Itzamná's Heritage

Mayan Red Light

Formal Game Proposal

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1   Game Description

1.1   Idea

Our game is derived from a childhood game called 'Red Light'. It is based on the idea of a traffic light, where you are not allowed to move, when the red light shows up.

At the start of the game, all players line up at a certain distance from the guard symbolizing the traffic light (see figure). The goal of the game is to reach the guard before the others do while not being caught moving.
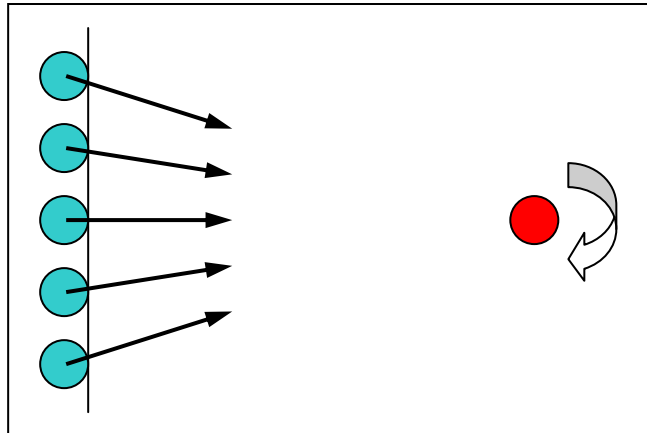
When the game begins, the guard faces away from the other players and waits a random amount of time before he quickly turns around. All the players have to immediately freeze in position. The guard checks if any of the players is still moving. If so, he sends him back to the starting line. Then he turns around again facing away from the players and the game continues.

Based on that underlying idea, we added various elements to make the game more interesting on a console. These elements are described in more detail throughout the document.

1.2   Relation to Course Theme / Storyline

375 B.C.: The legend about the magical treasure of Itzamná – the Mayan creator deity - that got lost on a visit on earth is known by every child. No one knows its exact locations and the myth says that it is guarded by a mighty warrior, since the treasure cannot be brought back to the deities' divine shrine. Its unmeasurable value has tempted thousands of people to start a treasure hunt for it of which all ended without success... until one day, deep in the jungle, a mystical palace was discovered, a kind of royal temple, resembling a pyramid, an almost indescribable construction. It attracted many treasure hunters who strongly believed it to be the well-hidden location of Itzamná's treasure. They thought it would be a child game to claim the treasure for themselves, but none of them ever returned...

This is the general setting of our game. The players take over the role of the treasure hunters which try to circumvent the guard to claim Itzamná's heritage.

1.3   Gameplay

The fun part of the game is that the players have to freeze in the exact position they were caught in, so sometimes it is quite difficult to balance and maintain the exact position.
Another element of fun is that each player can decide between going fast but risking to not be able to stop in time if the guard turns around or to take it slower but risking to be overtaken by his opponents.

We plan to bring this dilemma of speed vs. risk in our game, as well as the balancing factor during the phase when the guard is checking for movement.

To make the game more interesting and to add more interaction between the approaching players, there will be power-ups in our game which are described in more detail in a later section. They allow the players to influence the behavior of the guard as well as to slow down or somehow else hinder the opponents in reaching the goal.

To get the element of balance in the game without it seeming far-fetched and not very interesting, we decided to flood the scene with water, which is of varying depth, and add a current to it. So in order to maintain the position if the guard is checking, the players will have to struggle against the current to appear immobile.

The game idea supports a large amount of players since the number of players trying to reach the guard is only limited by practical considerations. In our case we implement the game for two to four players which are playing locally on one Xbox 360. More players could be added by using network play, which is planned in our fifth layer 'Extras'.

1.4   Power-Ups

As we have already explained we would like to implement several power-ups the players can use in order to gain advantages over their opponents. The possibilities are endless, but we already have some ideas about interesting items:

- Throw objects at other players or the guard
  - o May cause the target player to struggle and fall or if thrown at the guard may cause the guard to turn around and check for players moving.
- Get control over guard
  - o Makes a player able to let the guard turn around with a push of a button. This does not however remove the ability of the guard to turn around on his own.
- Get invisible
  - o Turns a player invisible, making it harder to control on one hand, on the other hand, if the player is walking slowly, he may move while the guard is checking.
- Boost your speed
  - o Increases the run speed of a player for a short period of time. The drawback is that because the run speed is increased, the time to come to a full stop is increased as well and may lead to detection by the guard.
- Slow down opponents
  - o Slows down the selected opponent. This reduces his movement speed but makes balancing easier for the affected player.
- Confuse opponents (inverse control directions)
  - o Reverses the controls for the selected opponent. If the controller stick is pressed in forward direction, the player will move backwards. The same goes for the left and right direction.
- Crawl/dive underwater
  - o The player will be able to swim under water for a short period of time. Although he may move slowly while the guard is checking, the water current affects the player much more since he is no longer standing on the floor.
- Freeze other players
  - o The selected opponent is frozen in place for a short amount of time. After the freezing period, his balancing will be easier and movement speed increased.
- Smoke grenade
  - o A smoke grenade is thrown at the target location which may block the line of sight of the guard. It is not guaranteed that the sight of the guard is completely occluded.
- Float on water (less friction)
  - o A floating device helps the player to gain a higher movement speed if the current is from behind but hinders the movement speed if the current is flowing from front. Balancing difficulty is increased.

