

Effie Sampson

Search For a Star

2024

Development Diary

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XB3992 – Brief

Name

Effie Sampson

Subject Area/Areas

Blueprints/Mechanics/Systems Design

Brief Project Description

Following the Search for a Star brief I will create a fully playable prototype combining two things that aren't conventionally found in game together.

I intend to combine building sim with tycoon game.

Proposed Final Outcomes

My last project I intended to create a robust inventory and crafting system but I had chosen something too complex for the level I was at. For this project I would like to implement a simpler inventory system to gain a better understanding of the concepts I didn't understand.

To gain understanding of placing and manipulating objects in the game.

To look deeper into user interfaces and menus to give the game a more polished feel.

Dependencies/Unknowns that may affect the Project

My confidence has taken a hit since I failed to reach the desired outcomes for the last project, so I will need to push past this.

The sfas brief is very broad meaning research is going to be a huge part of this project to get a slid concept of what I want to produce.

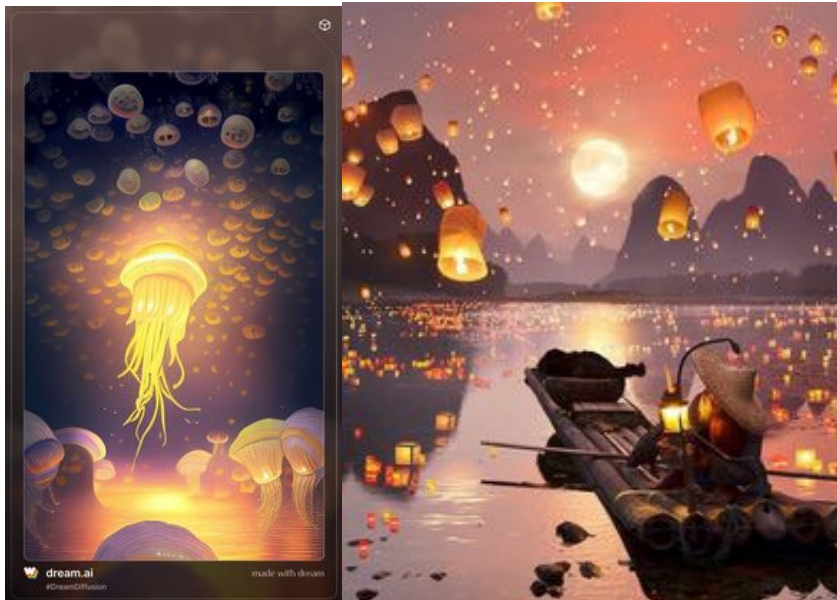
Strict cut of date, will need to keep on top of paperwork as I go.

Brainstorming – Initial ideas

Jelly fish and building Jelly fish and electronics Under water – above water Water and fire Bugs and bug spray Religion and science	Horror game about making friends. Farm sim – shooter Christmas and summer Comics and Realism Inanimate objects and living things.
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The First Idea

I keep returning to Jellyfish, I want to explore the mechanics of how they move and make a cute peaceful game. I began searching for inspiration on Pinterest because I find art very inspiring when it comes to game play. There I found the bellow image of jellyfish which really reminded me of Chinese lanterns, two things that don't conventionally go together. And I wanted to explore if there was a game within that.



This inspired the idea of playing a jellyfish that believes it is a Chinese lantern and tries to leave the water to be with the other lanterns. On a wider scale I see this as being a cute narrative game about finding a place to belong. But from a game sense, what could this look like mechanically? Would it be fun? And how can I make it unique?

Absorbing light? Maze puzzles? Perhaps absorption of abilities like Kirby, but with a focus on puzzle solving not combat.

At this point I took off into unreal and hit a block.

Power up ideas?

Glowing plants and fish to collect more glow more power? Or different colour glow for different power?

Colour, or always movement? – float up and down.

White glow – torch

Blue glow – electric

Red glow – scare off predators.

Purple – Call reinforcements.

After about a week of trying to make this work, I realised that I just couldn't get it to work. I loved the idea of the word and the story, but mechanically I didn't feel I had the skills to turn this into something I would be proud of alone. I also struggled generating gameplay ideas. This was just before Christmas, so I took some of the holiday to mull it over and decided that to push this further would be a waste of the little time I had left, and I returned to idea generation with only three weeks before the deadline! But I'm glad I did because my next idea had a much more solid foundation.

The Second Idea

Building sim, train track building, finish and the train follows the track.

Years ago, I had a conversation with my children about Fortnite, I'd said that they should have a Fortnite season where they introduce trains, and within the fort building mechanics, they should add tack pieces so players could build track for the trains, destroy or re rout enemy trains, stand on the back and shoot from the trains. Long story short, my kids laughed at me, but I maintain it was a cool idea. Then just last year, Fortnite introduce trains! Of course, I first told my kids "Told you so!" when they loved it, but then, it was quite different to how I'd envisioned it. There was no change to building mechanics, and I do understand why this wouldn't work for Fortnite, but I still wanted to play with that idea. This is what inspired the idea to have a modular built track that players could place down and set their train off, though keeping with the brief I added in food delivery and Chew Chew was born.

A Spinning Plates/tycoon game – food delivery, café style game play levels, delivering food to customers.

