Food Fight

The Foo Fighters

September 24, 2013

v 2.0

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14. Game Overview
    1. Game Concept
       1. Food Fight is a single player, arcade style target game for mobile phones which allows the player to make their fantasies of being part of a food fight a reality by turning the idea of a food fight into a challenging and creative game. The game will follow an angsty teenager, *Snack*, getting revenge on his classmates at school by starting food fights with them. The gameplay will allow the player to control Snack in an over the shoulder shooting gallery game. Enemies will duck, dodge, and throw food from behind tables, counters and desks in various locations throughout the school including the cafeteria, study hall and even prom. Throughout the course of the game Snack will also find bonus foods that deal more damage and provide perks including splatter and stickiness.
    2. Feature Set
       1. The main character is able to throw food at enemies, destroy incoming food being thrown at him and also pick up power ups to use against the bullies during the game.
    3. Genre - Arcade
    4. Target Audience
       1. The audience consists primarily of young adults to preteens.
    5. Game Flow Summary
       1. The player will start at a main menu where they can either start the game, change options, view the controls, or quit the game.
       2. Starting the game will prompt the player to select a level to play.
       3. Following the level selection the player will go to a loadout screen where they will be asked to choose 5 food items that they will have in their inventory.
       4. The player moves through the game by achieving a certain target score of 5000 points in each level. In order to reach this score the player must use their limited inventory of food to hit as many enemies as they can in the allotted time limit of 90 seconds. Each enemy has a health bar that decreases with each hit depending on the specific food item they are hit with.
       5. Once the player achieves the target score, the player will be notified on screen and sent to a success screen. If unsuccessful the player will be asked if they want to replay the level and modify their loadout.
       6. Before loading the next level the player is given the opportunity to modify the selection of food they have to throw. During the loading sequence a short cut scene showing the player entering the environment will be played.
    6. Look and Feel
       1. Assets will have a stylized cartoon appearance.
       2. Bold colors and easily distinguished characters, foods and backgrounds.
    7. Project Scope
       1. There will be three different levels that the food fights take place in.
       2. Three different types of NPC’s with variations in coloring.
       3. Food Items to be thrown at NPC’s.
15. Gameplay & Mechanics
    1. Gameplay
       1. Game Progression
          1. Player moves on through the game by achieving the target score in each level.
       2. Mission/challenge Structure
          1. The primary challenge in the game would be to get the target score each level. This challenge is completed through the hitting of enemies with food items.
          2. The secondary challenge comes from getting a high score, which is set by previous playthroughs.
       3. Puzzle Structure
          1. Time limit on levels
          2. Food limit on levels
          3. Destroy incoming enemies food
       4. Objectives
          1. The main objective of the game is to achieve the set target score for the level.
       5. Play Flow
    2. Mechanics
       1. Physics
          1. Physics in the game would include the actual food being thrown during the game. Gravity will cause the foods to fall at different speeds, depending on the size of the object. Larger objects will move slower, while smaller objects will move faster.
       2. Movement
          1. General Movement
             1. The player will move left and right across the screen. This will done by either tilting the device left or right, or dragging the player across the screen.
             2. Enemy NPCs will duck behind cover and move left and right behind their cover.
       3. Power-Ups
          1. Power-Ups
             1. Energy drink

Allows character to move and throw much faster

* + - * 1. Pea Gun

Similar to a machine gun with an automatic mechanic

* + - * 1. Popsicle

Temporarily freezes enemies for 5 seconds

* + 1. Actions
       1. Throwing food
          1. Player can throw food at enemies by swiping across the screen towards the enemy they’re trying to hit.
    2. Combat
       1. The only combat involved in the game would be the actual food fight.
    3. Economy
       1. The game will have allow players to pay to unlock food items and levels if the player doesn’t wish to play through to unlock the items.
          1. Food items will cost $0.99 for basic foods, and $2.99 for special food items that contain special abilities along with additional damage.
          2. Access additional levels would cost $1.99.
  1. Screen Flow
     1. Screen Flow Chart
     2. Screen Descriptions
        1. Main Menu Screen
           1. Start screen
           2. Level select
           3. Options
        2. Options Screen
        3. Other Screens
           1. Win & lose screen
           2. High score screen
           3. Target score screen
           4. Quit & start game screen.
  2. Game Options
     + 1. The player can choose to either tilt the device or touch and drag to move the character left and right.
     1. Sound Controls
        1. The player can control the volume levels of the sound effects and music independently of one another.
  3. Replaying and Saving
     1. At the end of every level the game will save the score.
     2. The player will be given the option to replay levels to increase their highscore for the level.