- Point laser at others (use mirror)
    - Points a laser pointer at an opponent to blind him. The opponent may react by holding a mirror in your beam and reflect the beam back at the attacker or forward it to another opponent. If a player is blinded, it is much more difficult to balance in the water.
- Call upon the force of gods
    - Gain immunity of being noticed by the guard since the guard recognizes the player as a deity. This lasts only for a short period of time. After this time, the guard notices that he has been fooled and concentrates his gaze on the player which allows the other players to move at a slow pace even when the guard is watching.
    - Meteor shower on the playing field that cause huge waves which affect the balancing of all nearby players.

These items may be collected on the playing field or they can be brought in the treasure hunter's backpack. Each player can chose his starting power-ups before the game begins.

1.5 Technical Computer Graphics Item

Our technical element is the water and flow simulation which affects the players and is affected by the player and the environment (i.e. obstacles).

We use the current of the water simulation to influence the movement of the players to increase the difficulty of standing still or aiming at an opponent.

2 Development Schedule

2.1 Layers

2.1.1 Functional Minimum

At this stage we aim to achieve a minimal and playable version of the game which also builds the basis for subsequent improvements. Playing is probably not yet fun and releasing at this point would be completely dissatisfying.

Gameplay
- basic playing field (no water yet) with only a simple plane and a target point of interest
- two controllable players who are able to walk and stand still
- immobile guardian with randomly executed look-up actions
- basic game logic

Graphics
- abstract models for guardian and player

Others
- empty intro and menu screens
- fixed camera which overviews the playing field

At this point the only thing players can do is walk and stand still over and over again until they reach the Mayan treasure. This is actually the 1-to-1 realization of the real-life game without any extensions.

2.1.2 Low Target

Having successfully completed layer two, we would have a playable version with which we would not really be happy with, but would not have to be entirely embarrassed to present it either.

Gameplay
- introduce a first basic player interaction (throwing stones at each other)
- introduce obstacles
- introducing need to balance when standing still
- improved punishment logic for players being caught

Graphics
- fluid simulation for play ground (without interaction with obstacles/players)
- basic models for players, guard and obstacles (including textures)
- model for pyramid
- environment

Others
- collision handling
- GUI
- implemented menu screen

Introducing the first player interaction is supposed to provide the first fun-element. Players can throw stones at each other which may make the victim move and getting 'punished' by the guard. However, only throwing stones and balancing out for the still-standing is not what we are aiming for. The main improvement at this stage is in the visual area by adding real models, environment and water simulation.

2.1.3 Desirable Target

That's what we are aiming for: A visually satisfying version with fun game elements which we are proud to present

Gameplay
- various power-ups (see separate list in game description)
- balancing the game elements (starting positions, obstacles, guard KI, power-ups)
- backpacking / loadout screen (bring offensive or defensive items on trip)
- extend game to four players
- water affects gameplay
- controls / aiming

Graphics
- introduce water flow
- animated models (guard, players)
- environment improvement
- shading techniques (bump mapping, environment mapping)
- Level of Detail (if necessary for game speed)

Others
- sound effects and background music

At this stage, it should really be fun to play the game including some visual delicacies to improve the overall experience. In addition, well-balanced game items and game play should provide a stickiness factor such that players become addicted to the game.

2.1.4 High Target

If we still have some time left, we are excited to add additional game play elements, graphical effects, a bigger story setting and a main theme music for our game.

Gameplay
- more complex power-up mechanics
- add player profiles for character progression (storable/loadable)
- several characters with different basic traits (speed, strength, dexterity, ...)
- controllable guard
- extended game play (carry treasure back to base while being chased by other players and guard)

Graphics
- sinks and vortices in flow field
- explosion effects

Others
- provide a tutorial for the players
- more levels / different sceneries
- main music theme
- more extensive story

These additional game elements can be implemented to further increase the fun factor.

2.1.5 Extras

Well, it's nice to have some more ideas to improve the game... but let's stay realistic, that is definitely not feasible in our available time in addition to the other layers.

