

Design objective or theme your team chose AND how you planned to achieve that design objective or design for this theme:

Team Hilarity opted to create a game in the humor category.

With comedy in mind members of Team Hilarity began to draft their different designs. After processing which draft felt best a hybrid between two concepts was chosen. A shopping cart experience concept was reconceptualized to be a more complete vision that included a full shopping experience. Team Hilarity decided on the name *Shopping Cart* which would attempt to induce experiences such as: road rage, stress, bizarreness, chaos, and humor.

After developing a completed draft for the game, *Shopping Cart* development tasks were assigned to begin implementing features into the game. To achieve the formerly mentioned experiences to be featured in the game, specific mechanics had to be implemented. It was decided that the game would be first person, include competitive NPC's, have a timer, and retro graphics for aesthetics.

Intended Experience or Desired Outcomes

- Road Rage
- Care-free, feeling like a rule breaker
- Savagery - players feel like they have a lot of authority and power.
- Bizarreness
- Hilarity

Game Development

Our team used the Unity game engine to create our game, Shopping Cart Speedrun. Given the theme of hilarity, our team came up with a lot of funny ideas, taking inspiration from games like The Stanley Parable and the humor from Portal during our brainstorming time. Eventually, we settled on an idea of a black friday shopping spree and the chaos that comes with it. We knew right away that this would make a phenomenal 3D game in first person to create a sense of immersion and interaction between the world and the player. After coming up with all of the chaotic gameplay mechanics (ramming into NPCs, stealing their items, beating the other shoppers to the checkout, etc.), we started the game's production.

Our game is programmed in C# and uses a variety of design patterns such as the Observer pattern for the shopping list system, Strategy Pattern for the NPC behavior, and Factory pattern for spawning in items.

We wanted to experiment with PS1-style shaders, and we all agreed that would be a neat idea. As such, all of the art is made in-house using software including Blender and Substance Painter. The level block-out was created using Probuilder because it is easy to use and very powerful.

Each week, mainly on Wednesdays when we had group work time, we all discussed what we completed since the last week and used class time to work on our Sprint Planning goals which we assign out-of-class every Thursday during our private team meeting. At these meetings, we went over again what we did, what we plan to do, and any blockers that were preventing us from achieving our goals. We also helped each other out with problems we were having programming- and design-wise. When submitting changes to the project, we made sure we pulled frequently, pushed often, and kept in constant communication via Discord.

Brief Game Design Document

02/14/2021
Team Hilarity

This template is loosely based on the [Project Design Document](#) on Unity's Create with Code Course, but has been expanded and adapted to this course.

Team Members

Kyle Grenier
Frank Calabrese
Chris Smith
Levi Wyant
Nathan Cover

Game Design Concept

1 Player Control	You control a	in this	
	<i>Human with a shopping cart</i>	<i>First person</i>	game
	where	makes the player	
	<i>Keyboard inputs</i>	<i>Move around with the shopping cart and collect items.</i>	

2 Basic Gameplay	During the game,	from	
	<i>A variety of items</i>	appears	<i>On shelves and such</i>

3 Core Game Mechanic	The goal of the game is to
	<i>Collect all of the items on your list as quickly as possible, avoiding NPCs trying to hinder your progress along the way.</i>
	What makes this goal challenging or difficult is
	<i>Other shoppers aggressively in your way (taking items off shelf, stealing items from the player)</i>
Players have the ability to	
<i>Run into NPCs with their cart, collect items on shopping list</i>	
And when players use their abilities	
<i>They can perform special movements or use power ups, such as drifting the cart</i>	

4 Gameplay Mechanics	As the game progresses,	making it
	<i>Items become more scarce</i>	<i>Harder to find them and get everything on the list</i>

[optional] There will also be

powerups

5

Win / Loss Conditions

The player will win when

They have collected all of the items on their list

The player will lose when

If there is no more of a specific item that is on your shopping list (i.e., NPC checks out items before you).

When the player wins

Display winning particles and sfx and transition to a leaderboard with timer/scoring information.