1. Story, Setting, Character
   1. Story and Narrative
      1. Back Story
         1. The main character is a high school student who is constantly bullied every day. Every day he dreads going to school and facing these bullies. He has never stood up for himself until one day he finally decides to fight back against the bullies.
      2. Plot Elements
      3. Game Progression
         1. The game progresses as the player defeats bullies in various locations. The player will have to achieve a target score to move on.
      4. License Considerations
         1. Prior to distribution, an iOS educational license will be required
      5. Cut Scenes
         1. Cut scene #1
            1. Actors

Snack (Player)

Pizza Face (Bully)

* + - * 1. Description

Location - Cafeteria

The first cutscene takes place inside of the school cafeteria. The cutscene will begin with the main character “Snack” walking into the school cafeteria. As he makes his way into the cafeteria, he is hit with a slice of pizza. Snack looks across the cafeteria and see’s “Pizza Face”, who has been bullying him all year. Snack finally decides to stand up for himself and throws the slice of pizza back at him and the cutscene ends, which starts the gameplay.

* + - 1. Cut scene #2
         1. Actors

Snack (Player)

Rad Tish (Bully)

* + - * 1. Description

Location - Study Hall

The second cutscene takes place inside of a study hall. The cutscene will begin with the main character “Snack” sitting in study hall and studying his notes. Snack then feels something hit him in the back of the head and he turns around to see who threw something at him. He see’s “Rad Tish” , who is another bully who’s been bullying Snack all year. She throws her sandwich at Snack but he grabs it before it hits him and smiles. The cutscene ends, which starts the gameplay.

* + - 1. Cut scene #3
         1. Actors

Snack (Player)

“Big” Mac (Bully)

* + - * 1. Description

Location - Prom

The third cutscene takes place at the school prom. The cutscene will begin with the main character “Snack” at prom, leaning against a wall by himself and drinking fruit punch. As he’s about to take a sip from the cup, a piece of fried chicken hits his cup and knocks it out of his hands. Snack looks to the left across the room and see’s “Big” Mac, who is another bully who’s been bullying Snack all year. Frustrated, Snack decides he needs to end this once and for all. He grabs a handful of cake and the cutscene ends, which starts the gameplay.

* 1. Game World
     1. Each level is set in the same game world, just different locations. The overall game world is a High School and each level is a different location the player encounters during the game.
     2. General look and feel of the world
        1. Stylized cartoon look with bold colors
     3. Beef Wellington High School
        1. The game world is a stereotypical high school. Many different stereotypes within the school, variety of teachers and large amounts of drama. Many students can’t seem to get along in this school.
        2. Physical Characteristics
           1. Large school; Many classrooms
           2. Negative atmosphere
           3. Cool colors in the design
        3. Levels that use area
           1. Cafeteria Level
           2. Study Hall Level
           3. Prom Level
  2. Characters
     1. Character #1 - Snack
        1. Snack is no stranger to food warfare. He’s been in food fights before and knows the game inside and out.The name Snack is given to the main character because it reflects food and delivers a simple basic name.
        2. Snack is a quiet teenager who keeps to himself. He never goes out of his way to make conversation but is extremely wise and cunning. His true colors come out when he gets involved in food fights and the warrior within is released.
        3. Snack encompasses the full on soldier appearance complete with headband, cut off shirt, carrot ammo belt, and tomatoes strapped to his leg.
           1. His body is lanky and skinny. Hair is swooshed back and up over his headband. He smears chocolate under his eyes.
           2. His animations would consist of a static standing animation and two throwing animations from his right and left side.
        4. Special Abilities
        5. Main character of the game.
        6. Being picked on by most of the school bullies this offers him a chance to get even.
        7. Statistics
     2. NPC’s (Enemies)

a.) There will be three enemies in the game. One large bully. One skinny nerd. And one female athlete.

b.) Each of these three characters have different personalities but will all act similar in the fashion that they want to defeat the main character.

c.) The names of the enemy characters all reflect their physical appearance along with food. Big Mac is a large bully, so the play on words is that his name is Mac but everyone calls him Big Mac. Pizza Face was given the name pizza face because he is a nerd with major acne which resembles pizza. Tish is a tall athletic girl who most people find “rad.” So everyone simply calls her Rad Tish. She also happens to resemble a leek and a radish.

