

Game Proposal (Final)

Game Programming Lab 2016

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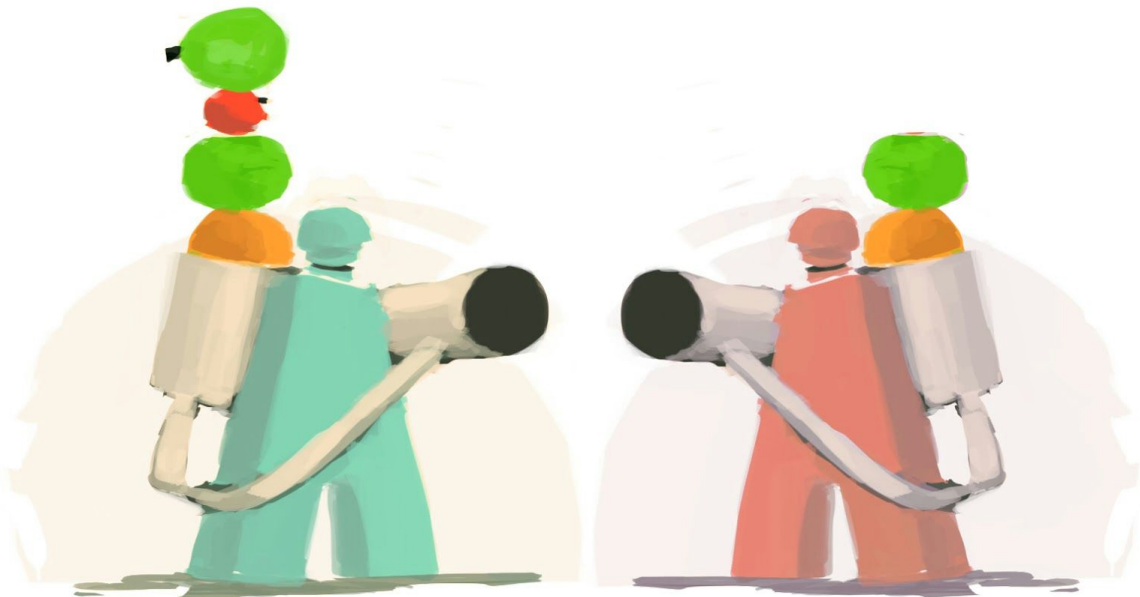
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Game Description

Overview

Fruit Strike is a 3D action shooter where the player has to collect food items while shooting his opponents and avoiding being shot at the same time.

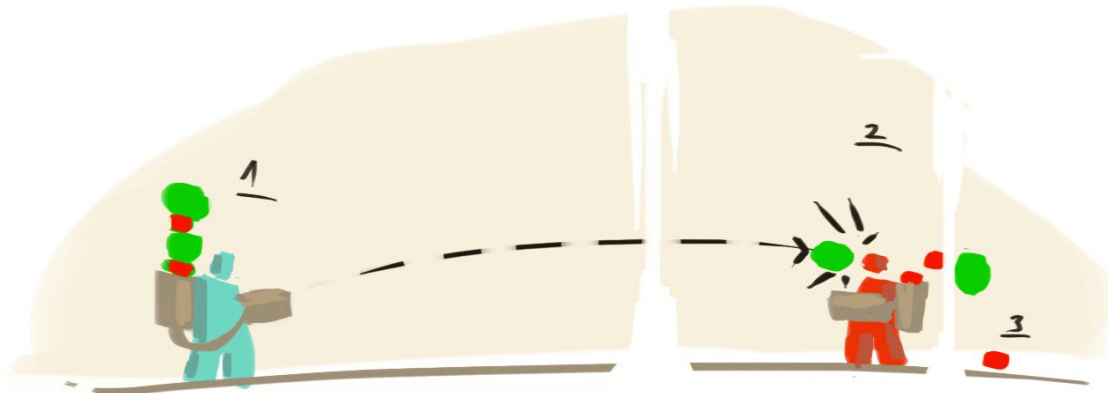
Food items (such as apples, bananas or melons) spawn at different locations on the map and can be picked up by walking over them. The player can use collected food items as ammunition to shoot at the other players.