- *"Business simulation games, also known as economic simulation games or tycoon games, are games that focus on the management of economic processes, usually in the form of a business."* While the definitions vary a little, this quote (From Wikki) is the most consistent idea of what a tycoon game is about, in my project the tycoon element comes from running a restaurant, managing its reputation and money based on points system. Players gather points and build reputation by choosing the most efficient delivery rout (not just the shortest) with the limited resources.
- *"Construction and management simulation (CMS), sometimes also called management sim or building sim, is a subgenre of simulation game in which players build, expand or manage fictional communities or projects with limited resources."* The wikki definition of a building simulator it exactly as you'd expect, I want to incorporate a modular building element but on a smaller scale to fit together with the tycoon theme. For this I thought of using a similar block placement and inventory system as Minecraft, allowing players to see at a glance what they have to use.

Modular building sim – simple, similar to Minecraft.

Name? Rail Restaurant (wait no that sounds bad...), Tearoom Tracks, Diner Disorder. A pun perhaps? Trac-fé, Trac-sterauant... I had a naming brainstorm with some friends, and I'm actually devastated I didn't come up with this one, but, Chew-Chew. That's the one.

Unorganised Thought

Food, placing the food on to the train. More than one customer, different foods in inventory need to go to different customers. Limited track resources to deliver the food. Build both tracks and a restart button for whole level?

Points ideas. Heat of the food, longer track = colder food. Bumps in tracks, building over a bump to take a short cut, but there is a chance the drinks could spill. Excited customers get points bonus. Extra carts could deliver more food for a speed deduction. Extra carts to pick up new ingredients on the way back.

<https://criobite.com/archive/whizzball/>

<https://www.eurogamer.net/tren-a-game-within-a-game-is-a-window-into-the-spirit-of-media-molecule>

<https://afkgaming.com/gaming/honkai-star-rail/honkai-star-rail-logistics-planning-event-best-routes-for-phase-1-to-4>

The more I think about implementing the pints system the more this game reminds me of the event "Logistics Planning" in Honkai Star Rail. In this the player planned a rout on a mini map before getting a points total score.

Game Pitch

Chew Chew

Chew Chew the food delivery train!

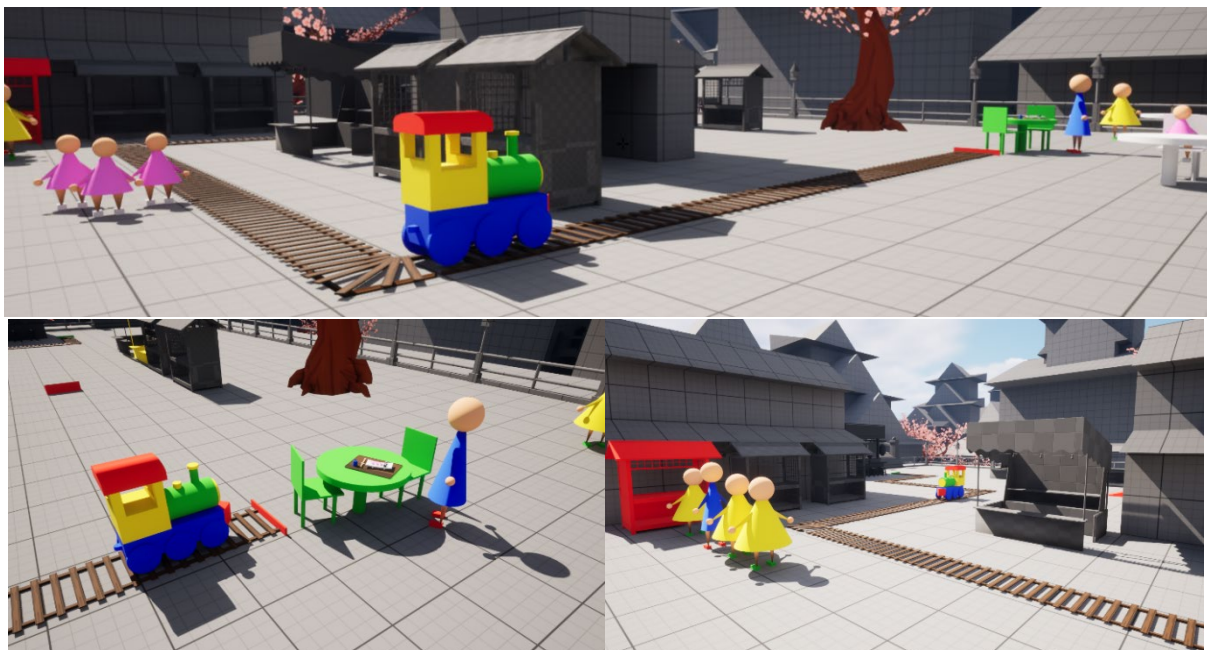
This game combines simple building mechanics with restaurant tycoon style player goals spanning across different puzzle-based levels.

The simple fun gameplay will see the player loading up Chew Chew, planning the most optimal delivery route and building a track to deliver food to their restaurant's customers. With each level comes a brand-new world theme, and more complex delivery routes, where the player will need to find loopholes to get their track built with the limited resources.

The cute style of the game makes this a relaxing puzzle game perfect for any age audience.

USPs:

- A unique blend of puzzle and tycoon style play.
- Relaxing game play.
- Accessible for any age range.



Development Diary

Having left myself with little time I dove right in, starting a new project in Unreal Engine.

In the past I have built a Minecraft style game that I thought would work great if adapted a little for building the track. And I already confidently knew how to do this, so I could create a good foundation for the main mechanic quickly.

Building blocks

I started with blocks before tracks to break it down. I set up two block classes, one basic block and one interactive block with an interact interface, with the idea that the interactive block would have the functionality to spin and connect the track.