When the player loses

Display losing particles and sfx and transition to a defeat screen.

When the game is over, the player can restart the game or try again from the beginning by

Clicking a Restart or Return to Menu button

6

Sound & Effects

There will be sound effects

*Shopping cart moving
Item collection
NPC chatter
Ambience*

and particle effects

*Item collection
Crashing carts*

[optional] There will also be

Camera shaking on collision of shopping carts.

7

User Interface

The

timer

will

increase

whenever

Until the game ends

At the start of the game, the title

Speedrun Shopping

will appear

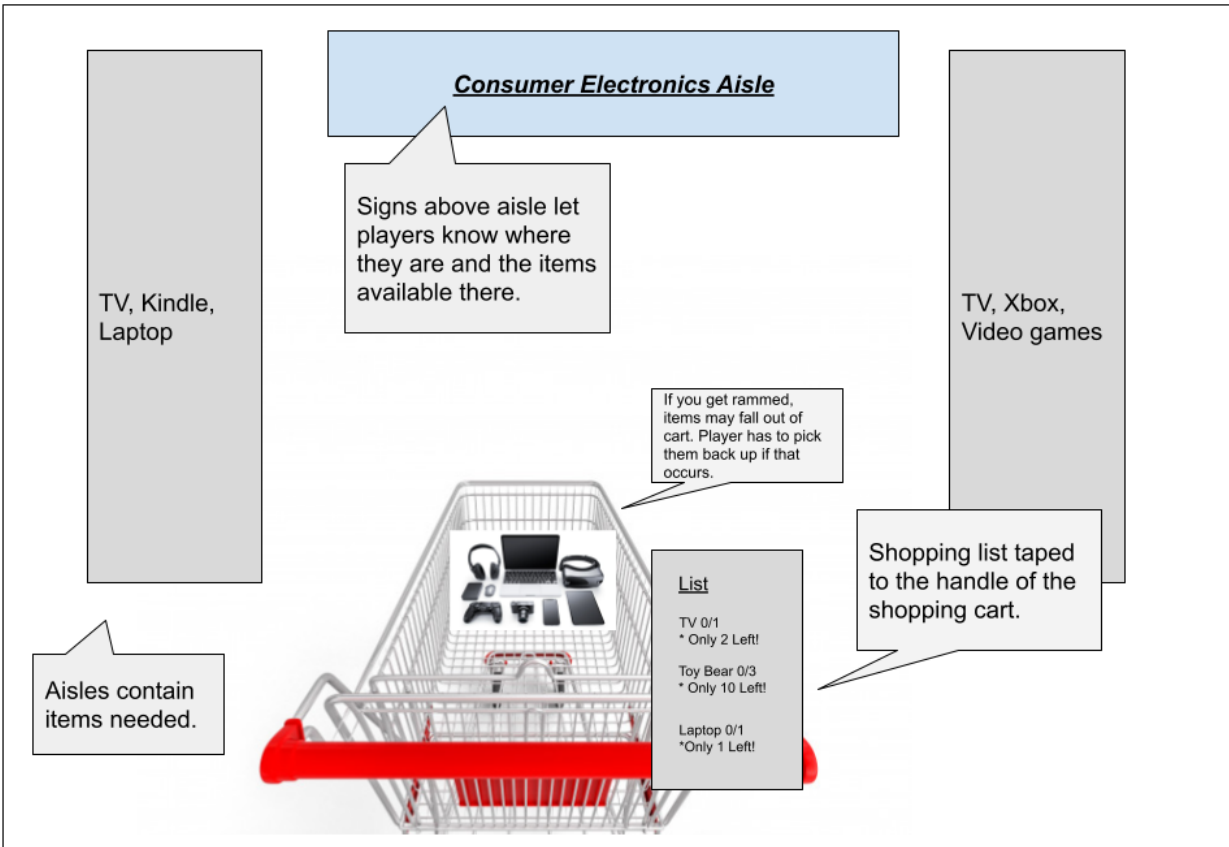
8

Other Features

The player has a list of items to get to meet the win condition that is randomized.