Game Mechanic

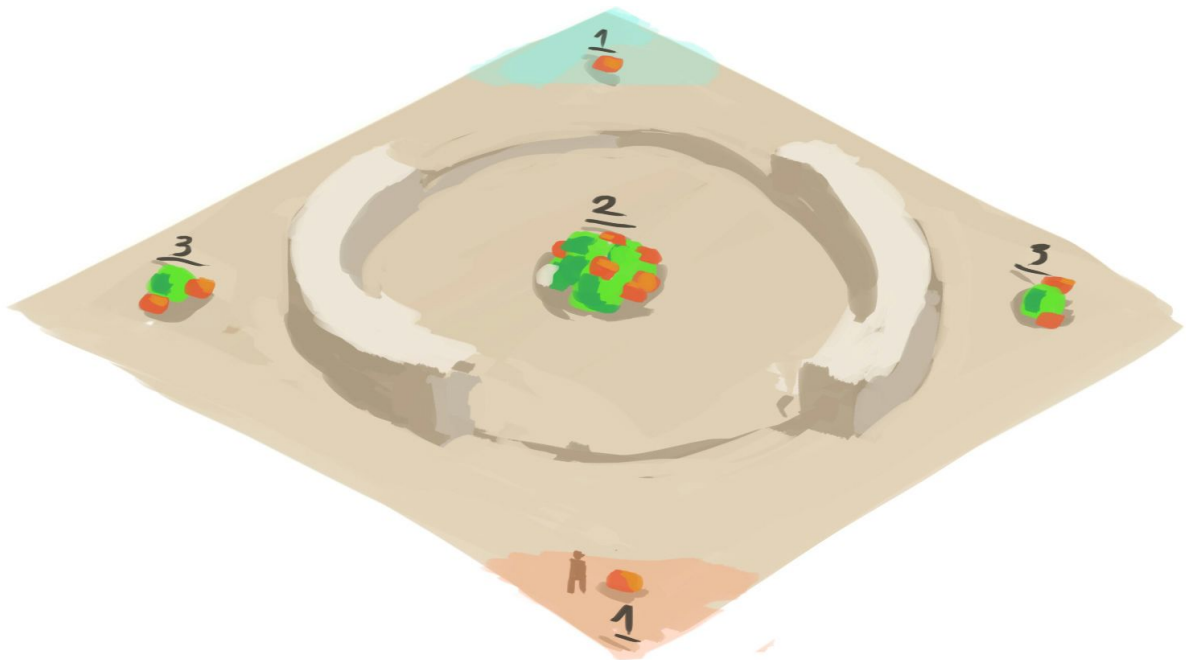
We plan to have a set of different sorts of food items, each having specific properties such as value and attack strength. Those food items can spawn at multiple locations over the map.

When a player is hit he loses some of the collected items in his inventory. The exact amount depends on the size of the inventory according to the attack strength of the food item with which he is hit. The inventories of the players are unlimited, i.e. they can carry as much food as they want. However, a good player will have to find a balance between having enough ammunition and not having a too large inventory since a successful hit will yield more points for the enemy. The player who shot receives points for a hit plus bonus points for every item his opponent drops.



Possible scenario when two players engage in a fight:

1. The blue player has a variation of food items he can use as ammunition.
2. If the red player gets hit, he loses some of his food items.
3. The players can collect the food on the ground.



Example design of a map
with spawn locations of the players (1),
primary food stock (2) and secondary food stocks (3)

Food Items

Apples are the most common items and are used to directly shoot at the opponent.

The **banana** is thrown like a boomerang. It launches in a straight line and returns to the player if no enemy (or obstacle) has been hit.

A **melon** works like a bomb. It blows up a couple of seconds after being fired.

Peanuts are fired like shotgun shells. They have limited accuracy and a limited range.

An **orange** serves as a temporary shield protecting the player for a short amount of time after being activated.

Gameplay

Fruit Strike is a local split screen multiplayer game for up to 4 players. The player's character is controlled from a third person perspective and can look and walk in all directions. Furthermore, the player can rotate through the different kinds of food items in his inventory to equip them as his weapon. Usually, the thrown items will follow a parabolic curve in space.

Goal

The game is time-based, i.e. after a certain amount of time the game ends and the player with the most points wins the round. Therefore, the individual goal of each player is to shoot his enemies as many times as possible and cause them to drop food.

Platform

We will support Windows and Mac OS X as deployment platforms. However, as the game will be played with a controller (e.g. PS4 or Xbox) it is possible to deploy it on console platforms as well in the future.

