

FISH SIMULATOR SPECIFICATION DOCUMENT

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ENTERTAINMENT, FROM THE SIMPLE CARE OF A VIRTUAL FISH.

(A fun game app that lets you take care of a fish.)

CRITERIA

Priority 1

- Interface/Content must be clear and visible [visibility]
- Interface establishes a valid mental model [mapping]

Priority 2

- App is similar to other game apps [familiarity]
- User knows where she is on the game [visibility]

Priority 3

- User will become an expert quickly [learnability]
- Mental model is not complex [simplicity]

PERSONA

Kristy is a seven-year-old who just started 2nd grade this school year. She lives with her parents and has two older siblings. One visits home during off times from college. The other attends high school. Kristy enjoys playing with siblings, spending time on the iPad, and gaming on the Wii U.



SCENARIO

Kristy comes home from school, walking through the front door. She sets her backpack down and asks her mom to make a snack for her. Her mom agrees and starts making something. Kristy enjoys playing games on the iPad while she waits, so she grabs the iPad from where it is charging and brings it to the kitchen table to play.

PROTOTYPE

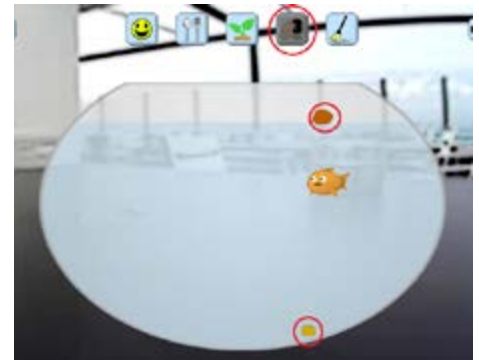
(Storyboard)



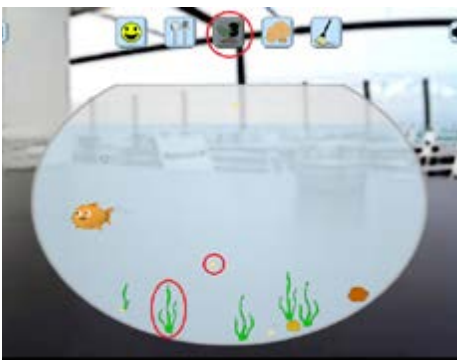
#1 - Kristy hovers the start button and clicks to start game.



#2 - Game starts, Kristy sees empty bowl and hovers the rock icon.



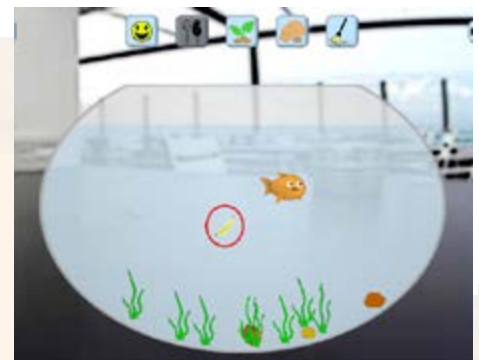
#3 - Clicking the rock icon spawns rocks randomly that drop down.



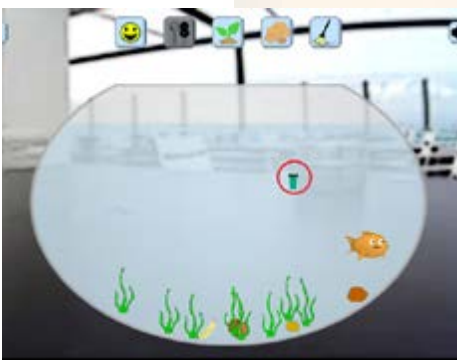
#4 - Seeing the plant icon, Kirsty interacts with it the same way she did with the rock icon.



#5 - Kristy selects the food icon and notices that there is a longer cooldown.



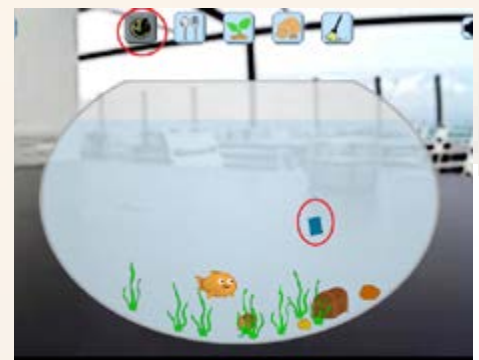
#6 - Clicking the refreshed button, a different food item spawns.



