger pheromone scent are more expensive than shorter paths and weaker scents.
Trails decay over time and as ants follow them. Once a path has decayed, ants will no longer

follow it. As a path decays, its pheromone cost will slowly be returned to the global pool.
The size of the pool depends on the number of ants in the colony - a larger colony results in a larger pool.

Two types of trails can be placed: Worker trails, which guide worker ants to food sources, and warrior trails, which can be used for defense, attack and patrol using warrior ants.

Hives

Each player starts out with a mother hive. Over the course of the game, players are able to capture additional hives placed on the map. Each hive under a player's control will increase the size of his food storage, which forms the basis for a larger population. Hives start out neutral and can be captured by placing worker or warrior ants nearby. Hives can be taken from other players by placing more ants close to the hive for a prolonged period of time.

Food

Food is the primary resource in ant annihilation. Ants need to continually be fed in order for them to survive. Food is stored in a global storage, which size is controlled by the number of hives under a player's control.

Breeding

Players control breeding by giving explicit orders for worker or warrior ants. Newborn ants are starved, meaning they immediately start feeding from the food storage. Therefore players are responsible for carefully controlling the breeding rate in order to not endanger the health of the colony. Ants are always born in the mother hive.

Seasons

During the course of a game, the environment changes due to the effects of the four seasons. The game begins in the spring season. Each season takes the same, constant amount of time to pass (2-5 minutes). Players will be warned when a new season is about to start. Players will also have a season clock, telling them exactly how long a season will last. Planning ahead of the seasons will be crucial for success.
The effects of the seasons are as follows:

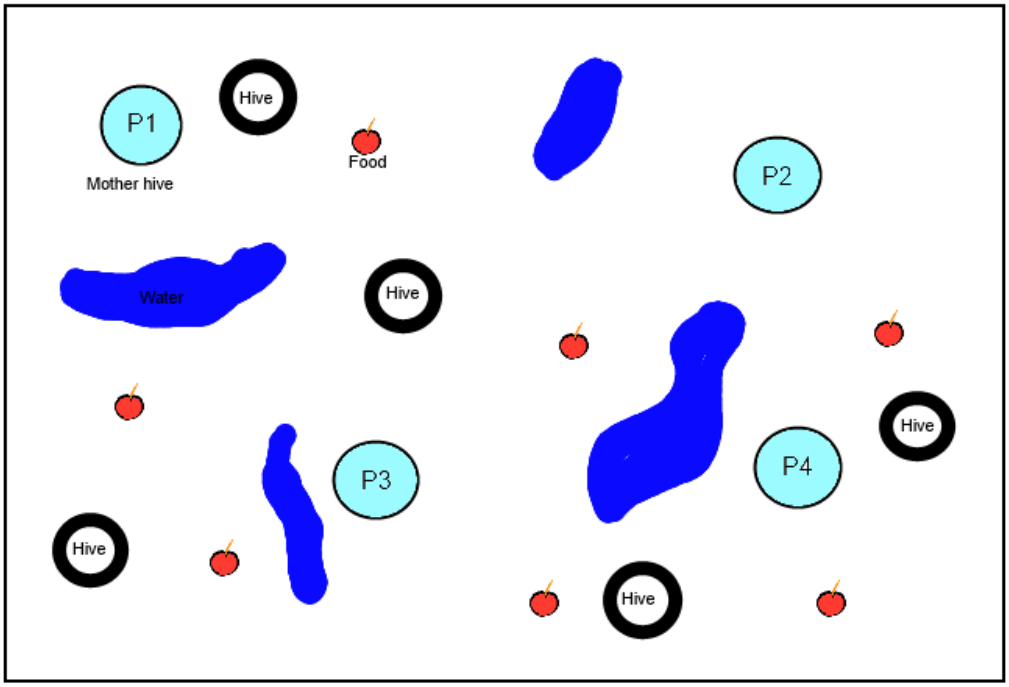
Season	Food	Walk Speed	Specials
Spring	low	increased	The water level rises from melting snow and ice, making water obstacles bigger or completely hiding previously visible paths.
Summer	high	reduced	Small water sources vaporize, food not in the vicinity of a water source will foul after a short amount of time, leaving the food provider useless.
Autumn	medium	normal	Rain drops fall onto the battlefield, killing ants getting hit and introducing new water obstacles.
Winter	low	reduced	Water sources on the map freeze, revealing shorter or completely new paths.