Before implementing any logic in the blocks, I set up a line trace from the camera to check for the interact interface. If the line trace hit a normal block, I just wanted to spawn a block. I set the location as the hit location with snap to 100 and a check for any other blocks currently at that location, ensuring that they wouldn't swan on top of one another.

After testing this out I made a simple track mesh within unreal and attached it to the block. I left the block in place but turned off visibility so that I could use the block to trigger collision events and easily swap and change the track pieces since the pivot point on the quickly made track mesh was not centred on the mesh.

Back in the interactive block blueprint I set up the logic that on interacted with, add 90 degrees to the rotation so the player can spin and connect the track.

After this I set up a basic inventory to allow the player to switch which track piece they wanted to place down. I did this using a structure bp variable and filling the array elements with an image a block type and an amount. At this point the images where all blank, but I wanted them to implement a HUD later down the line.

Destroying Blocks

A big part I knew I wanted was for the player to be able to change their mind, building the track in real time even if the train was moving. I have the idea that if things where not going as they expected, they could quickly move the track and change the direction of the train. So, for this it was important that the player could also destroy track.

I first set up basic functionality of the track being destroyed when the player holds in the mouse button, again taking from the Minecraft functionality. I applied a free basic wood material to the planks and created a dynamic material within the blueprint, that would fade to black to show the destruction of the track.

I connected this to the player inventory and also added the inventory to the spawning function to track the amount of track in and out.

After this I started to implement a simple HUD to show the amount, and decided it was time to add icons to the inventory struct. I first worked on the functionality of the widgets, setting up a main HUD, to nest all the widgets in. I created a simple slot widget and toolbar widget, adding the slots to the toolbar. In the player character I set temporary number buttons to switch between slots.

The Core Mechanic

Up to this point, not much of what I had done was new to me, so it all went smoothly.

I knew I wanted the track to be possible to build in real time, so I wanted the train to move along the track square by square. Breaking down the logic my first thought was to do a simple collision box, move actor across one piece then scan for the next piece. The issue was the train actor knowing “Was the train connected?” “Was the track facing the right way?”. I then considered if this would be easier done with a small spline on each piece of track, Or perhaps and AI train.

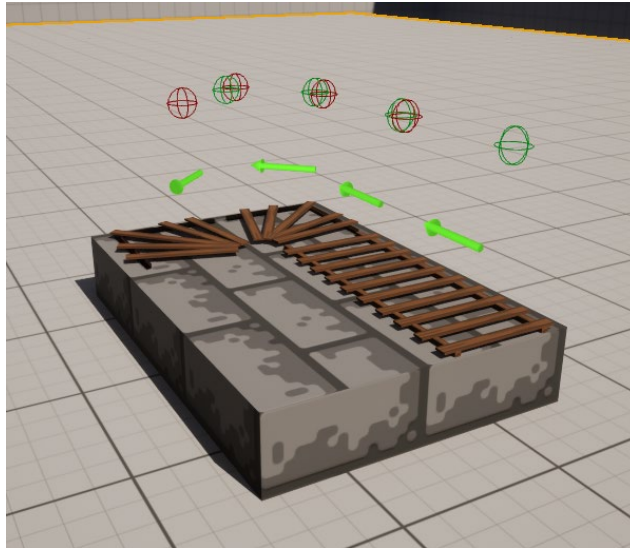
Breakdown of the logic, what do I ned the train to do?

- *Move functionality, either by spline or by timeline.*
- *Find a location, scan for the track. (Tick to change track in real time?)*
- *Is the track facing the right way? Is the track connected? (Attach an arrow that handles the search, not the train itself. The train is going to cover too much track.)*
- *Move along the track, then scan for the next track. (needs to be smoother, can I add to a distance held in the train each time the train scans rather than try to move right away?)*
- *End location*
- *Restart the train from the starting point. (Perhaps just picking up and putting down the train?)*
- *There might need to be a specific starting and ending track to avoid the player starting the train from a halfway point. Player can only place the train down on a starter track. (The player can't put the train down on a normal track piece because the functionality is for the track to spin. (Maybe a simple Boolean on the start and end track? Or a predesignated start and end. A static start point?)*
- *At the end, check the destination. (Did reach correct customer? In later levels, did train contain the correct food for that customer.)*

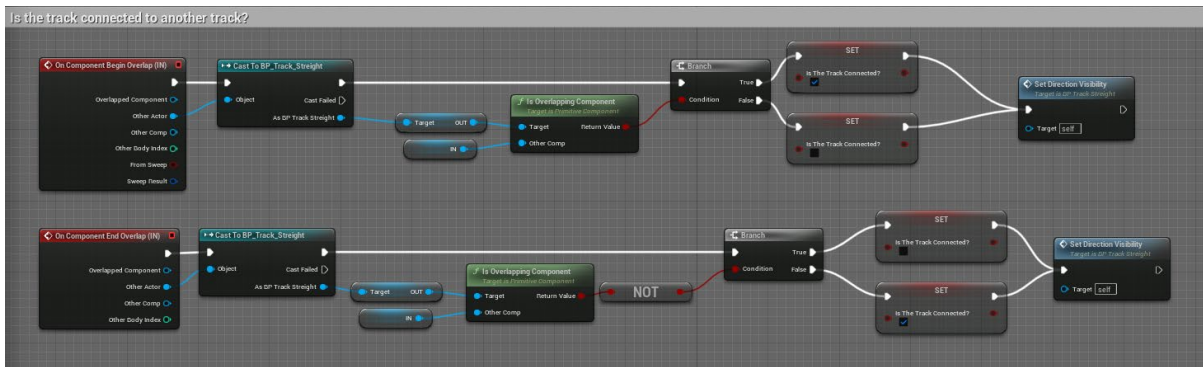
I made the train actor within unreal with block shapes, I attached a trigger volume to the font of the train.