#7 - Kristy repeats the action until the button stops spawning items.



#8 - Kristy moves on to the next button. Kristy notices the fish interacting with the food item.



#9 - Kristy selects the happiness button again and spawns the next item, a book.

PROTOTYPE

continued...



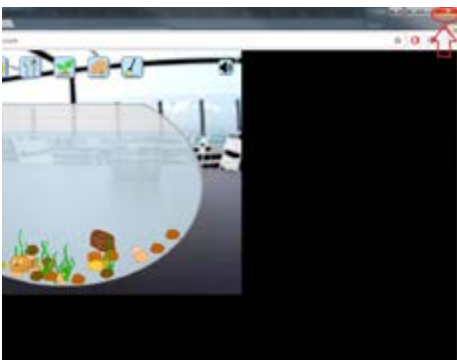
#10 - Understanding what she can do, she restarts the game by refreshing the browser page.



#11 - After playing for a little while, Kristy notices the pause button.



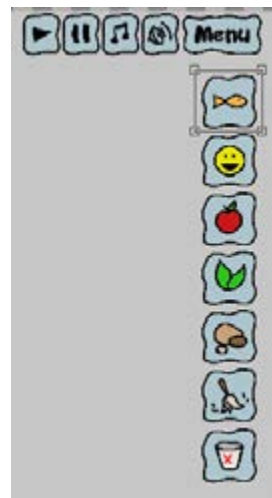
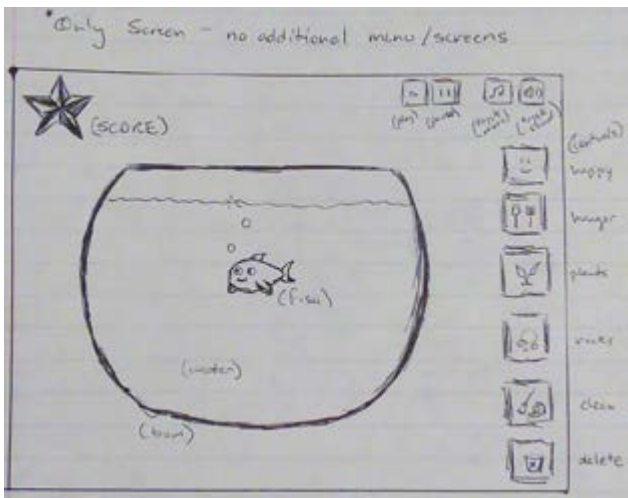
#12 - Kristy clicks the button and the game pauses. Kristy then goes to use the bathroom.



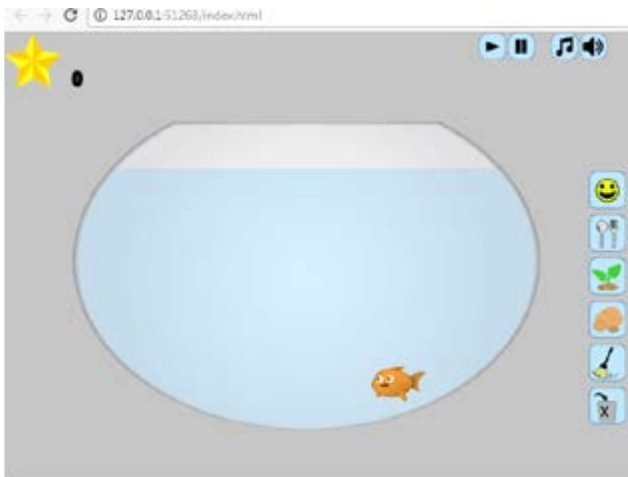
#13 - After playing the game some more, Krisy has to go to school. She sees the browser exit and clicks to close teh window.