Gameplay
- more complex game mechanism for power-ups, combined forces etc.
- single player campaign
- multiple guards
- guard AI which adapts to player behavior

Graphics
- general graphical improvements
- nicer models
- water / wind interaction
- deformable terrain

Others
- support for network play with more than four players
- procedural map generator
- online rankings/tournaments
- sell the game to Blackrock Studios and enjoy life. :-)

2.2 Task List / Timeline

	Course Milestones		Thomas	Silvan	Marcel
08.03.	- Formal Game Proposal (Draft) (10/ 10) - Mutual Project Critiques (1/ 1)				
15.03.	- Formal Game Proposal (Final) (3/ 4)	Layer 1	- software architecture (5/ 0)	- software architecture (5/ 0)	- software architecture (5/ 0)
22.03.	- Prototype chapter (5/ 0) - Presentation (2/ 0)	Layer 1	- basic scene (10/ 0) - basic player models (8/ 0) - basic guard (8/ 0)	- control (two player) (10/ 0) - game start (5/ 0) - basic camera handling (static) (5/ 0)	- AI guard (incl punishment of players) (10/ 0) - intro/menu screen (10/ 0)
29.03.		Layer 2	- shallow water simulation (20/ 0) - improved models (10/ 0)	- collision detection (20/ 0) - simple player interaction (10/ 0)	- shallow water simulation (15/ 0) - GUI / HUD (15/ 0)
05.04.		Layer 2	*Easter Holidays (reserved buffer)*		
12.04.		Layer 2	- improved fluid simulation (15/ 0) - landscape/scene (15/ 0)	- 4 player extension (10/ 0) - aiming interface for power-ups (5/ 0) - enhanced shading (20/ 0)	- first power-ups (e.g. stone throw) (15/ 0) - balancing effect of power-ups (5/ 0) - enhanced shading (10/ 0)
19.04.	- Interim Report (5/ 0) - Presentation / Game Demo (5/ 0)	Layer 3	- animated models (20/ 0)	- interaction water/players (i.e. balancing) (20/ 0)	- enhanced punishment by guard (10/ 0) - backpacking screen (10/ 0)
26.04.		Layer 3	- textures (15/ 0) - obstacles (10/ 0)	- textures (20/ 0)	- sound effects (15/ 0) - background music (10/ 0)
03.05.		Layer 3	- bugfixing (10/ 0)	- store/load player progression (10/ 0) - bugfixing (10/ 0)	- improve power-ups (10/ 0) - bugfixing (10/ 0)
10.05.	- Alpha Release (10/ 0)	Layer 4	- extended gameplay (10/ 0) - other layer 4 features (10/ 0)	- controllable guard (10/ 0) - other layer 4 features (10/ 0)	- extended gameplay (10/ 0) - other layer 4 features (10/ 0)
17.05.	- Playtesting (20/ 0)	Layer 4	- bugfixing (20/ 0)	- bugfixing (20/ 0)	- bugfixing (20/ 0)
01.06.	- Public Presentation (15/ 0)	Layer 4			
04.06.	- Conclusion Chapter (5/ 0) - Final video (10/ 0)	Layer 4			

3 Assessment

3.1 Main Strength

The main strength of 'Red Light' is the implementation of a simple real life game into a fun and addictive computer game. The rules and concept are totally easy to understand and though it needs some experience to bring the power-ups to best use. The fact that each game develops differently due to the various possible player actions will create the challenge anew in every single game instance.

A game instance is supposed to only take a few minutes and the winner can be challenged for a revenge immediately which provides an incredible stickiness factor making the game addictive.

As in many popular games, it is easy to learn, but hard to master (if you want to win every single instance)!

3.2 Coolest Element

In addition to the strengths, one of the coolest, funniest things is the fact that you can hinder and thwart the efforts of the other players in a playful way. Such you can prevent them to reach the treasure and at the same time try to avoid the dirty tricks of the others used against you.

Out of own experience, we can assert that these kinds of teasing actions are a huge fun factor which lasts for whole evenings, especially if you turn it into a drinking game. :-)

3.3 Target Audience

The target audience of our game are casual players which want to play a game that does not require a lot of time and knowledge to get the idea and allows them to playfully battle against their friends.

Our game does not require a lot of gaming experience to be reasonably good at playing the game, which is in our eyes a huge advantage.

On the other hand, someone investing more than average time in the game may outperform other players because of deeper knowledge of the power-ups and their synergies as well as having created and tested some strategies to beat other players.

3.4 Judgment Criteria

The game is a success if we achieve that the players show eagerness for revenge and enjoy playing the game repeatedly.

Our game is based on the real-life game which should be visible as the basis in our game. The main focus tough lies in the extension of the basic gameplay to increase the replayability and longevity by letting the motivation to replay the game grow through the introduction and amplification of playful rivalry amongst the players.