I set the track up with a literal toy track in mind. Putting an arrow on one side, and a trigger box on the other side as the receiver of the arrow. With a Boolean activated when the arrow enters the trigger box, this messed with the collision of the track placement because of the line trace checking the snap the track to 100 squares. The overlap was counting towards that and not allowing the pieces to be placed next to one another. I played around with the collision settings for a while but couldn't figure out how to have the box overlap the trigger without blocking the placement.

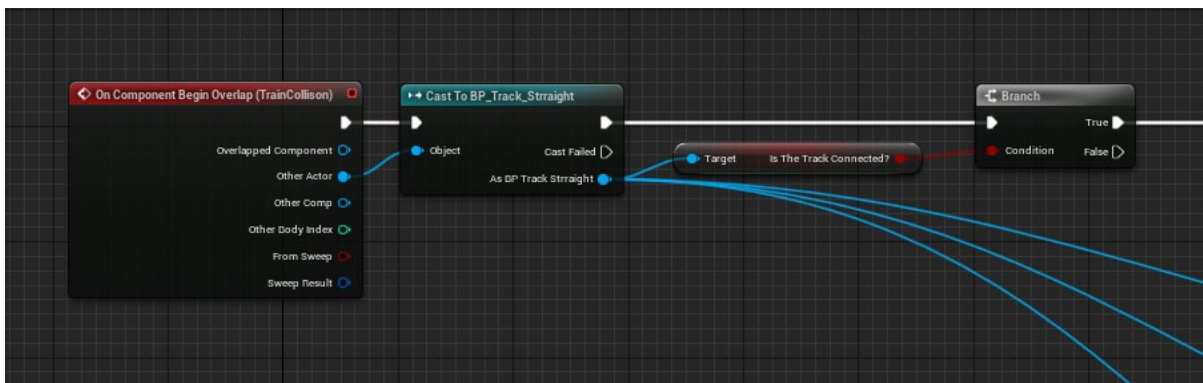
I instead explored the option of putting a small spline on each track piece and having the train with a trigger box looking for the spline. This again created a similar issue, but my knowledge on using splines is more limited than my knowledge with triggers, so I eventually went back to the original idea and used two sphere collisions (An in and an out) and kind of cheated a bit by just raising them above the 100 square spacing. Which did inadvertently fix another issue of being able to place the tracks floating on top of one another, so I stuck with this workaround.



I added an is overlapping node that would check if the “out” trigger was overlapping the “in” trigger of another piece. I used this to set a Boolean, indicating if the track is connected or not.

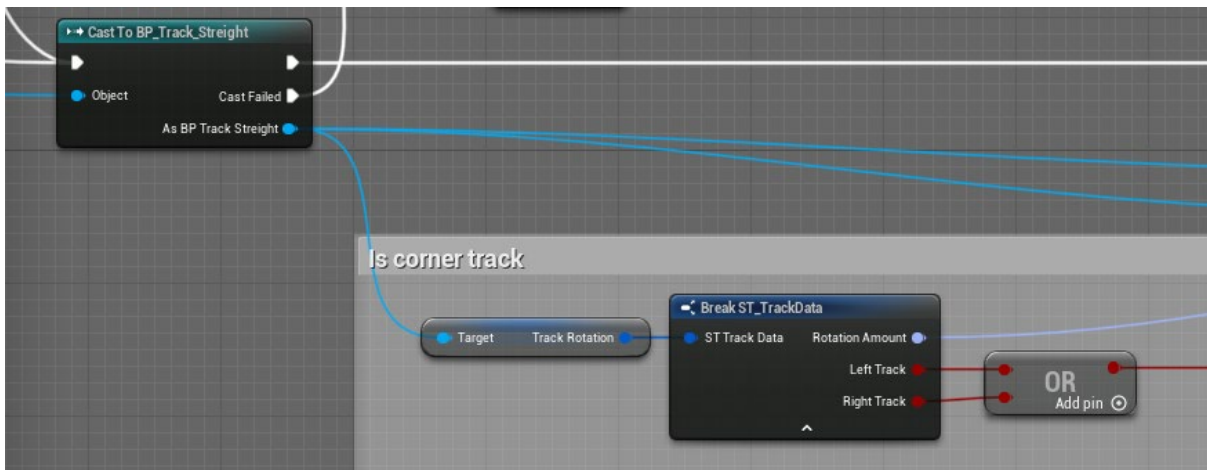


I then moved on to handling the movement from within the train Blueprint. At the front of the train, I placed a block collision casting to the track, checking if the track was connected, and then moving from the “in” collision to the “out” collision. The only trouble with this is that the train would touch the next collision before the first one was finished with. Making the train speed around the whole track. To avoid this, I set the movement timeline to update the to only scan for the next piece when the timeline had finished, which did work, but made the train move jittery.