BUILD HISTORY



First Build - Image 1* Full layout of possible buttons - Image 2* Buttons colored and prepared for game



Second Build - Sprites from first build lacked polish and were rough - cleaned them up



Third Build - Found what worked and what didn't work - Removed features from game to make more simple

DETAILED DESIGN

General Game Build

- Built in Game Maker Studio
- HTML5 export - generated with Javascript

Resolution

- 670 - 460 (all #s are in pixels)

Sound

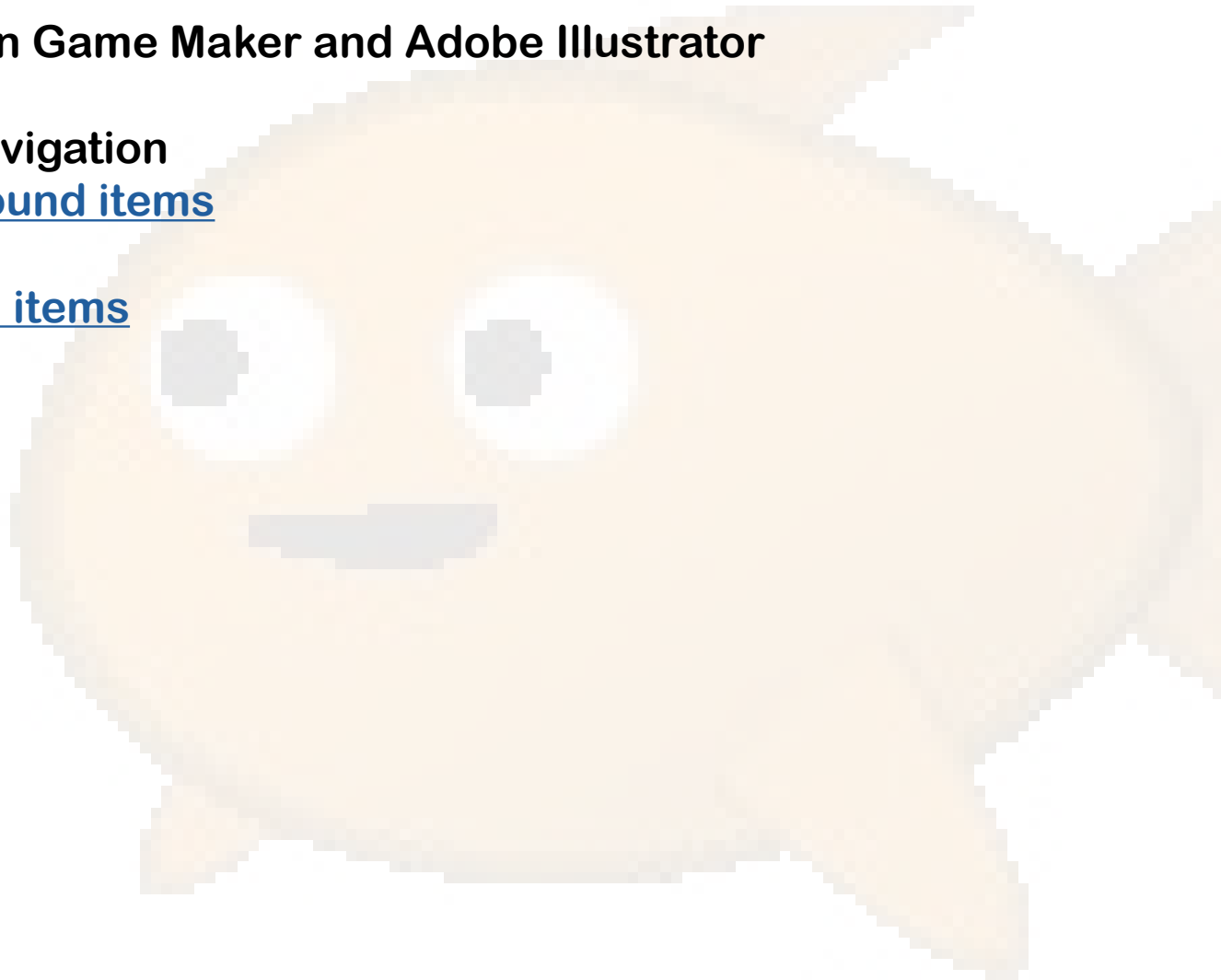
- Six sounds used in game (Created in Mixcraft 6)
- Exported files as ogg - Game Maker converts to mp3

Sprites

- Drawn in Game Maker and Adobe Illustrator

Quick Navigation

- [background items](#)
- [buttons](#)
- [fish and items](#)