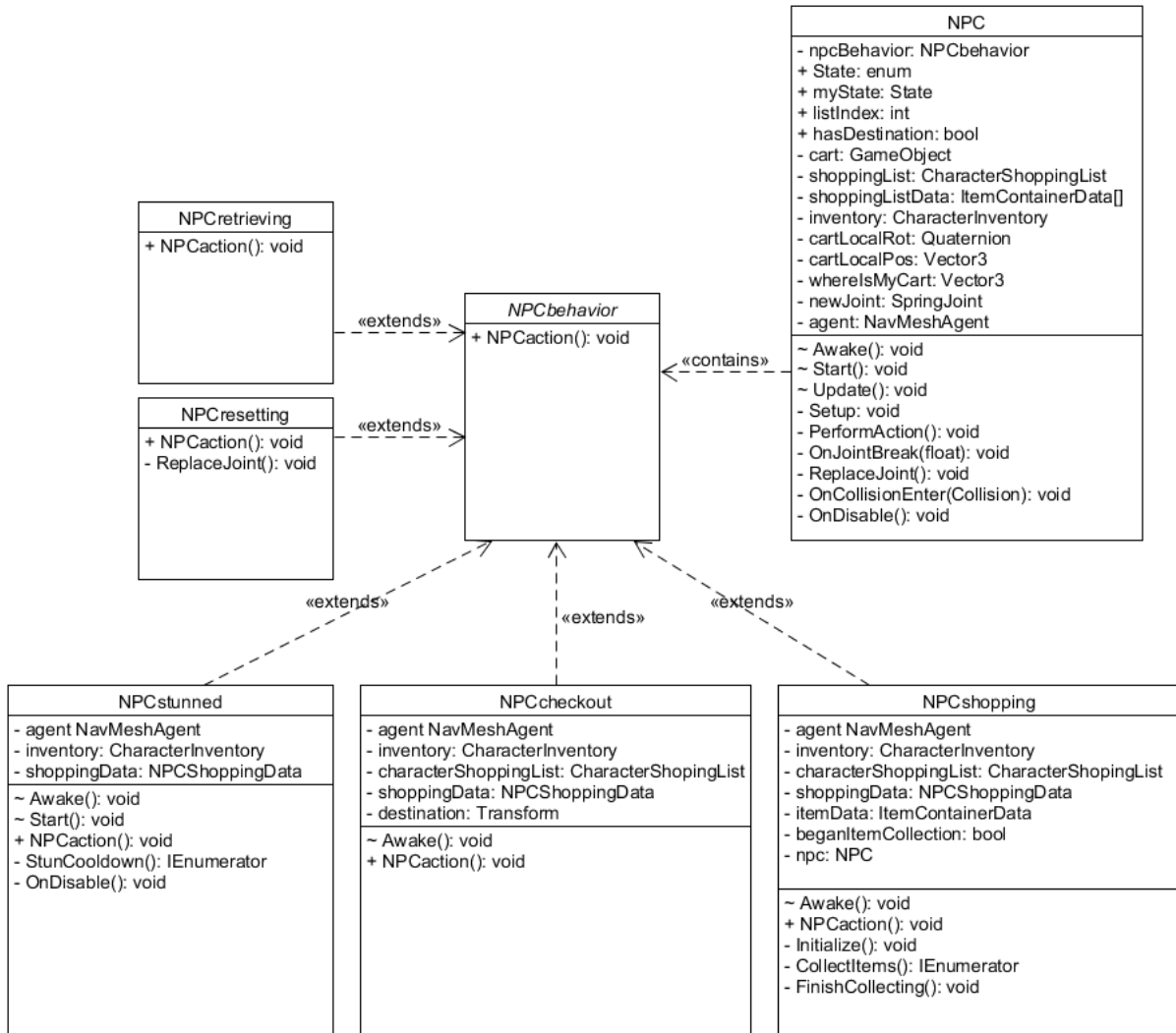
Game Design Sketch (Annotated with Callouts)

