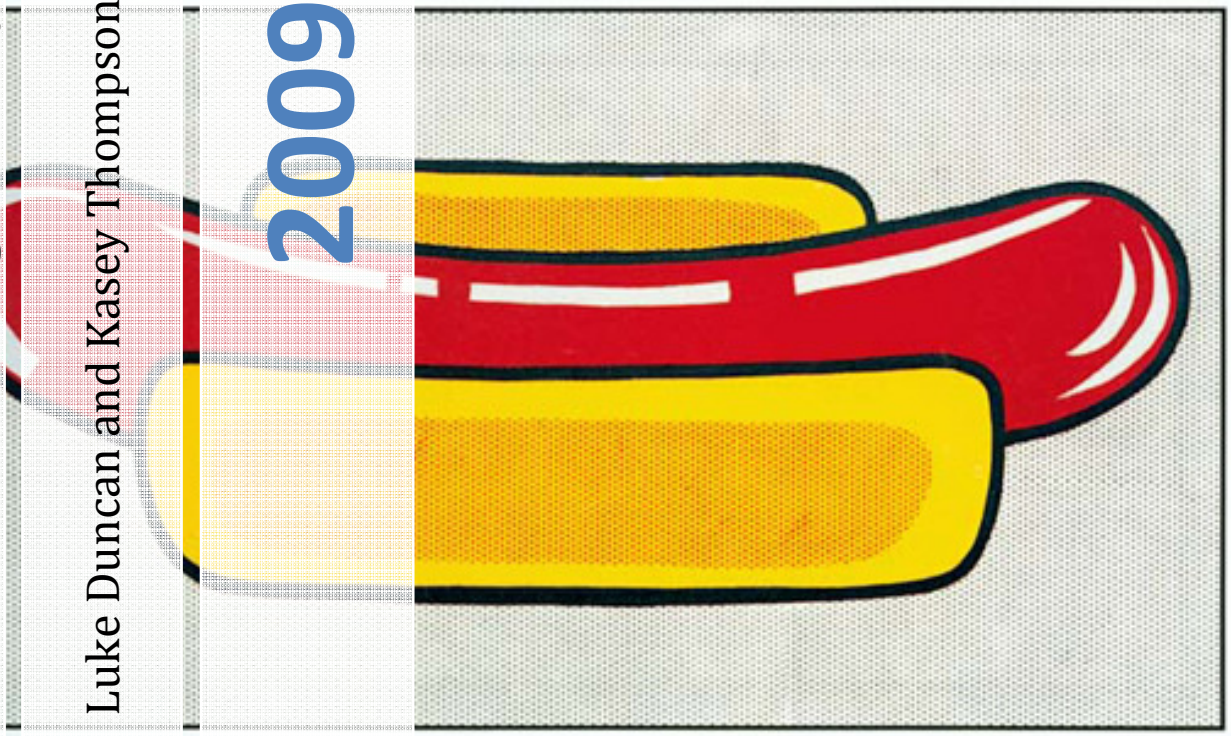


Wise Guys Presents: The Hot Dog Factory

Luke Duncan and Kasey Thompson

2009



A 2D DirectX Game designed for the Winter 2009 CIS 487 – Game Design class.

Table of Contents

| | | |
|------|--|---|
| I. | Executive Summary..... | 3 |
| a. | Abstract of Game Story..... | 3 |
| II. | Game Play Look and Feel | 3 |
| a. | Appearance | 3 |
| b. | Player Roles and Actions..... | 4 |
| c. | Strategies and Motivations..... | 5 |
| d. | Level Summary and Story Progression..... | 5 |
| III. | Development Specifications | 5 |
| a. | Hardware | 5 |
| b. | Software..... | 5 |
| c. | Algorithm Style..... | 6 |

I. Executive Summary

a. Abstract of Game Story

Many people often wonder how 'Wise Guys' makes such amazing hot dogs. For some people, that curiosity drives them to quit their job as a software engineer with aspirations of gaining employment at the hot dog factory. You are that person. To fully train you in their hot dog ways, your new boss puts you at the front lines, the order counter. It's your job to fulfill orders as they come, in both a timely and completely manner. Do you have what it takes? Will you have quit your job for nothing? There is only one way to find out. May the Frankfurt be with you.

II. Game Play Look and Feel

a. Appearance

The user will be presented with a top down view of the hot dog counter. At the top of the screen will be condiments that can be used to fulfill orders. At the bottom of the screen will be the hot dog conveyor belt. Hot dogs will scroll across the conveyor belt with label attached beneath them, indicating what condiments need to be added to complete the order. Figure 1 includes some of the graphics that were used during the story boarding phase of the game design, while figure 2 shows the finished product.