Game Modes

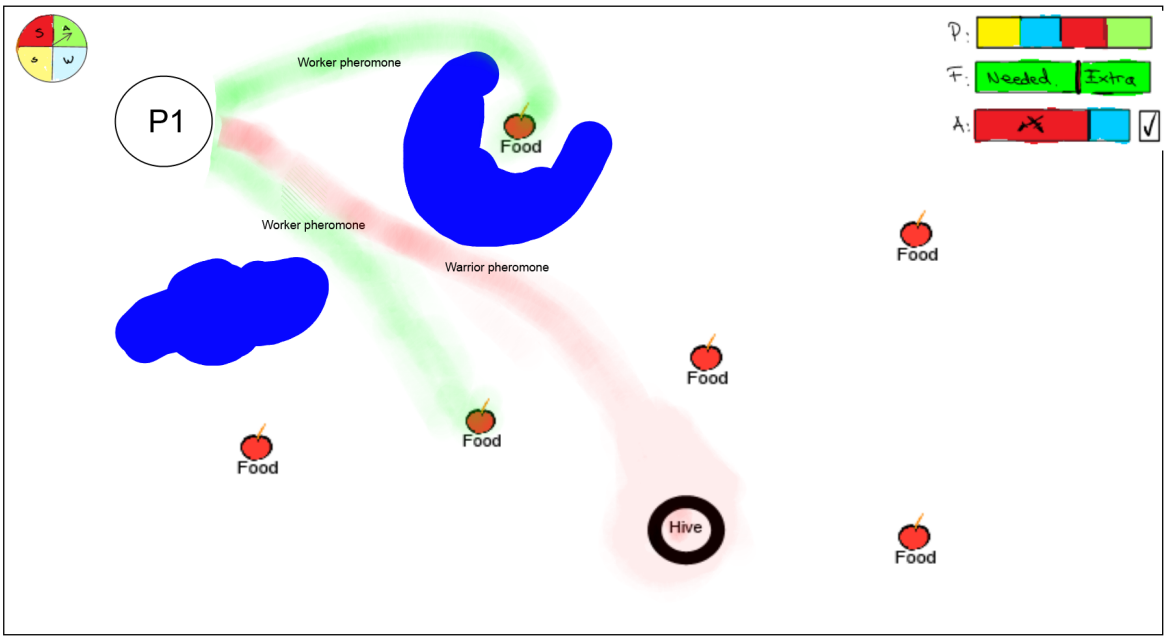
To win a game of ant annihilation, players need to reach different goals depending on the game mode:

- **Annihilation**: The player who eliminates all enemy ants wins the game.
- **King of the hive**: The player controlling the most hives after a given amount of time wins the game.
- **Food rush**: The player who collected the most food after a given amount of time wins the game.