(Also known as a One-Page Game Design Document)

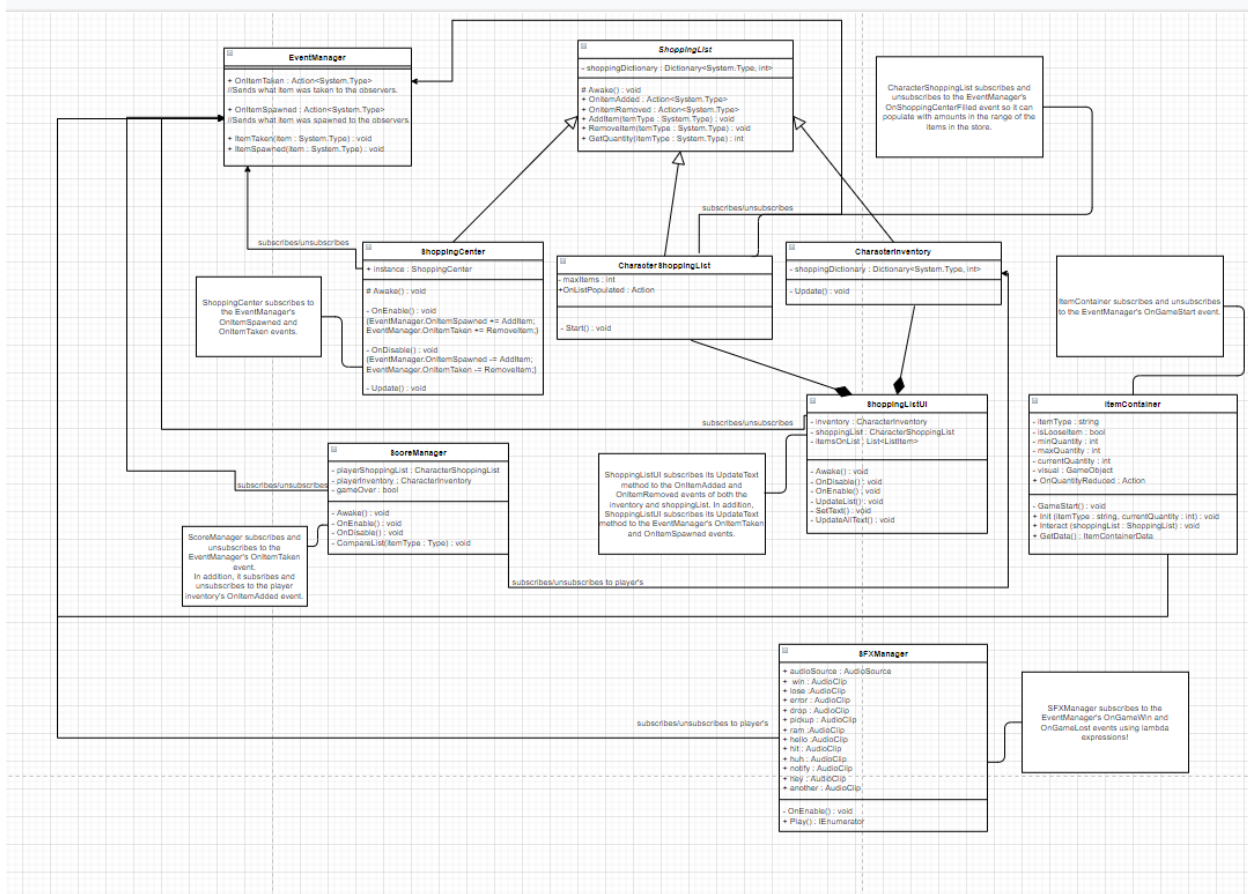


UML Class Diagrams for each Design Pattern Used:

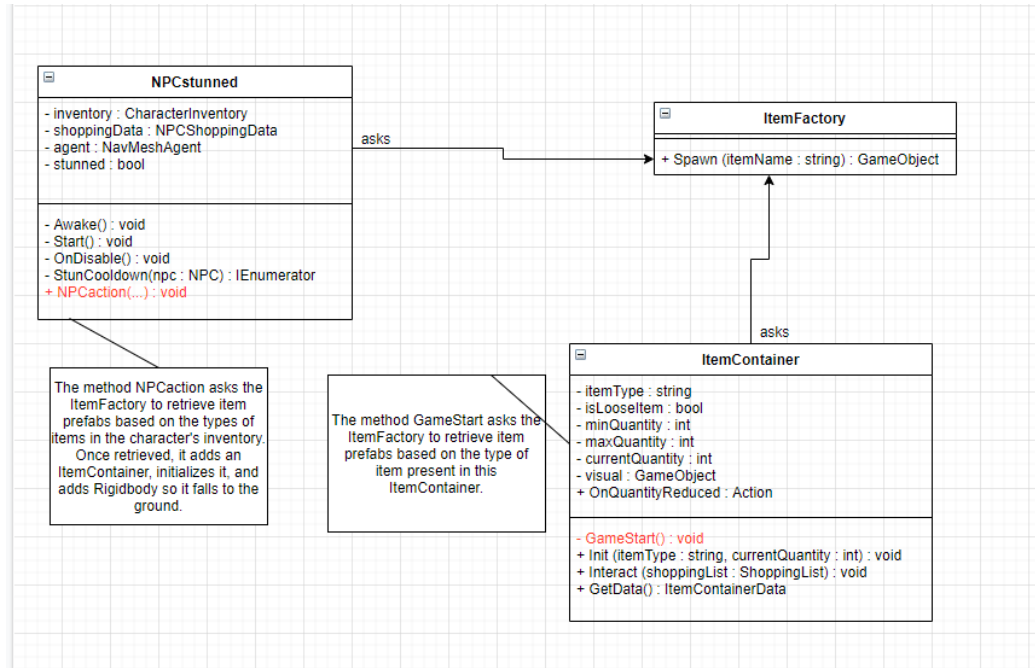
Strategy Pattern:



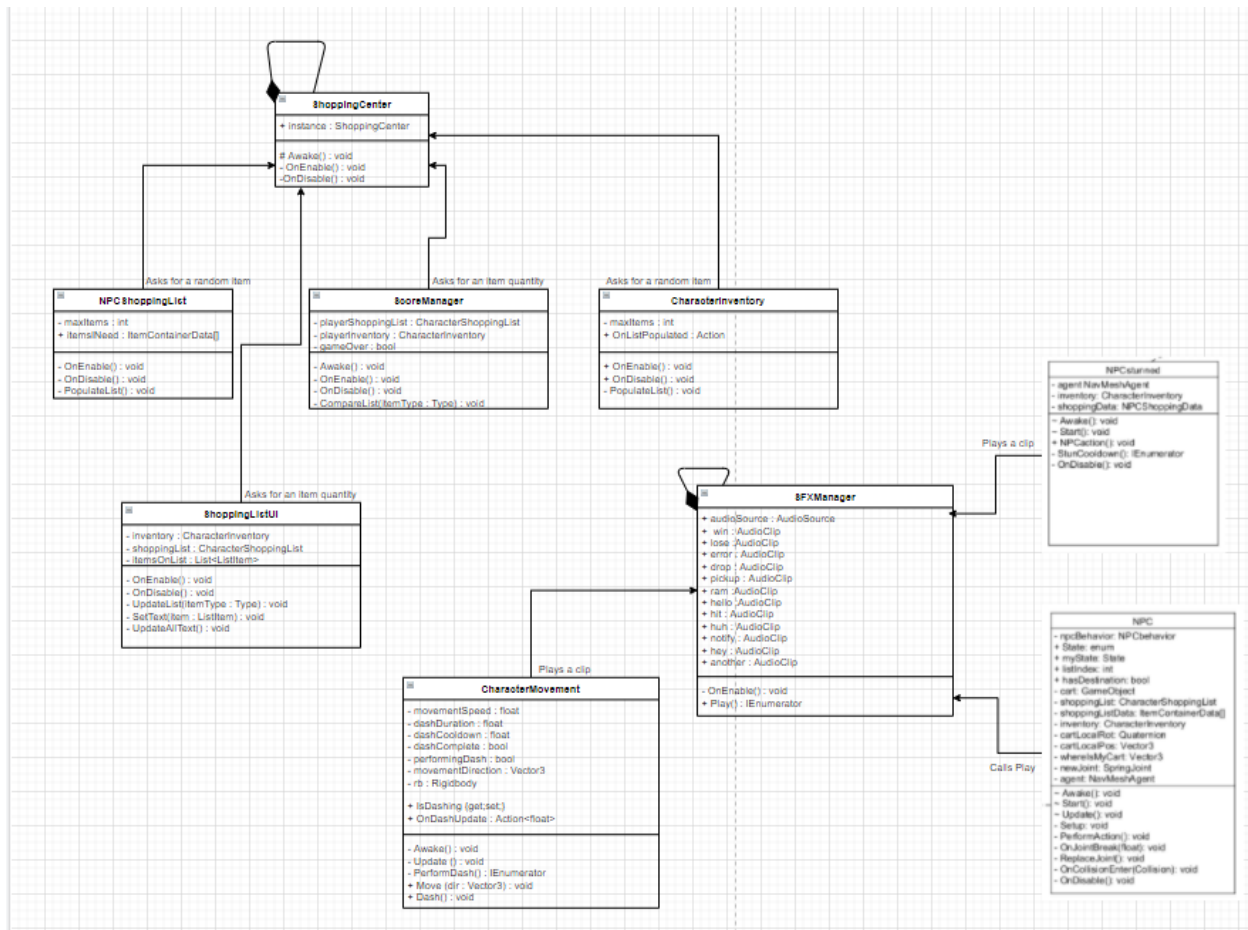
Observer pattern:



Simple Factory Pattern:



Singleton Pattern:



Playtesting Methods

To get feedback on our game, we conducted playtesting both in class and with a few out of class participants. To begin conducting the playtest, we introduced ourselves, our reasonings behind getting the playtester's feedback, and let them know that their participation is entirely voluntary. We asked some icebreaker questions to get a background of the playtester's familiarity with video games and their interests in any specific genres. During their time playing the game, we requested they speak their thoughts out loud so we can record their thoughts and reasonings behind certain in-game actions. This data allowed us to understand and identify patterns of highlights and lowlights in our game mechanics, UI, etc., and enabled us to come up with opportunities to improve the game's experience overall. In addition, we probed the playtester with questions and requests if they ever went silent or to get more information into a specific action, idea, thought, etc. After about 10-15 minutes of playtesting, we

debriefed by asking follow up questions to gain more insight into our recordings that we didn't have time to address fully during the playtesting session, and wrapped up by providing them a survey to fill out to record more of their thoughts on the game and their experience with it,

Observation Notes

Frank	<p>Personal notes: tutorial shouldn't take place at beginning of run NPCs finish much sooner than player generally</p> <p>Sam:</p> <p>Thought it took too long Didn't realize he could end it Unclear how to end Unclear he could interact with NPCs Liked sound effects Unsure if he knew you could scroll between items</p> <p>Camron:</p> <p>Cart breaks too easily Can't see signs easily Unclear where things are NPCs also ended way before him without taking anything he needed Make signs cubes to see them from side Words on signs too small</p>
Kyle	<p>Wondering what the numbers mean on the shopping list. Noticed how after picking up an item</p> <p>Thinks proximity window is too hard to see. White on white no good.</p>