Background Image

670 x 460

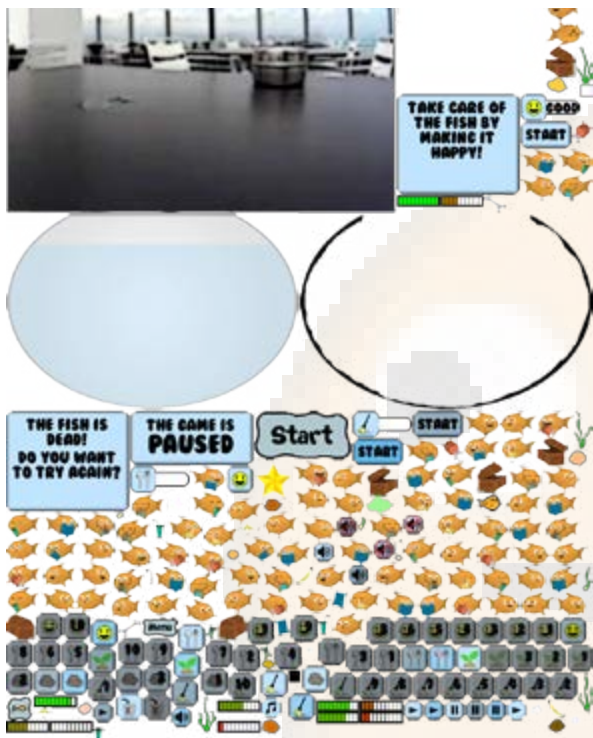
Photo taken and edited with a blur and artistic filter to fit more consistently with the game



Fish Bowl

505 x 338

Sprite used in the background. Outside edge acts as a border to keep object in the bowl once they enter it.



HTML5 Generated Texture

1024 x 2048

When exporting the game, a file similar to this should be generated. All of the sprites used in the application should be located in this image. This is a good way to check if something is missing.

The white area by the upper right of the background image is where the font BubbleGum is - unfortunately it is rendered white in this image. In game, this text will be black.

Note that some of these sprites are unused due to changes between concepts and builds. Basically, no sprites were deleted during production of the game.



Happiness Button

44 x 44

Idle/Active, Idle, Cooldown

- Button spawns 3 items, 1 at a time. Only one of each item can be in play. If all are on the screen, the button will be inactive.



Food Button

44 x 44

Idle/Active, Idle, Cooldown

- Button spawns 3 items, 1 at a time. Only one of each item can be in play. If all are on the screen, the button will be inactive.



Plant Button

44 x 44

Idle/Active, Idle, Cooldown

- Button spawns a single plant with a shorter cooldown (3 compared to 9). Button will become inactive after 12 plants.



