Product Planning

Games Context Group 1 (a.k.a. Funky Donkey Studio)

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Introduction

Standing in a queue, a boring experience. Everybody knows what it's like and probably does it a few times a day. In fact, the average person spends 273 days of his life waiting in line![1](swns,2012) We are designing a game that will completely change the way people experience a queue. The game will allow you to use your body manipulate a curve on which a ball will roll. Queue participants will have to work together to reach targets and avoid obstacles.

When you reach a certain part of the queue you will see a screen with a curve and balls rolling over it. Together with people next to you, you will be able to create a slope that the ball will roll over, allowing you to guide the ball downwards or launch it into the air. As your position in the queue changes, the part of the curve that you can influence will also change. When you reach the game area, you can instantly join in. And when you leave the queue the game will go on with the people behind you. The difficulty of the game increases or decreases based on player performance (i.e. scoring combo's) to keep things interesting and to provide an opportunity for new players to experience the game at the appropriate level.

The setup of our game is rather specific and constrains the amount of queues where it can be played. It can be properly setup in a location where the camera can be placed in a position such that it has a lateral view of the queue and minimizes the amount of background movement in the camera FOV. Since the highest detected points form the wave the camera could be placed lower than the average queue participant's height and angled backwards slightly. This would make people walking behind the queue less of a problem as from its viewpoint, the camera sees them as being lower than the queue participants. A possible location for the game could be an indoor theme park hallway queue. Besides from making the line seem shorter the game would provide participants the opportunity to get to know the people they will share the ride with. Making the whole experience a lot more fun.

Product

High-level product backlog
We have structured the product backlog according to the MoSCoW method as follows:
-**M**ust have features. Minimal features required for the game to be playable
-**S**hould have features. The game should have all these features, but is technically playable without them
-**C**ould have features. These features can be implemented to make the game more fun, but can be scrapped if the project timeline of budget comes under pressure
-**W**ould have features. If an extension for the game is ever developed, or if we have more time than planned, these features would be implemented first.

Must have
- As a user I want to be able to use my body to manipulate the wave
- As a user I want to be able to influence the balls' trajectories by manipulating the wave, so that the targets can be hit
- As a user I want physics to be available in the game to affect the object rolling on the wave so that it rolls, falls bounces etc.
- As a user I want new balls to continuously spawn at the start of the screen so I can play the game continuously with a never ending stream of balls.
- As a user I want to be able to play the game alone or with a variable amount of players
- As a user I want to have certain goals (targets) that I want to hit, so I can build up combos, which influence the game (e.g make it harder, increase the spawn count, etc.)

Should have
- As a user I want to see the state of the game on screen (combo count, game difficulty) so that I know how well I'm playing
- As a user I want there to be obstacles that hinder the movement of the ball to give a challenge to the game
- As a user I want to be able to score a combo by hitting multiple targets in a row, which increases the difficulty
- As a user I want to be able to lose the combo progress that was achieved when a target is missed, which lowers the difficulty and resets the counter so that I can start over trying to make a combo
- As a user I want audio and visual feedback on the state of the game, like cues when I maintain or lose a combo
- As a user I want the game to be aesthetically pleasing, including proper lighting, vibrant colors and interesting environments so that the game is visually attractive
- As a user I want the game to have a clear and visual theme that makes the game easy to understand and nice to look at

Could have

- As a user I want to play with more people than the amount of people that fit on one camera view at the same time, meaning multiple cameras are used and combined in one game
- As a user I want to be able to activate several different power ups that change the game in a fun way.
- As a player I want to see myself on screen influencing the wave to make it clear how exactly I have influence on the wave

Would have

- As a player I want to be able to connect to the game with my phone and see the current game

Roadmap

	Gameplay	Art	Human Interaction
Sprint #2 1 - 8 May	As a user I want a ball colliding with a wave		As a developer I want to create a wave from several control points
	As a user I want new balls to continuously spawn at the start of the screen		As a developer I want to generate an image description of the silhouettes of the players
Sprint #3 8 - 15 May	As a user I want to have certain targets that I want to hit		As a user I want the wave to change smoothly
	As a user I want there to be obstacles that hinder the movement of the ball		As a user I want the wave to have a natural shape (smooth)
	Custom physics movement, with balls always rolling in one direction (even when hitting a hill)		As a developer I want debug controls through which I can manipulate the wave
Sprint #4 15 - 22 May	As a user I want targets to have an influence over the combo count	As a user I want the HUD to display important information like the combo count	As a user I want the highest points dataset to be interpreted, and the wave to be generated
			As a developer I want the camera detection to detect the highest points of the silhouette description, and generate a dataset
Sprint #5 22 - 29 May	As a user I want to be able to score a combo by hitting multiple targets in a row, which increases the difficulty	As a user I want the game to have a clear theme that makes the game easy to understand	
Sprint #6 29 - 05 May/June	As a user I want to be able to activate several different power-ups that become available when reaching certain combo counts. These power-ups change the game in a fun way	As a user I want audio and visual feedback on the state of the game, like cues when I increase or lose a combo	
Sprint #7 05 - 12 June		As a user I want the game to be aesthetically pleasing, including good lighting and interesting environments	
Sprint #8 12 - 19 June			As a user I want to play with more people than the amount of people that fit on one camera view at the same time (multiple cameras)
Sprint #9			