	<p>Need to communicate that NPCs take items away.</p> <p>Overall fun experience. Found store easy to navigate.</p> <p>NPCs disappeared?? He was confused. He didn't know they could check out.</p> <p>Didn't know what items NPCs had on them.</p> <p>Timer turns red and green repeatedly.</p> <p>Can pick up items u dont need.</p> <p>Tutorial: Might need to let player know that you can ram into NPCs</p> <p>*Increase player interaction sphere?</p>
Nathan	<p>Players struggled to locate items. Able to pick up items from different aisles. Bug with colliders allows players to jump.</p>
Chris	<p>Playtester: Ashton</p> <p>Sensitivity, item indicators, time limit, images are a bit misleading, checkout tutorial when all items are gathered, label checkouts,</p> <p>Overall notes: Clarify shopping list numbers, fix sensitivity issues, better tutorial structure, Pickup window contrast, add pause to tutorial,</p>
Levi	<p>Tester: Samuel Carpenter</p> <p>Cons: Text hard to read, Difficulty finding items, hard to check out, and did not know the user could dash.</p> <p>Pros: Enjoyed the concept, liked the NPC concept, and thought the graphics were nice.</p>

	<p>Tester: Camron Hunt</p> <p>Cons: Had trouble reading text, found reading the objectives list hard to read while playing, did not know they could dash, and felt like some more instructions were needed.</p> <p>Pros: Thought the overall mechanics were good, enjoyed the concept of the game, and could tell what we were going for comedically.</p>
--	---

Summary of Questionnaire Results

https://docs.google.com/forms/d/1V0RiJGGqgX7AmbmTyNEqFHtoP-4HVOQf_DKuYys2bdI/viewanalytics

Playtesting Report: Findings from The Playtesting

After conducting playtesting in class, you will need to write up the findings from the playtesting and your plan of action to address each finding.

Template for Highlights and Lowlights

Highlights:

Highlight 1: *Store was easy to navigate*

The layout of the store had memorable landmarks and different areas that were designed differently and physical signs which offered frames of reference for the players on where specific items might be as well as actual signs to guide players around the map without it feeling forced because it is a grocery store.

Highlight 2: *Overall fun experienced even if it needs heavy streamlining*

The concept and gameplay loop is definitely there and works, once played understood how the game worked they had an overall enjoyable time with it.

Highlight 3: *People liked the overall aesthetic and sound effects*

People thought the retro textures were cool, and also mentioned that the sound effects were funny, which means to some degree we met the design goal of making a funny game.

Lowlights:

Issue 1: Players had very little NPC interaction due to plentiful resources, and the efficiency of NPCs to finish their tasks quickly and leave

Priority: 1

Description: Players wouldn't need to, or sometimes even be able to interact with NPCs due to a variety of reasons including NPCs leaving too early, players not needing the resources they were carrying, and us not effectively communicating the role of NPCs to players.

Evidence: Many playtesters never rammmed NPCs, and everyone we saw finished long after all NPCs were already gone.

Action Items: Create a tutorial that says what NPCs are and what they do. Increase the number of NPCs, and/or the size of their shopping lists to

increase resource scarcity and the necessity of player's stealing from NPCs.

Issue 2: *Players had a hard time understanding what to do and what different things meant*

Priority: 1;

Description Lack of a tutorial, information about shopping list statistics is nonexistent. No explanation of failing and no communication on how to end the game.

Evidence Players actively asked what the numbers on the shopping list meant, they also asked why the timer and elements on the list change colors. They also asked what to do once they had all the items they needed

Action Items: arrow at the checkout when the player meets checkout requirements?. Rework the shopping list to be more detailed maybe, Have a tutorial that explains the games systems like dashing since no one knew they could do that until told.

Issue 3: *Players where confused about why some items where in the wrong areas*

Priority: 3;

Description Players could sometimes pick up items in one area that seemed like they didn't belong in that aisle

Evidence players asked why dog toys where in the cosmetics aisle

Action Items: maybe do a final pass on item spawn points now that final art is in. Part of the issue was also because players could grab items through walls that were in a different aisle so pickup bounds should probably be tweaked.

Issue 4: *Players wanted to know what items other NPCs had*

Priority: 4;

Description after players found out they could steal items from npcs they were frustrated over the fact that they didn't know what npcs had what items, it became trial and error attacking npcs to see if they had an item you wanted

Evidence Players would end up walking around ramming every npc possible and checking their dropped items to see if there was anything they needed.

