Proposal “Parasite Paradise”

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Game Description

Summary

The idea of this game is inspired by the PS2 game ‘Shadow of the Colossus’ where the player has to defeat colossal enemies by climbing onto them and stabbing their weak points with a dagger. The game level is not a mere static landscape anymore, but a moving creature with new challenges to the player.

Screenshot from Shadow of the Colossus

‘Parasite Paradise’, however, steps further into megalomania: The player controls a louse which crawls over the body of a huge moving fantasy creature. Each game level consists of one such victim. The louse starts off at a lower body part, a foot for example, and has to head for the upper parts. The goal is to reach the victim’s weak points where the louse can suck blood from until they have run dry. A victim will eventually fall unconscious from blood loss. Before the louse can move on to the next level, it takes advantage of its victim’s knock-out and lays some eggs. Until the breed has hatched, the louse has to protect them against a vicious hungry bug in an end boss fight. Finally, the player gains score points depending on the number of eggs hatched safely.

On its way to the top, the louse has to master some difficulties: It has to fight competing parasites by throwing eggs at them or making use of its claws like swords. When the player louse is attacked and injured itself, it weakens and eventually falls off the victim, which means that the level has to be started again from the beginning. When the louse sucks blood from a weak point, its energy is restored.

The louse has also the ability to jump, which has to be timed with care, however. Since it is sitting on a moving creature, a miscalculated jump can lead to a fall to the ground and a return to the level start. It is also not a good idea to jump when the louse is in an upside down position. As long as the louse is in contact with the creature surface, there is no danger of falling off.

Additionally, the louse has to beware of anti-lice shampoo floodings. The player has to anticipate the flow of the liquid and avoid it as it weakens the louse and could wash it off the creature's body.

To make a different challenge of each game level, they contain special scenarios or tasks. For example, the victim could fly through the sky or dive under water which makes jumping impossible. Or the player louse has to win a race against a horde of enemy parasites and reach a blood-sucking spot faster. Eggs of vicious bugs could be hidden all over the level and have to be spotted and destroyed. The victim creature might also try actively to get rid of the louse by scratching itself, rolling on the ground or shaking itself.

The main character

Technical Issues

- Rendering of viscous liquid using smoothed particle hydrodynamics:
  Papers:
  http://www.cs.umu.se/education/examina/Rapporter/MarcusVesterlund.pdf
  http://rivit.cs.byu.edu/a3dg/publications/steele04.pdf
  http://www.ann.jussieu.fr/~frey/papiers/pvfs.pdf
- Rendering hair by representing each strand as a B-spline for close hair and approximating it by sampling particles or sparse hair guides for distant hair:
  Papers:
  http://graphics.pixar.com/Hair/paper.pdf
  http://nis-lab.is.s.u-tokyo.ac.jp/~ybando/hair/EG03hair.pdf
  http://historical.ncstrl.org/tr/pdf/uiuc_cs/UIUCDCS-R-2002-2312.pdf
- Under water effects
- Rendering cloth for the level design
- Moving an object on another (the louse on the monster)
- Collision dectection
- Animate models
- Physics (move and jump)

Sucking blood from a weak point

Development Schedule

Task Breakdown

1. Functional Minimum
    - The player can move the louse (no jumping, no animation)
    - Static level with different ground properties (slippery, sticky)
    - Background
    - Blood can be sucked from weak points

2. Low Target
    - The level is moving
    - The camera does not lose track of the levels movement
    - The louse can jump
    - Throwing eggs
    - Enemies with simple AI
    - Louse / Enemy health indication and management

3. Desirable Target
    - Hair simulation (no interaction)
    - End-boss fights
    - Cell shading / Overall nice graphics
    - Sounds

4. High Target
    - Anti-lice shampoo
    - Different game scenarios

5. Extras
    - Multi-player option
    - Cloth simulation
    - Collision detection with hair

Task List

Task	Phase	Who does it	Estim. time	Actual time
Miscellaneous				
Title screen	1			
Level design	2			
Background textures	1			
3D Models				
Characters	2			
Levels	2			
Background	1			
Blood-sucking spots	1			
Eggs	2			
Items	3			
Animation				
Characters	2/3			
Levels	2/3			
Blood-sucking spots	1			
Camera control / movement / zoom?	2			
Physics				
Jumping physics	2			
Movement on slippery ground	1			
Movement on sticky ground	1			
Hair simulation	3			
Liquid simulation	4			
Character drifts with liquid	4			
Collision detection				
Between character and ground	1			
Between characters	2			
Between thrown egg and ground	2			
Between thrown egg and characters	2			
Between hair strand and ground	5			
Between hair strand and character	5			
Between liquid and character	4			
Graphic effects				
General lighting	1			
Cell shading	3			
Under water effects	5			
Sound				
Background music	3			
Sound effects	3			

Game events

Player interaction (gamepad)	1			
Level start, initialization	1			
Level end -> via menu or success	1			
Sound triggering	3			
Throwing eggs	2			
Health bar	2			
Sucking blood from a weak point	1			
Spawning/Removing enemies	2			
Spawning/Removing hair strands	3			

Level scenarios

Time race	4			
Collecting hidden eggs	3			
Victim scratches itself, rolls on the floor	5			
Under water/In the air	5			

AI

Enemies	2			
End-bosses	3			

Timeline

1. Move the louse over a flat plane. No animations, no jumping yet.
2. Move the louse over a static level model. Collision detection with the ground.
3. Different ground properties (slippery, sticky) and their effect on the louse movement.
4. Sucking blood from weak spots.
5. Jumping.
6. Moving level model.
7. Background modelling.
8. Enemy parasites with simple AI. Player has to avoid walking into them.
9. Throwing eggs (player louse and enemies).
10. Close hair strands. Only for decoration, no interaction yet.
11. Distant hair strands.
12. End boss fight.
13. Game scenario: Time race.
14. Game scenario: Collecting hidden eggs.
15. Game scenario: Victim scratches itself.
16. Game scenario: Under water/In the air.
17. Anti-lice shampoo. The louse movement is not affected by the liquid yet.
18. Walking into the anti-lice shampoo causes the louse to move with the liquid.
19. Interaction with the hair strands.
20. Multiplayer option.

Assessment

The main point of “Parasite Paradise” is the fact, that the level is moving. In contrast to a static landscape, the player is challenged by estimating the right time to jump depending on the movement of the ground he is standing on at the moment.
The game contains action, as the player has to defeat enemy parasites by throwing eggs at them. There are also adventure elements since the player has to search the creature for weak points he can suck blood from. Furthermore he has to complete tasks such as collecting hidden eggs or winning a race against other parasites.
Crawling over a huge body which is inhabited by a whole civilisation of parasites should give the player the chills and a unique game experience.

Next Planning Steps

- feedback from an assistant
- review targets and task list and update project proposal
- estimate task duration time
- distribute the tasks among us