1. Levels
   1. Level #1 - Cafeteria
      1. Synopsis
         1. Snack walks into his school cafeteria, only to find out it’s filled the the bullies who have been picking on him the entire school year. The only way to stop them, is to fight back, with food.
      2. Introductory Material
         1. The level will start will the short cut scene between Snack and Pizza Face inside of the cafeteria. The cut scene will consist of three still frames.
      3. Objectives
         1. The objective would be that the player has to achieve a target score to complete the level.
      4. Physical Description
         1. The cafeteria will be a large room with many table and chairs within it. The color palette will be cool with lots of blues and whites. The enemies will use the tables to hide behind during the game.
      5. Encounters
         1. The player encounters the main bully of the level, Pizza Face and the various other bullies during this level.
   2. Level #2 - Study Hall
      1. Synopsis
         1. Snack will be sitting in the study hall studying and minding his own business, until he feels something hit him from behind. He turns around and see’s a bully throwing food at him so he decides to stand up for himself and fight back against the bullies.
      2. Introductory Material
         1. The level will start with a short cut scene between Snack and Rad Tish inside of the Study Hall. The cut scene will consist of three still frames.
      3. Objectives
         1. The objective would be that the player has to achieve a target score to complete the level.
      4. Physical Description
         1. The Study Hall level will be similar to the cafeteria level, but smaller. The room will be filled with desks and have a similar color palette as the cafeteria, with many cool colors. The enemies will use desks to hide behind during the level.
      5. Encounters
         1. The player encounters the main bully of the level, Rad Tish and the various other bullies during the level.
   3. Level #3 - Prom
      1. Synopsis
         1. The main character will be standing in the corner of the room, leaning against a wall and drinking fruit punch. While watching his classmates enjoying prom, he goes to take a sip of punch and something hits the cup and knocks it out of his hand. He realizes it’s his most feared bully, “Big” Mac. Snack decides to stand up for himself and fight back with food, ending this feud once and for all.
      2. Introductory Material
         1. The level will start with a short cut scene between Snack and “Big” Mac inside the school prom. The cut scene will consist of three still frames.
      3. Objectives - The objective would be that the player has to achieve a target score to complete the level.
      4. Physical Description
         1. The prom will be situated in a large party room. Tables and chairs will fill the room as well as a large dance floor. The color palette for the room will also be cool colors, mainly greens and whites. The enemies will use tables to hide behind during the level.
      5. Encounters
         1. The player encounters the main bully of the level, “Big” Mac and the various other bullies during the level.
2. Interface
   1. Visual System
      1. HUD
         1. Timer
         2. Current score
         3. Incoming food indicator
         4. Food count
         5. Hit indicators
         6. Points
      2. Menus
         1. Splash screen
         2. Main Menu
            1. Play
            2. Highscores
            3. Options
            4. Help
            5. Quit
         3. Play
            1. Select difficulty
            2. Loadout

Select food items for fight

* + - 1. Options
         1. SFX Volume

Slider

* + - * 1. Music Volume

Slider

* + - * 1. Tilt Movement

On/Off

* + - 1. Highscores
         1. Displays Highscores for each level
      2. Help
         1. Displays controls
    1. Rendering System
       1. The game engine being used utilizes raster based images
    2. Camera
       1. Camera will be an over the shoulder view.

1. Artificial Intelligence
   1. Opponent AI
      1. AI will be largely independent of player actions
      2. Coordinated actions between different AI entities (i.e. Nerd, Athlete, Bully) will create the challenges and goals to overcome through gameplay
         1. However, higher level AI (i.e. Tier 3 Bullies or bosses - if they are implemented - will likely incorporate limited reactions from player actions such as dynamic dodging)
      3. Enemy class will overarch all enemy types, with different variables being active and modified depending on enemy classification
         1. class Enemy
            1. Variables:

health (*hits until elimination*)

damage

fire\_rate

movement\_speed

aim\_error

block\_chance

upper\_limit

restriction on movement in positive direction

lower\_limit

restriction on movement in negative direction

* + - * 1. Methods:

Move()

Throw()

CalculateAim()

Dodge()

Higher level enemies only

Block()