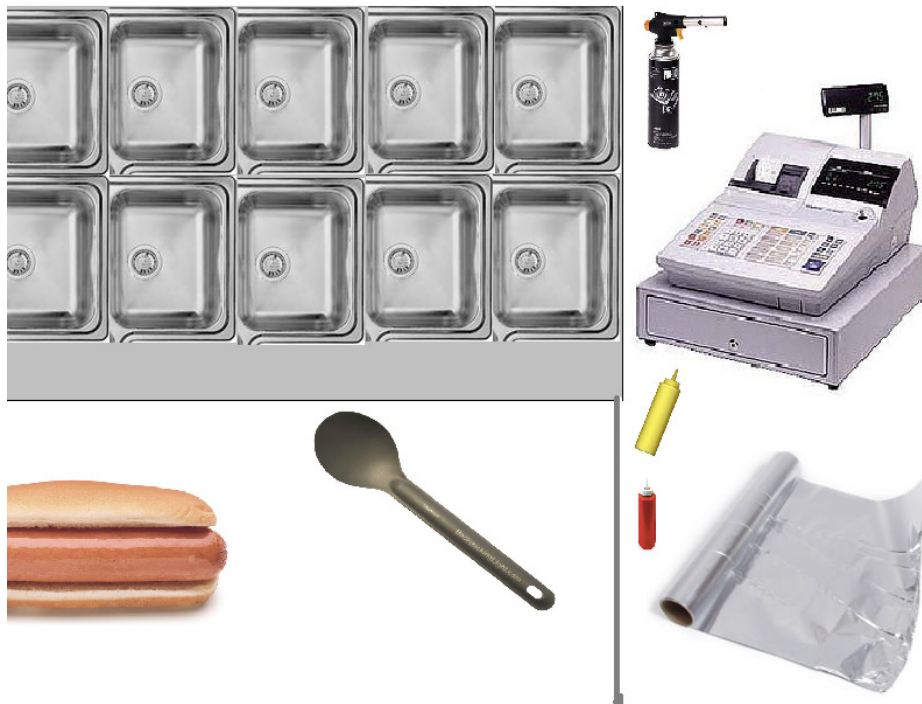


Figure 1



Figure 2

b. Player Roles and Actions

The player can do one things, make hot dogs. They accomplish this by using a mouse interface that allows them to select condiments from their bins and put them on to the hot dog as it passes. Once they have made their hot dog they will need to wrap it, and sell it, by using the point and click interface.

The following Condiments will be available in the game. Note that every successive level also includes the condiments from the previous level

Level 1:

- Relish
- Onions
- Sport Peppers
- Pickles
- Tomatoes
- Sauerkraut
- Bacon
- Swiss Cheese

The following Actions will be supported on every level in the game.

- Put condiment on hot dog
- Wrap Hot Dog
- Sell Hot Dog

c. Strategies and Motivations

There are two unique strategies. You could fulfill each hot dog individually as it scrolls by. For example, the first hot dog may require ketchup and mustard, while the second hot dog may only require ketchup. The user can drag the ketchup and then the mustard to the first hot dog, and then drag the ketchup to the second hot dog. As the speed increases however the user may choose to grab the ketchup and put it on all hot dogs that need ketchup, before moving on to the next topping.

After completing the hot dog, the user will also have to wrap it and sell it. If the user forgets this step, or gets too far behind, the hot dogs will begin to pile up and ultimately lead to losing the game. For this reason, every strategy involves speed.

The player will be motivated by a scoring system that takes into account the number of hot dogs successfully completed, the number of hot dogs partially completed, and the number of hot dogs with either the wrong toppings or no toppings.

d. Level Summary and Story Progression

The game is played in a free play mode. The game starts with randomly generated orders that come in slowly and require few toppings. As the game progresses, the speed at which the orders arrive, as well as the complexity of the orders, increases. The players goal is to make at least \$50. They are able to play as long as they like. If at the end of the game play they have made \$50 then they will be hired as a long term hot dog artisan. If not, then they will be forced into a life of freelance software engineering.

III. Development Specifications

a. Hardware

The game will be built, tested, and supported on the following systems:

CPU: 1Ghz

Ram: 1 Gb

OS: Windows 7, 32-bit

Frameworks: DirectX 9

b. Software

The development environment for the game will include the following:

- Visual Studio 2008
- Gimp
- Photoshop
- Paint.net
- DirectX 9 SDK

c. Algorithm Style

Algorithms used in the game include the following:

- Increasing speed at a standard rate
This is accomplished by using a simple counter for the number of dogs served. Every four hot dogs that are served, raises the speed of the game.
- Determine what toppings are required for, and have been added by the users
This is done using two vector of vectors $vector< vector<int> > orders$. The big vector $orders$ and $fulfilled$, corresponds the individual hot dogs that are on the screen. For each order, the inner vectors represents the toppings required, or the toppings fulfilled. As hot dogs are sold the first vector is removed from the top level container.
- The ability to assess completed orders for correctness
The $orders$ and $fulfilled$ vectors are compared. If the $fulfilled$ vector is the same as the $orders$ vector then the player correctly made the hotdog.
- Randomly generate hot dog orders appropriate for each level
The $rand()$ function is used multiple times to accomplish this. First, a random number is generated that is used for to determine the number of n toppings. This number is limited by the maximum number of condiments stipulated by the $calculateLevel()$ function. Then, $rand()$ is used for each n topping to determine which topping it will be.
- The ability to utilize DirectX effectively
LaMothe's BOB object was used extensively throughout the game.