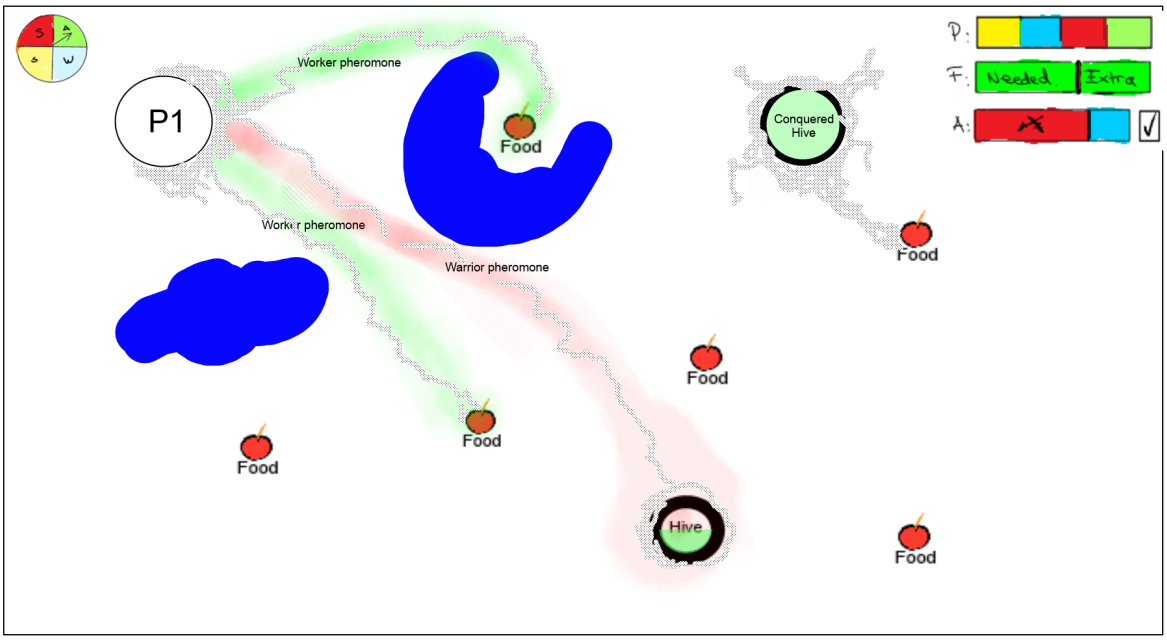
Mockups



A typical map in Ant Annihilation



Pheromone trails drawn by a player

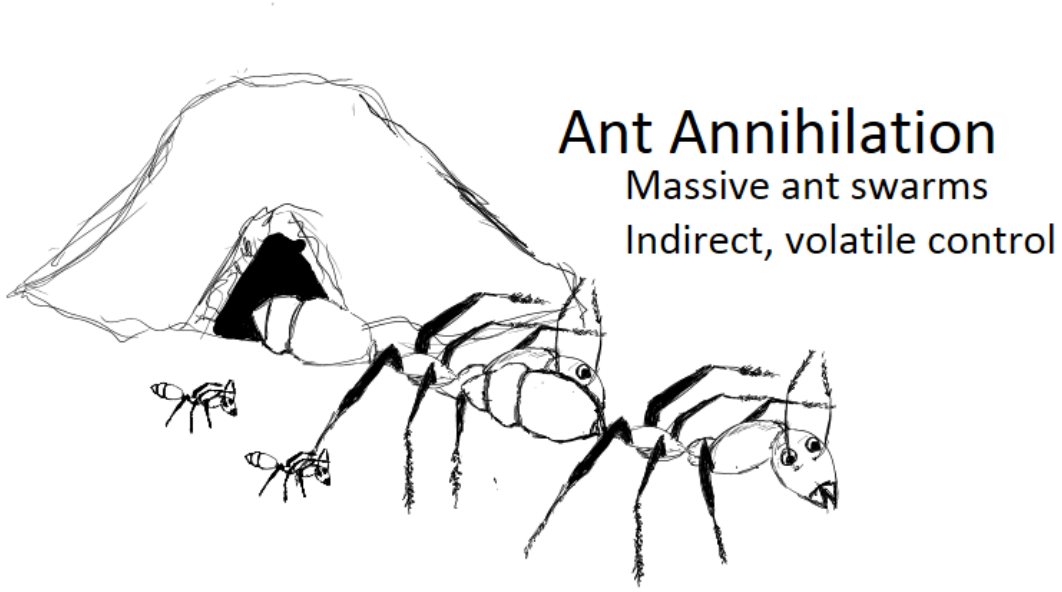


Ants reacting to pheromone trails

Technical Achievement

Simulating large amounts of ants in a multiplayer game poses a challenging problem. The game simulation needs to be deterministic in order to keep multiple machines synchronized.

Big Idea Bullseye



Development Schedule

Functional minimum

- Simple top-down graphics
- Ants controlled by pheromone trails
- Food items and storage
- “Food rush” game mode

Low target

- Breeding
- Worker and warrior ants
- Hives
- “King of the hives” game mode

Desirable target

- Multiplayer
- Season effects (food availability, walking speed)
- Music / audio effects

High target

- Season effects (water / ice)
- Improved graphics
- Living food

Extras

- Side-view for hive management
- AI

Schedule

	Final Proposal	Physical Prototype				Intrim Report			Alpha Release		Playtest	Release
Task	**KW10**	**KW11**	**KW12**	**KW13**	**KW14**	**KW15**	**KW16**	**KW17**	**KW18**	**KW19**	**KW20**	**KW21**
Simple Graphics			SK/MM	SK/MM	SK/MM							
Ants & Pheromones			BB	BB								
Food & Storage					BB							
"Food rush"					BB							
Breeding						MM						
Worker ants						BB						
Warrior ants						BB						
Hives							MM					
"King of							MM					

the hives"												
Menu system							MM					
Multiplayer							SK/BB	SK/BB	SK/BB			
Food availability								MM				
Walking speed								MM				
Music / audio effects									SK			
Water / ice										BB	BB	
Improved graphics									SK/MM	SK/MM	SK/MM	
Living food												?
Balancing										ALL	ALL	
Polishing												ALL

Assessment

The strength of our game is the indirect control. Steering massive amounts of units that behave somewhat autonomous indirectly by drawing onto the screen is what differentiates Ant Annihilation from other games. A player does not have the ultimate god-like control over his minions. Instead, each ant acts based on its environment and reacts to changing circumstances on its own. The player can adjust the behavior of the ants using pheromones, but that's all the influence he has on the ants.

Since ants can not be directly controlled, players have to strategize and plan ahead. Once drawn, a pheromone path will have its influence and the player can not change that. Reading your opponent and drawing pheromone paths in such a way that you win is a big challenge and requires a lot of skill, especially since the opponents are human as well.