19 - 26 June			7
Sprint #10 26 - 03 June/July			

Product Backlog

User stories of features

- As a user I want to be able to use my body to manipulate the wave
- As a user I want to be able to influence the balls' trajectories by manipulating the wave, so that the targets can be hit.
- As a user I want physics to be available in the game to affect the object rolling on the wave so that it rolls, falls, bounces etc.
- As a user I want new balls to continuously spawn at the start of the screen so I can play the game continuously with a never ending stream of balls.
- As a user I want to be able to play the game alone or with a variable amount of players
- As a user I want to have certain goals (targets) that I want to hit, so I can build up combos, which influence the game (e.g make it harder, increase the spawn count, etc.)
- As a user I want to see the state of the game on screen (combo count, game difficulty) so that I know how well I'm playing.
- As a user I want there to be obstacles that hinder the movement of the ball to give a challenge to the game.
- As a user I want to be able to score a combo by hitting multiple targets in a row, which increases the difficulty.
- As a user I want to be able to lose the combo progress when a target is missed, which resets the difficulty and the counter so that I do my best not to miss any targets.
- As a user I want audio and visual feedback on the state of the game, like cues when I maintain or lose a combo.
- As a user I want the game to be aesthetically pleasing, including proper lighting, vibrant colors and interesting environments so that the game is visually attractive.
- As a user I want the game to have a clear and visual theme that makes the game easy to understand and nice to look at.
- As a user I want to play with more people than the amount of people that fit on one camera view at the same time, meaning the use of multiple cameras is needed to view the whole line of players.
- As a user I want to be able to activate several different power ups that change the game in a fun way.
- As a player I want to see myself on screen influencing the wave to make it clear how exactly I have influence on the wave.
- As a player I want to be able to connect to the game with my phone and see the current game

User stories of defects

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User stories of technical improvements

- As a user I would like the camera detection to work on various backgrounds so that there are less constraints on where the game can be played.

User stories of know-how acquisition

- As a developer i want to study the jMonkeyEngine documentation so that I have a better understanding of the game engine. Pertaining:
  - audio
  - graphics
  - physics + collision
- As a developer I want to read up on camera detection algorithms (openCV) so that i can use this in the game to detect people's heights

Initial release plan

For our initial release (version 1.0) the basic features of our game are fully implemented. At this stage the game should be working good and it should also look nice. Our objective is to make the first version of the game in a total of 7 weeks / 7 sprints.

There are a few features that aren't in the initial release. We do think that these features are a great addition the game but aren't required to make an fully functional entertaining game. At the moment the 3 features that aren't planned for the initial release are the following features:

1. *multiple camera's.* With this feature more people can play the game at the same time. It is fun to play the game with more players, however it is not mandatory for our first release.
2. mobile devices support. With this feature it will be possible to see the game on a mobile device. This is a really useful feature as the screen displaying the game might not always be that easy to see in some environments. In most cases the screen will be easy to see so this feature is not in our first release.
3. see yourself on the screen functionality. With this feature participants can see themselves in the game influencing the wave. This feature doesn't really add more to the game other than more clarification, that is why this feature is for the second release.

Definition of done

Feature level
- ❏ Passing tests (and > 75% coverage)
- ❏ All tools (PMD, checkstyle, findbugs) report 0 errors/warnings.
- ❏ Documented code (javadocs & comments)
- ❏ All feature-specific acceptance criteria pass (basically all tasks are implemented)
- ❏ Merged feature has been play-tested

Sprint level
- ❏ Play-tested newest build
- ❏ No known game-breaking defects
- ❏ All scheduled user stories/tasks are either implemented or deferred to the next sprint
- ❏ Architecture design (EAD) document has been updated

References

[1] (SWNS, September 2012) "Wait in line: Nearly a year of our life is spent in QUEUES"
http://swns.com/news/wait-in-line-nearly-a-year-of-our-life-is-spent-in-queues-24514/