Action Items: show physical items in the carts of npcs, or perhaps display a window next to the npcs when hovering your crosshair over them to see what items they have similar to the item pickup window.

Issue 5: Player's were confused on how to pick up items

Priority: 2

Description: More often than not, player's didn't know how the proximity window worked. Although we took inspiration from games with a similar proximity-based interaction system like Fallout, we plan to take these results and cater them to be more understandable.

Evidence: One playtester was near the bread aisle, but stated that they "didn't know how to pick up the bread," and they thought the man at the counter was selling bread, not that it was obtainable through the blue item container cube.

Action Items: Make the proximity UI more in-line with that of games like Fallout (especially with the mechanic of having it reappear and disappear if there are or are not items nearby), make the player be able to look at and manually pick up items if they are loose on the ground, move aisle blue cubes to the center of the aisle to make them easier to reach.

Sprint Retrospective (3/04)

Name	Tasks to Complete
Christain Smith	Finalized item spawning placement. Finalized music, sfx, UI. Got everything combined.
Levi Wyant	Fixing shopping list.
Kyle Grenier	Added in royalty free BG music, fixed a lot of bugs, player ramming mechanic, NPC arrows, fully working NPC behavior.
Nathan Cover	Added texture variants for some objects for veggie shelves, and frozen aisle, laptop and TV models, Textures for the walls and ceiling, added countertop asset.
Frank Calabrese	Updated NPC UML with Kyle's new shopping behaviors. Fixed some bugs created by new NPC behaviors such as not retrieving cart after a stun.

Sprint Retrospective (3/11)

Name	Tasks to Complete
Christain Smith	Made a few qol changes and streamlined spawnpoints. Also added a few sfx.
Levi Wyant	
Kyle Grenier	Items now appear in both the player's and all the carts of the NPCs.
Nathan Cover	Made assets for all the interactable items, made fridge island asset, objective arrow asset, checkout boot asset, and cart park decal for checkout area
Frank Calabrese	Made a dedicated tutorial to help players understand the game.

Sprint Planning (3/11)

Name	Tasks to Complete
Christain Smith	General qol changes and updated/streamlined mechanics
Levi Wyant	Working on making shopping list GUI easier to read.
Kyle Grenier	Bug fixes, quality of life changes -> make sure the player can't continue the game after they've won or lost, can only dash if ur attached to cart, can only pick up items if ur in ur cart, items appearing in cart(?), look into mouse in WebGL
Nathan Cover	Create a better arrow for NPCs, checkout booth object, fridge island object, and create item assets.
Frank Calabrese	Finally actually fix cart tipping. Make a Tutorial. Update UML diagram for strategy pattern.

Sprint Planning (3/18)

Name	Tasks to Complete
Christain Smith	Finalize tutorial, sfx, other final tweaks.
Levi Wyant	
Kyle Grenier	Revamp game over and win screen to make sure the player can't do stuff and show a restart button and menu button, and look into mouse sensitivity in WebGL.
Nathan Cover	Unique assets for bakery and pharmacy to make those areas more distinguishable
Frank Calabrese	Bug fixes

Completed Plan to Make Changes Based on Playtesting

Action Item - Highlight/Lowlight	Priority	Deadline
Make Tutorial - many things being generally unclear	1	Frank 3/15
Create item prefabs so player can know what items NPCs have and are on the shelves, ground, etc.	2	Nathan 3/14
Create more intuitive prompt to help players know how to pick up items	3	Levi 3/15 Chris - Make the proximity UI centered and hidden when no items around 3/15
Show physical items in the cart of NPCs	4	Kyle 3/15
Player can pick up loose items on the ground via point and click.	5	Kyle 3/16
NPC arrow bug fixes	6	Kyle 3/16

Team Project Game:

Latest Version of Game: <https://geekguy100.itch.io/shopping-cart>

Github Repo: https://github.com/geekguy100/CIS497_ComedyGame