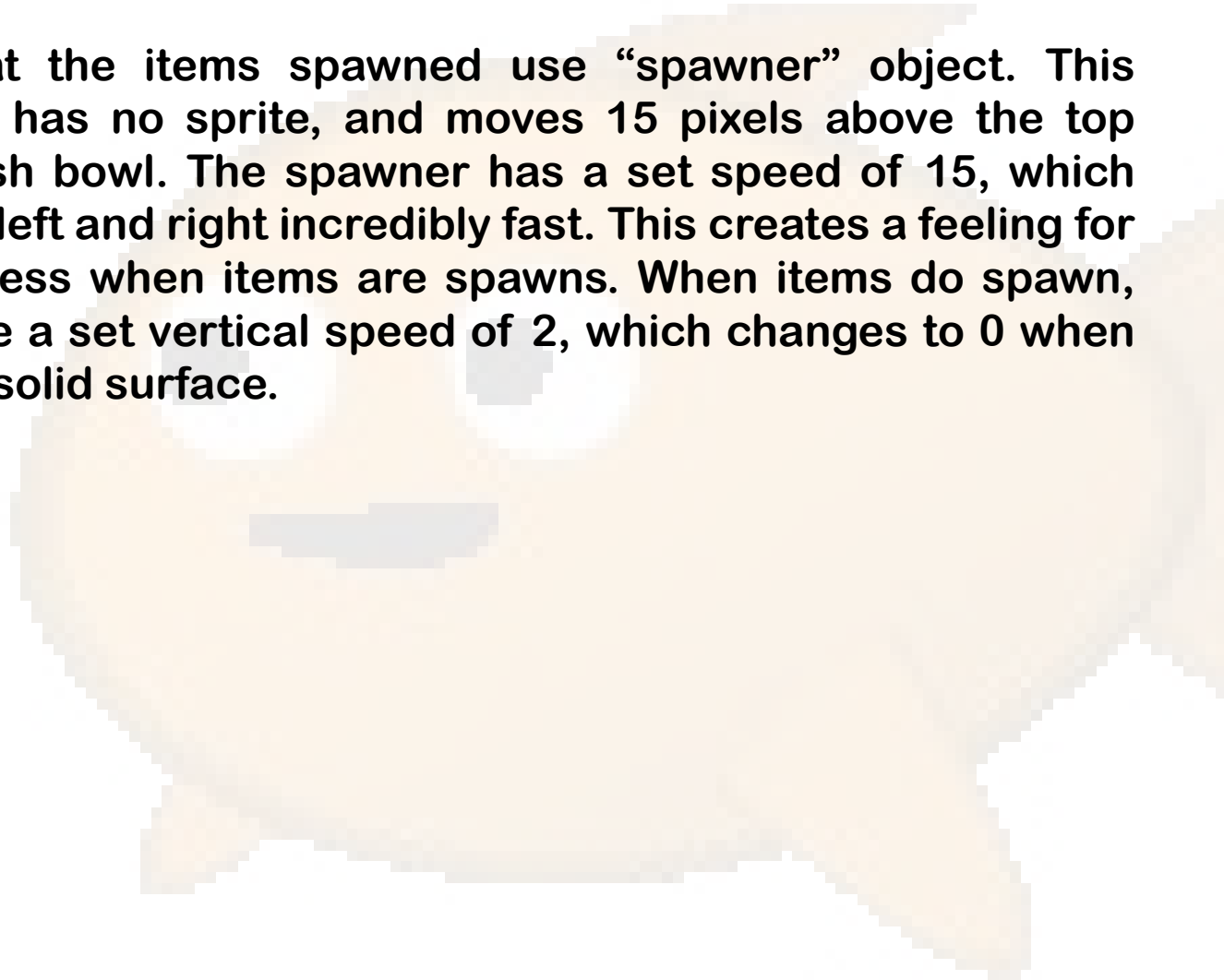
Rock Button

44 x 44

Idle/Active, Idle, Cooldown

- Button spawns a single plant with a three second cooldown. Button will become inactive after 30 rocks.

Note that the items spawned use “spawner” object. This spawner has no sprite, and moves 15 pixels above the top of the fish bowl. The spawner has a set speed of 15, which moves it left and right incredibly fast. This creates a feeling for randomness when items are spawns. When items do spawn, they have a set vertical speed of 2, which changes to 0 when hitting a solid surface.



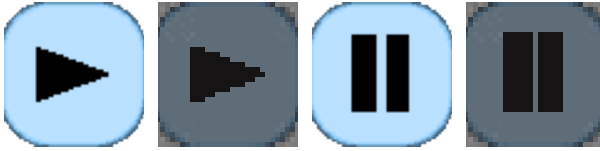


Clean-Up Button

44 x 44

Idle/Active, Idle, Cooldown

- Button deletes all trash items when clicked. The cooldown is similar to the happiness and food buttons.



Pause/Play Button

29 x 29

Idle/Active, Idle (x2)

- Clicking this button toggles a pause feature in the game. This keeps the game state relatively frozen until toggled again.



Sound Button

29 x 29

Idle/Active, Idle (x2)

- Clicking this button toggles sounds on and off.



Menu Pop-up

212 x 173

One image for starting the game, Another for when fish dies

- This is an empty sprite for in-game text to be displayed. This example displays the text at the start of the game. If the fish dies, the text will change to "The fish is dead! Do you want to try again?"