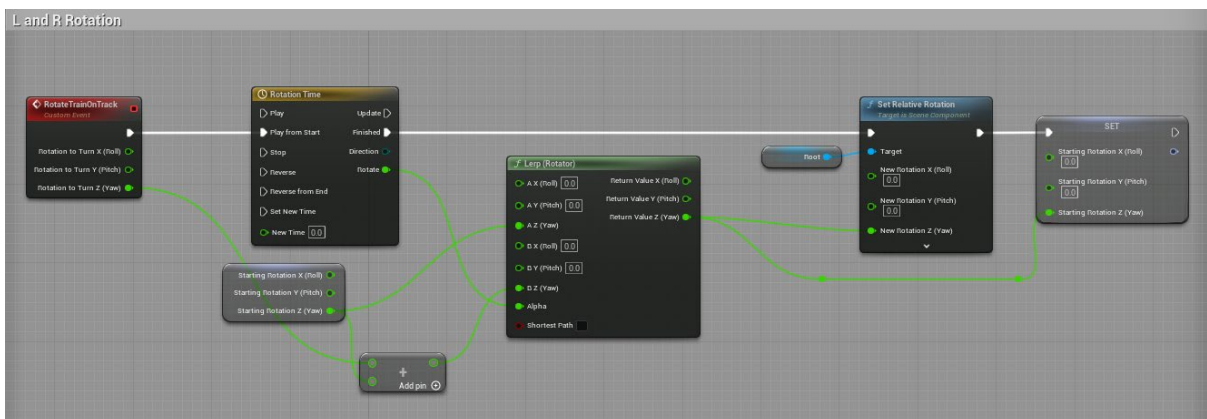
Welcome to the Rotation Station

With the forward motion working, I moved on to the corner track. This part took me a while, I'm wondering if there are some fundamental things about how rotation works that I simple don't understand, anyway. I wanted the train to know when it had cast to a corner piece, since all pieces were a child of the straight track, I just added a structure that could hold track information for each different piece. Then added a check within the train BP.



For a frustratingly long time, the rotation just wasn't playing nice, it would go backwards and forwards and be unable to trigger the next track because it would be facing the wrong way.

I decided to add turn data to each corner keeping the rotation to one set amount right or left to avoid the complication of relative rotation. This worked, but when I connected a timeline, it would spin out of control before landing in the correct position. Worried about the time I had sunk into just the rotation, I temporarily set the rotation to on finished with the intention of returning to the rotation nightmare later. (Spoiler alert, that never happened.)



Adding the points

I want to set up the points with balance in mind, with the train being affected by different elements as it drives by. The player can pick up the track and re-rout, pausing the movement and giving them time to plan something better with their remaining track. I want the goal to be finding the most efficient rout, not just the quickest, although speed will affect the overall points total.

To start with I tried to break down all the ideas I had about the points system and make it easier to understand. For this I made a table with what affects what. Each one fitting into a category that the player would see represented on screen with progress bars that would vary as the train runs its rout.

Points System

Main game loop - player gets a food order and delivers it to the correct customer by building the track for the train. During this loop a number of things will need to be balanced to ensure a high points total. The player can see their progress by three progress bars displayed on screen and they can choose to pause the train and change the track.

Food On Tray	Heat Of Food	Reputation of Stall
Taking bumpy shortcuts	Time it takes to get to customer. (length of track, speed of train)	Stealing rival's customers
Dogs	Re-heat stalls	Children excited by the train
Collecting taster samples	Fuel for train to boost speed	Insects in the food
	Hot plate boost	

I wanted to keep the maths simple as I set this up, because urgh math! But also, because it was going to take a lot of UI and blueprints all working together and I wanted to have everything in place before I worried too much about balancing. I had a general idea of what would be “good” or “bad” to the points total, and I kept the max as a 100 in each category.

I first set up the BP actor parent that would affect the points, and added an interface called “Points affecters”.

This is as far as I got with the points because I went off to find some meshes on Sketchfab and got distracted!

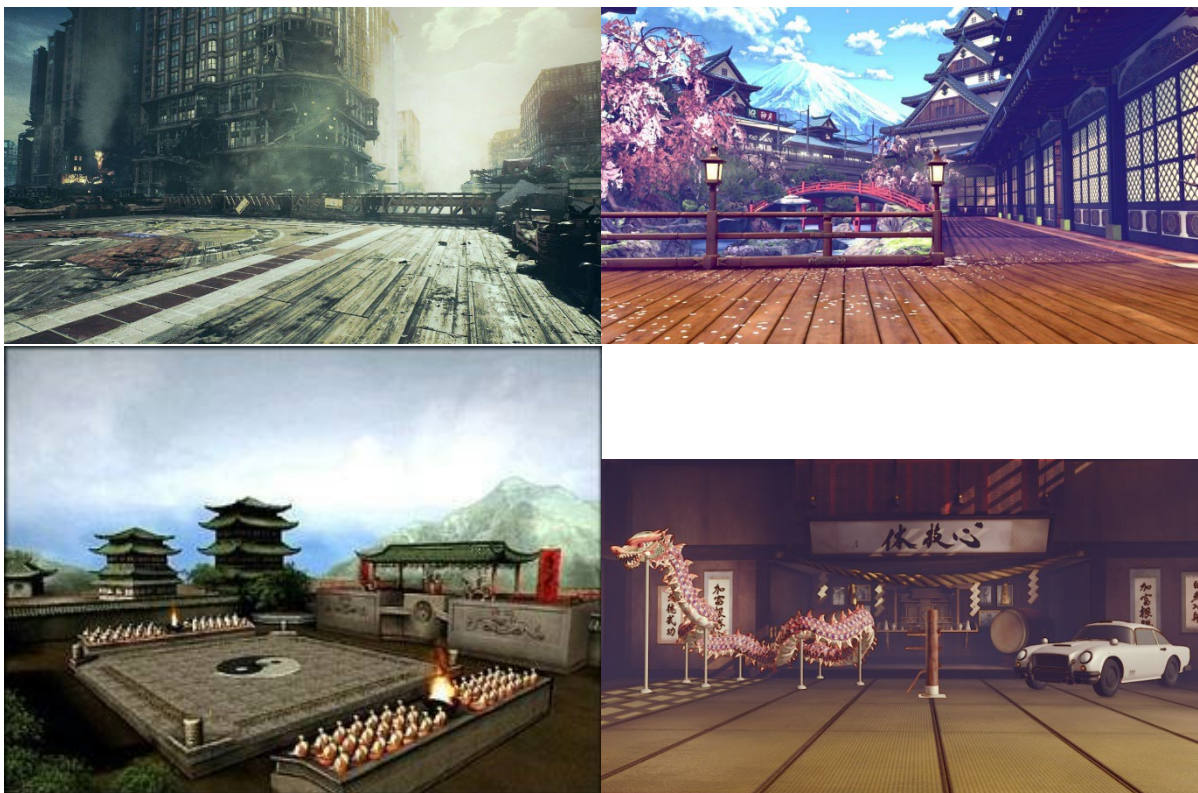
So...