Higher level enemies only

* 1. Enemy AI
     1. Nerd, Tier 1
        1. Easiest opponent and first introduced
        2. Abilities
           1. Move/Dodge
           2. Throw
     2. Athlete, Tier 2
        1. Mid-strength opponent
        2. Abilities
           1. Move/Dodge

Increased speed x1.5

* + - * 1. Throw

Increased damage x1.5

5% less accuracy error

* + - * 1. Block

5% chance to block (*subject to change based on gameplay outcomes*)

* + 1. Bully, Tier 3
       1. Strongest opponent
       2. Abilities
          1. Move/Dodge

Increased speed x 2.0

* + - * 1. Throw

Increased damage x 2.0

10% less accuracy error

Increased rate of fire x 1.5

* + - * 1. Block

10% chance to block (*subject to change depending on gameplay outcomes*)

* + - * 1. Immunites/Powerups

May invoke invulnerability or increased damage for a time (*this needs further discussion and consideration before implementation*)

* 1. Non-combat Characters (*if time allows*)
     1. Appear less frequently than combatants
        1. Progress across screen (i.e. left to right or right to left), providing limited time to be hit
        2. Impose scoring penalties or bonuses when hit
     2. Fellow students (where applicable i.e. school levels)
     3. Civilians (again, where appropriate)
  2. Support AI
     1. Player and Collision Detection
        1. Player has free horizontal range across the screen
        2. Player collision detection is only relevant to enemy projectiles
           1. Different projectiles incur different levels of damage or other penalties

These will be characteristics of the projectiles themselves

They will alert the player of their effects upon collision

* + 1. Game powerups
       1. Occur randomly
       2. Occur based on player score or survivability (how long you’ve been alive)
       3. Limited AI necessary
          1. Simple modifications to player or enemy attributes
    2. Pathfinding
       1. Limited pathfinding is necessary
          1. Enemies remain on fixed horizontal track

Alternate between two designated coordinates

Randomly change direction

Periodically duck behind cover

Higher level enemies will have knowledge of the player’s location and projectiles

* + - * 1. No forward progression is necessary for either the player or the bullies