Start Button

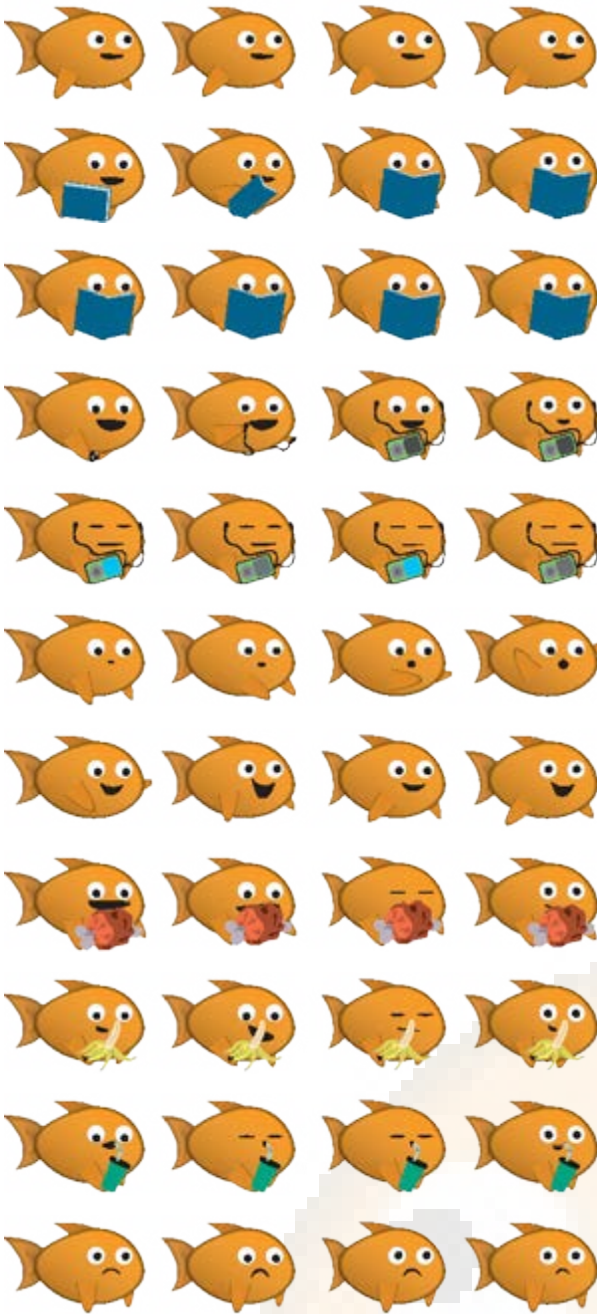
85 x 42

Idle/Active, Hover

This button toggles off the pop-up menu and spawns a fish at the center of the bowl. (bowl.x, bowl.y)

One last note about the buttons. All buttons has the same click sound when toggled. All buttons become inactive when the game has a pop-up message, and when the pause is active.

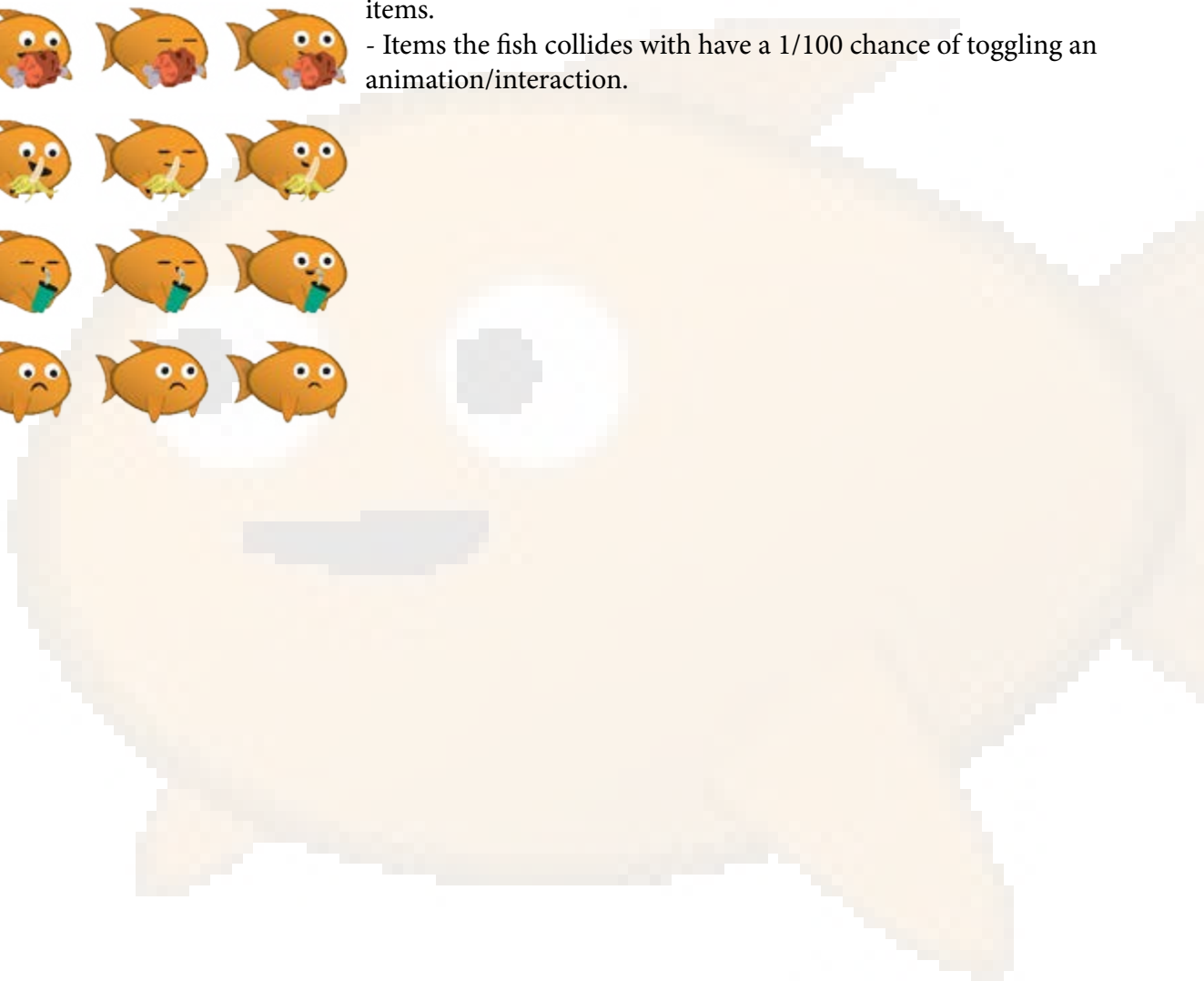
Being designed to be played on the browser, the user can use browser icons to refresh the page (hard restarting the game) and exiting the page or browser will close the game. This is why the app does not include these buttons.