Layout and visuals

Up to now I'd been working in an empty square and testing out the train and track mechanics.

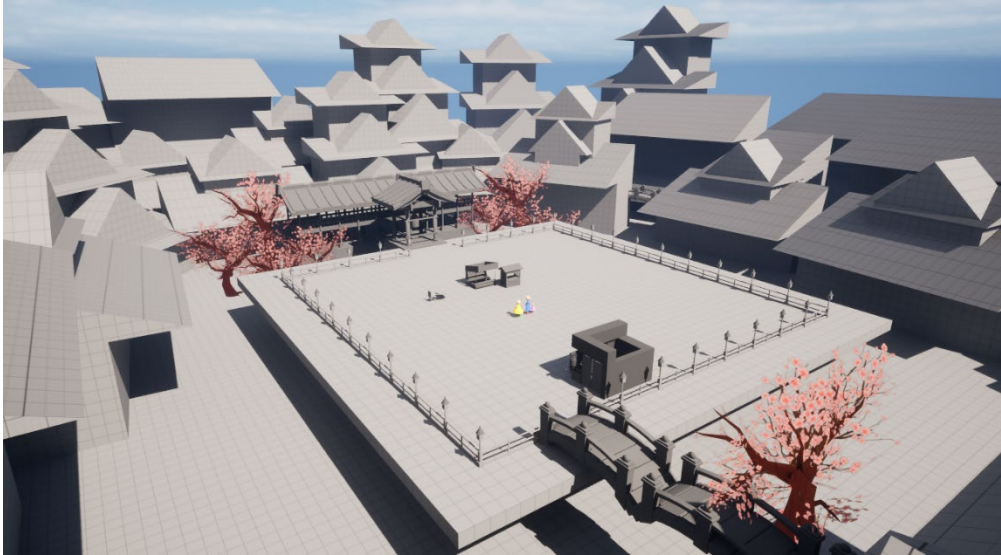


And now I wanted to start bringing it all together. I already had some inspiration for a simple level. I was thinking about a Japanese market, but I wanted the game space to look almost like an arena, I thought it could get too complicated to be building tracks in any space too complicated, such as through streets and complex maps, I wanted the space to be easy to navigate with a focus on the puzzle. In my mind I was picturing something like a street fighter or Tekken arena.



As well as creating a few basic shape meshes in unreal, I downloaded some small highlight pieces to try and get the general feel across without spending too much time on visuals. I decided to get meshes for the stalls and other points affecters, but generally keep the rest block out.

I only used the mesh in most cases and not the materials, unless the mesh looked particularly odd with no material. The result was a basic square area that I could use as a little playground to test more mechanics and start planning the level design.



Back to the Points!

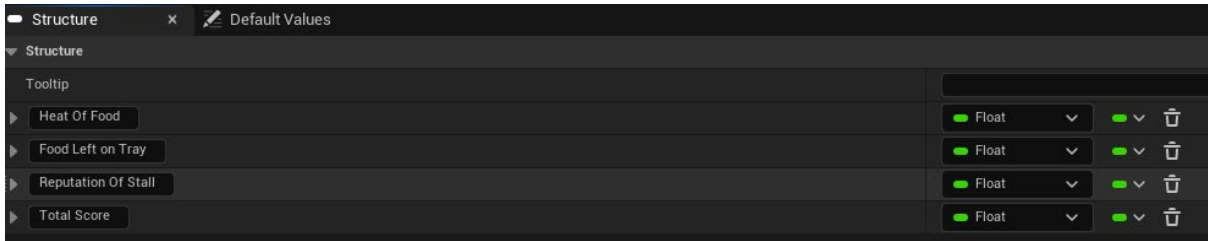
Following my little detour, I returned to setting up the points system. I spent some time building more of the UI, adding three progress bars to the main HUD and turning the inventory bar into something more permanent.



I used icons from Noun Project, sometimes adding colour if it felt necessary.

The top bar represented amount of food on the train, at the beginning of the game, this would be set to 100. The second bar would be the heat of the food, again, this would be set to 100 at the start of each round. The bottom bar represents the stalls reputation, this would be empty at the beginning of the round.

Once the progress bars were set, I added save game feature and created a structure to hold the score information within the save game.



I'll admit, math is not my strong suit, so I set this up in the only way I could understand it. Which did mean that each points affecter blueprint would need its own individual local variable, sending that information to the game instance, adding and subtracting off the values of each category before setting the total within the save game.