Technical Achievement

We consider the ability to smoothly control the player through the world a very critical point in our project as it directly impacts the fun of the game and therefore plan to write a simple physics engine tailored to the needs of our game.

Big Idea Bullseye

The main idea behind Fruit Strike is the combination of the classic shooter concept and collecting items. Neither pure shooting skills nor a strategy in efficiently collecting food alone make a good player, only a good combination of both does.



Project Scope

The ideas and features we collected have been sorted into layered categories sorted from absolutely crucial to nice-to-have extras.

Functional minimum

- Gameplay
 - Controllable player that can pick up and shoot food items.
- Food items
 - Apples
- Controls
 - Camera control/ User control with controller.
- Shooting / aiming mechanics
 - Thrown items follow a straight line.
- Map design
 - A simple, empty map
 - A few obstacles without collision detection
 - A simple spawn point for food (no appealing visuals)
- Animation
 - Static player models
- Gameplay
 - Pick up food items by walking over them

Low target

- Gameplay
 - Playable by up to four players
 - Game ends after two minutes.
- Physics engine
 - Basic collision detection between players and obstacles
- Food items
 - Melons
 - Bananas
- Map design
 - A small map with simple objects (buildings) forming something like streets
- Animation
 - Walking animation for player models
- Music & Sound
 - Simple sound effects: Getting hit, Picking up items, Throwing items.
- HUD & Menu
 - Menu: Possibility to pause or end the game
 - Icon for currently selected food item
- Gameplay
 - Player loses random amount of items when hit.

Desirable target

- Physics engine
 - Fired items follow a parabolic trajectory and can bounce off walls and obstacles.
- Food items
 - Peanuts
 - Oranges
- Map design
 - Textured and diverse building models
- Animation
 - Animated player models: Aiming, Throwing / Shooting
- Music & Sound
 - Background music
 - Different hit sound effects for individual food items
 - Walking sound
- HUD & Menu
 - Select level
- Gameplay
 - Food has weight and makes players move slower.
 - More food makes players lose more when hit.

High target

- Gameplay
 - Dropped food is scattered in random direction / distance.
 - Food rots after a while, if it is not picked up by anyone.
- Map design
 - Additional map(s) to offer a variety of environments
- Animation
 - Visual effects (e.g. splash effect when a player gets hit)
- HUD & Menu
 - Change settings (resolution, music/sound, controller)

Extras

- Additional game mode: Deliver food to base
- Network multiplayer
- NPCs

Project Plan

We maintain a Google Docs spreadsheet in which we keep track of all tasks and milestone dates and compare the planned timeline with the one achieved in reality.

What	Who	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20	W21	W22
Presentations & Assignments																
Brainstorming / Formalize game idea for pitch	JF, SL, SR, DS															
Presentation: Pitch of game idea (01.03.2016)	JF, SL, SR, DS															
Game proposal: Draft (07.03.2016)	JF, SL, SR, DS															
Game proposal: Final version (14.03.2016)	JF, SL, SR, DS															
Paper prototype	JF, SL, SR, DS															
Presentation: Game proposal and paper prototype (22.03.2016)	JF, SL, SR, DS															
Presentation: First playable demo (05.04.2016)	JF, SL, SR, DS															
Presentation: Interim demo (26.09.2016)	JF, SL, SR, DS															
Presentation: Alpha release demo (10.05.2016)	JF, SL, SR, DS															
Presentation: Playtest results (17.05.2016)	JF, SL, SR, DS															
Presentation: Final game (31.05.2016)	JF, SL, SR, DS															
Functional minimum																
Create static player models	DS															
Create model of apple	DS															
Camera / player control	JF, SL, SR															
Create simple map with spawn point	SL															
Implement picking up and shooting	SR															
Low target																
Add splitscreen / multiplayer support	JF, SL															
Basic collision detection	JF, SL, SR															

Extract from the project plan (blue: planned, green: actual)

The project plan is a dynamic document and is being updated as we progress with the project. It can be read by anyone and is accessible via the following link:
https://docs.google.com/spreadsheets/d/1kSC_-6Fpb9hnY9kOgc5clv_Ttj21lx7IkFuBN-BGiyA/edit?usp=sharing

Assessment

We want Fruit Strike to be an action-packed fun shooter that stands out in its way of combining combat action with strategic elements of collecting the right items and avoiding to be attacked by opponents.

The handling of the game should be easy to learn and appeal to game novices as well as experienced players.