Fish
 600 x 100 (strip)
 60 x 40 (individual sprite)
 (Sprites - also added reversed sprites in Game Maker)

Idle
 Pick Up Book
 Read Book
 Pick Up MP3
 Play MP3
 Open Chest
 Fish Laugh
 Fish Eat Meat
 Fish Eat Banana
 Fish Drink
 Fish Sad

- Fish has an inactive timer. If it doesn't interact with anything or sits in 'green clouds' that spawn from trash, the fish will eventually die.
- Fish movements are randomly generated, moving between 2-3 pixels per second in any given direction. An extra argument to move down has been added to help the fish interact more with items.
- Items the fish collides with have a 1/100 chance of toggling an animation/interaction.





Happiness Items

114 x 114

Chest

Book

MP3 Player

- These object are generated by the happiness button and sink in the water until they collide with a solid surface. When activated by the fish, an animation will be toggled. After, the book and mp3 will be deleted. The chest will remain to be activated more.



Chest

114 x 114

idle/animation 1+2

- When activated by the fish, the chest opens and spawns bubbles. Every 5 pixels of the chest opening can spawn a bubble. Chance of this is 1/50.

Bubbles are made in-game with a grey circle, with a white reflective spot. This object follows a right/left path with a vertical speed of -5. The bubbles disappear when they collide with the edge of the bowl.



Food Items

114 x 114

Meat

Banana

Drink



- Food items spawn like the happiness items, but when used, they turn into trash. Trash have a 1/50 chance of spawning a generated green cloud that can made the fish sad and decrease it's life span my -5 a second. The fish by default has 9999, which is roughly 5 1/2 minutes of life, if left inactive.



- Trash items can be deleted with the Clean Button.

This concludes the Detailed Design for Fish Simulator.

UPDATE TO SPEC

Change Recommendations

- Make 'pause' state more obvious
- Make 'rock' icon metaphor stronger (more obvious)
- Make 'clean' action more obvious (other than the cooldown)



Addressing the 'pause' recommendation, a notification box has been added to the game. When the game is unpaused, the prompt goes away.

Addressing the 'rock' icon metaphor, the icon was simply redesigned. There is little research behind this change due to lack of time. Hopefully the change makes it more obvious.



Game Paused - Notification
210 x 90

Screen appears when game is paused, and goes away when game resumes play.



New Rock Icon Design
strip 294 x 42 - individual = 44 x 44

Behaves the same as previous rock icon specification.



Addressing the 'clean' action not being as noticable as it could, a spark spawner was added. This spawner will follow a path around the fish bowl and would spawn a little roughly drawn spark that would fade instantly - giving a shimmer effect. After the spawner travels the set path, it is deleted until the clean button is clicked - in which this process repeats.

Stars are pixel drawn all white - 20 x 20 with glow effect