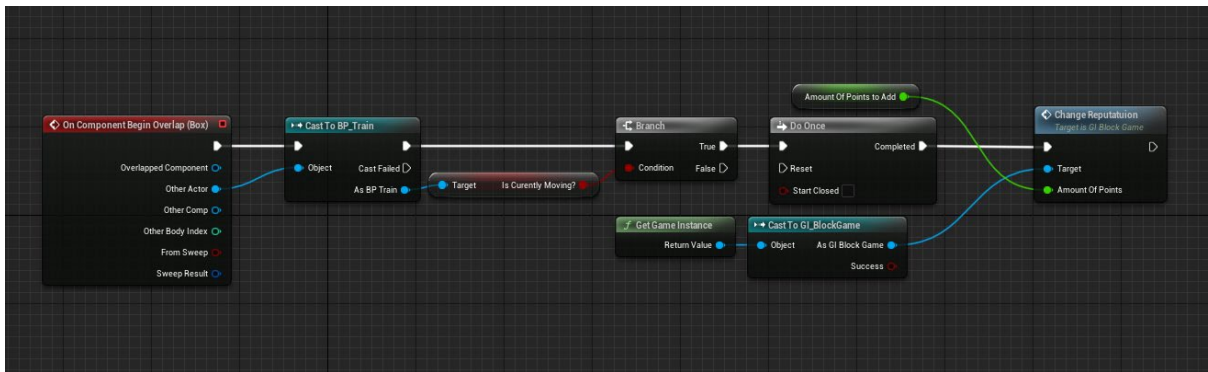


Figure 1: Example of a rival stall Blueprint

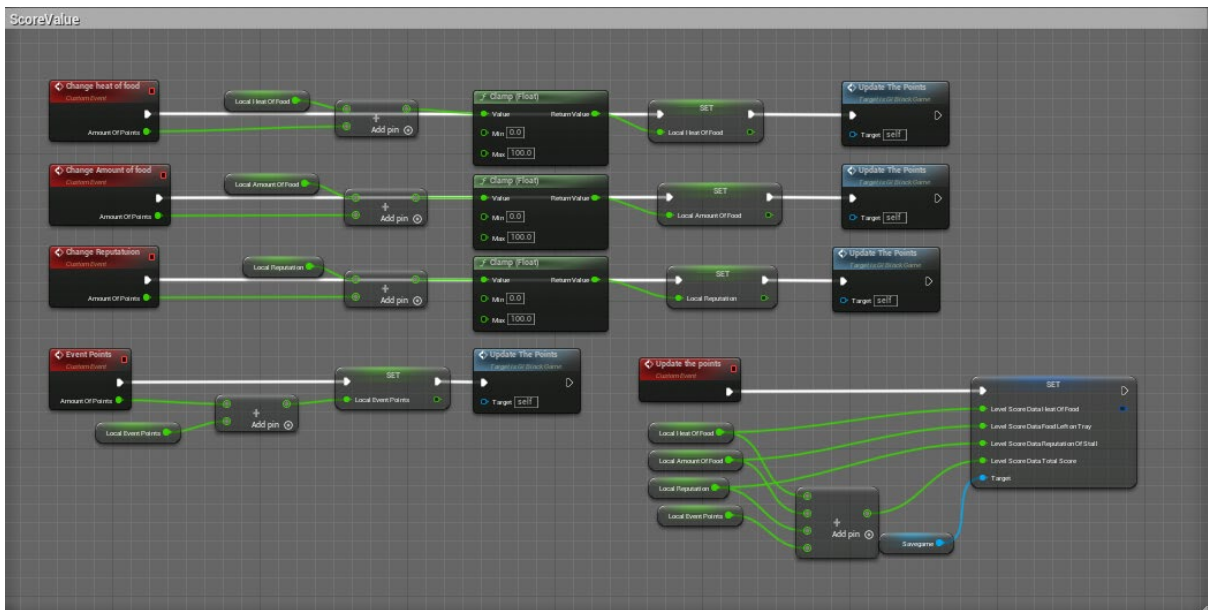


Figure 2: The math within the Game Instance

After implementing this, I did a lot of tests playing and balancing the points. Going back to the points table I made, there were far more positive impact points affecters than negative ones, so I wanted to make the impact of the negative factors bigger.

With the heat of the food, I wanted this to be consistently going down, which does make this quite a big influence on the points deduction. I thought about putting this on a tick connected to Boolean since I already had a Boolean within the train blueprint, but this just seemed like overkill. The movement of the train was already looping to check for the next track and stop if

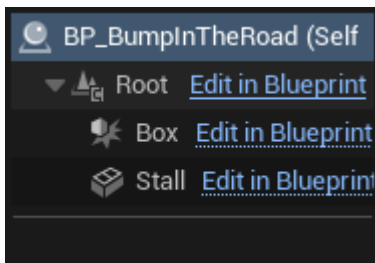
the track is not connected. So, I decided to deduct points for each piece of track travelled rather than a tick or timer.

As I play tested the points system I came across a few issues with the track, first I decided that the starting point should absolutely be static, and that the train needs to only start on that piece otherwise players could exploit the building mechanic and put the train wherever they wanted, I also had to add a check within the points affecters not to add or deduct points while the train was static.

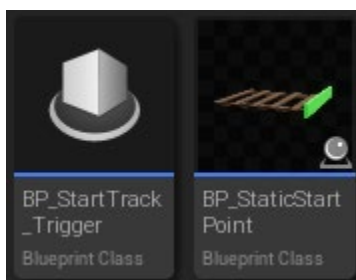
MORE Issues with collision

During this test play process, the one issue that kept cropping up was collision. Collision that would stop the train from moving, or collision that wouldn't trigger on the start point after I had made it static. All the issues felt like they were caused by different things, but they all boiled down to one thing! The root of the object and what was connected to what.