Both remain at same distance relative to one another

1. Technical Bible
   1. Target Hardware
      1. iOS
      2. Potential Android post-release
   2. Development hardware and software
      1. Hardware: Windows machines owned by coders
         1. Ipad/Ipod for testing
   3. Development procedures and standards
      1. Tasks will be split up between the two coders
         1. Enemy/AI focused content: Tim
         2. Player focused content: Andrew
         3. Menu systems - Both
      2. Content will be compiled together and bug tested on regular basis
         1. To make sure both coders’ content meshes
         2. Weekly meetings with instructor (Buchner) to ensure progress and compatibility
      3. Content results will be reviewed by other team members and faculty
   4. Game Engine
      1. Unity 3D: unity3d.com
   5. Network
      1. No networking is currently planned for
         1. Subject to change based on timeframes
         2. Possible implementation of leaderboard system
   6. Scripting Language
      1. Unity’s built-in IDE, MonoDevelop
      2. Scripting in C++
2. Art Bible
   1. Concept Art
   2. Style Guides
      1. Assets will have a stylized cartoon appearance.
      2. Bold colors and easily distinguished characters, foods and backgrounds.
   3. Characters
   4. Environments
      1. Assets should be at least 1920x1080 (16x9)
      2. Ideally they would be vector files and exported into PNGimages, if needed working raster would be fine.
      3. Cover such as tables should be rendered on a separate layer from the background so NPC’s can be placed behind them.
      4. So each environment should have at least two PNG images, the background and the cover.
   5. Food
   6. Cut Scenes
      1. Cafeteria Cutscene
      2. Study Hall Cutscene
      3. Prom Cutscene
3. Management
   1. Risk Analysis
      1. We all have a strong vision on what we expect to see in the game, but we may be imagining a game too large to be made in just a semester. With the ideas of incorporating many different character abilities, power-ups, animations, selection screens and various other smaller details.
      2. As long as we stay organized and communicate well, the game will be developed and fully functional during the timeframe of a semester. If we feel the extra add-ons to the game poses a problem with finishing the game, we will have to cut back on those elements and only focus on the important parts.
      3. As a group, we have a lot of ideas and plans for this game that, if we were professional game developers, we’d have the time to actually implement. And though time is of the essence, those ideas that may be too lavish for us to create for in-game play do not have to be lost. Brain power was spent on it and they still fit the concept of our game. We can still incorporate those ideas by making in-game icons for the things we’d want to be featured in the game that in reality we can’t feature because of time constraints (i.e. a locked food item, a locked level, etc.) because it still gives you a feel of how far the game concept could reach.
      4. This is open to further discussion: Depending on the size of the player avatar it may result in screen visibility issues. I mean that the player’s targets and the strategic layout of the game may be obscured by the player itself.
      5. This could be solved by designing the game exclusively for the iPad instead of the iPad and iPhone. A larger overall screen size will allow for enough space to display the player avatar without loss of visibility or game awareness.
      6. As artists, most of us have a style that is specific and identifiable. And with so many different artists working on one project doing so many different aspects of the game, the risk stands that the work we produce could end up being inconsistent visually. That in turn can take the player out of the “magic bubble,” breaking their concentration and starting up their consciousness, which as game developers, we try not to do. Having different art styles also just looks bad.
      7. To solve this issue, the artists can be flexible and agree on a general enough style that the game can become synonymous with, along with working together every step of the way to make sure the designs we create are cohesive and compatible.
      8. Since we all have other classes to attend including this one, most of which also require a lot of work, it is imperative that time is managed so that all of the work that needs done, gets done without sacrificing too much sleep in the process.
      9. To solve this issue it would be a good idea to create some kind of due-date system outside of what is given to us in class. A deadline for ourselves by which we must get our own parts done so that we do not slow down others.
      10. It doesn't matter how good the idea is or how great the artwork looks, sometimes things just can’t work out. Whether it is because of time constraints or creative differences, not everything can make it into the game. Perhaps an animation doesn't match up with another animation or a splatter effect covers too much (or not enough) of the character- these are all things that we may have to tweak or completely cut from the game.
      11. To solve this problem all it takes is trial and error. This is not a problem you can fix from the start but only after it has arisen. I trust our group is smart enough to realize a problem when it appears and is confident we can make the right choice on how to fix it--either by altering or cutting completely.
   2. Localization Plan
      1. Game will be localized to American English, there are no further localization plans at this time.
   3. Test Plan
      1. Building for iOS we will be testing locally on iPads. If we’re capable of deploying to Android testing on a wider scale will be possible.
4. Appendices
   1. Asset List
      1. Art
         1. 2D Assets
            1. Characters

Main Character

1st NPC

2nd NPC

3rd NPC

* + - * 1. Environments

Cafeteria

Ballpark

Wedding

(Prison)

* + - * 1. Food

Cupcakes

Pizza

Hamburgers

Hotdogs

Steak

Potatoes

Chicken Patty

Chicken Wings

Mexican Pizza

Ham

Cheese

Sausage

Bratwurst

Fish

Crab

Soup

Salad

Eggs

Fries

Carrots

Broccoli

Peas

Ice Cream

Spaghetti

Coleslaw

Rice

Taco

Beans

Salsa

* + - * 1. Powerups

Energy drink

Pea Gun

Popsicle

* + - 1. Animation List
         1. Characters

Arm throwing

Movement left/right

Ducking

* + - * 1. Food

Spinning/Tumble animation flying through air

Splatter

* + - 1. Effects List
      2. Interface Art List
         1. Splash Screen
         2. Main Screen
         3. Options

On/Off

Slider

* + - * 1. Quit
        2. Pause
        3. High Scores
        4. Hud

Score

Next Food

Food Count

Timer

* + - * 1. On Screen Display

Impacts

Points

* + - 1. Cut scene List
         1. Cut scene #1 - Cafeteria
         2. Cut scene #2 - Baseball Game
         3. Cut scene #3 - Wedding Reception
    1. Sound
       1. Environmental Sounds
       2. Weapon Sounds
          1. Food thrown sound
          2. Food splatter food
       3. Interface Sounds
          1. Menu selection sound
    2. Music
       1. Ambient
          1. Cut Scene music
       2. “Action”
          1. Gameplay music
       3. Victory
          1. Winning screen music
       4. Defeat
          1. Losing screen music
    3. Voice
       1. Actor #1 lines
          1. Player sounds

Yelling

Throwing

Getting hit sound

* + - 1. Actor #2 lines
         1. Bullies sounds

Yelling

Throwing

Getting hit sound