My first issue was the start point, I wanted the existing trigger to reset the points and have it cast to the train and turn on collision events for the train, making sure that the train could not start anywhere else, but when I tried to, I could no longer place the train. Eventually I made a separate trigger box and just put that down with the start point, turning off all collisions on the start point. Genius... right? No, because this obviously did not help me understand what was going wrong in the first place, and so the same issue came up again with the "bump in the road" blueprint. I needed the train to ignore the collision of the mesh, but not the collision. The way the blueprint was set up, I had attached the collision to the mesh. So, the collision settings were being inherited. Tell me why I did not even consider this and sunk hours of time into trying to figure it out. Once I attached both separately to the root, all issues were fixed.



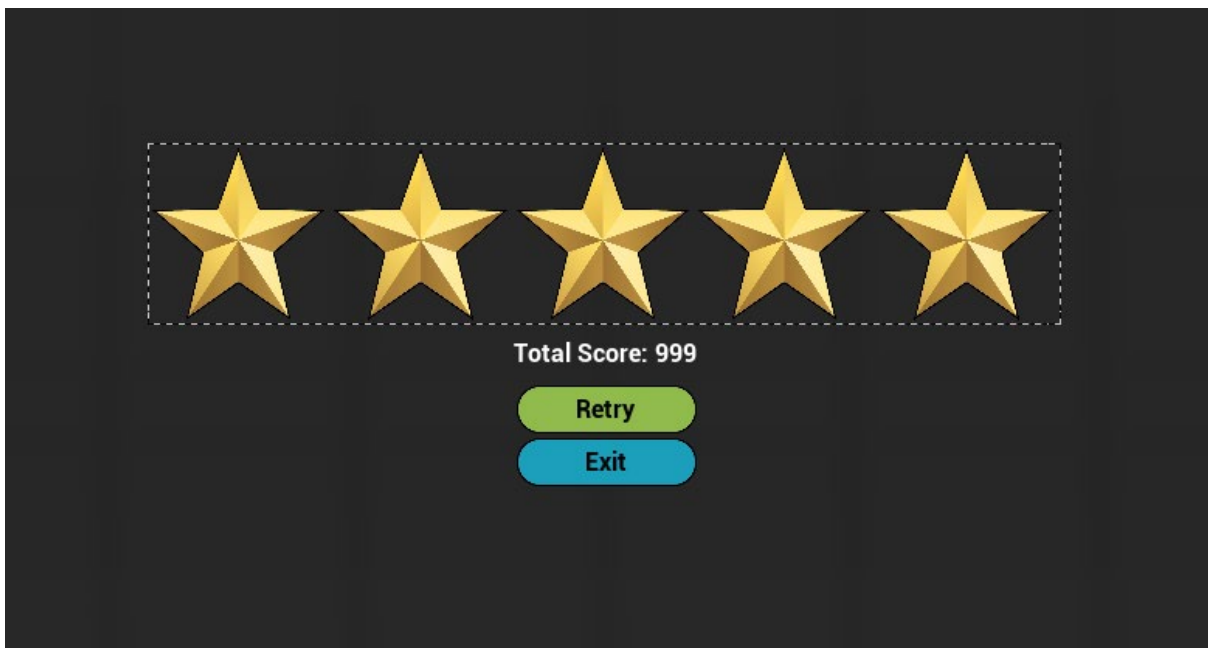
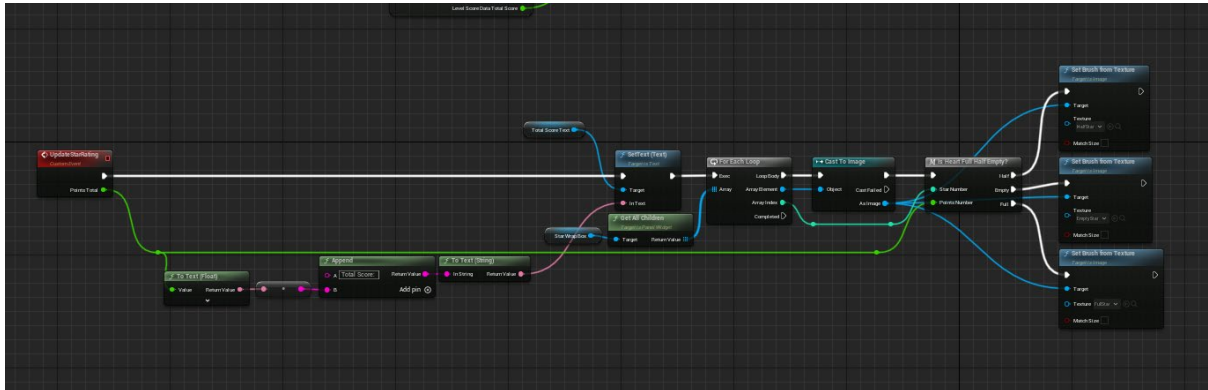
I'm keeping the separate start point as a memento though.



More UI, and extra mechanics.

After my ego my was burned by the simple fix of the collision, I moved on to implementing more UI and really trying to tie everything together ready to send to my play testers.

I set up a star rating page with total score shown. The math within the macro used for the star rating itself was not my own work. The maths was altered from a health system I implemented from an online course I completed. In the course the same math was used to fill out a heart life meter, and I altered the max amounts slightly to fit the star rating.



I then added a pause and play icon to the main HUD to indicate when the train was moving.

I added a main screen and a pause screen then worked on the how to play page.

How to play

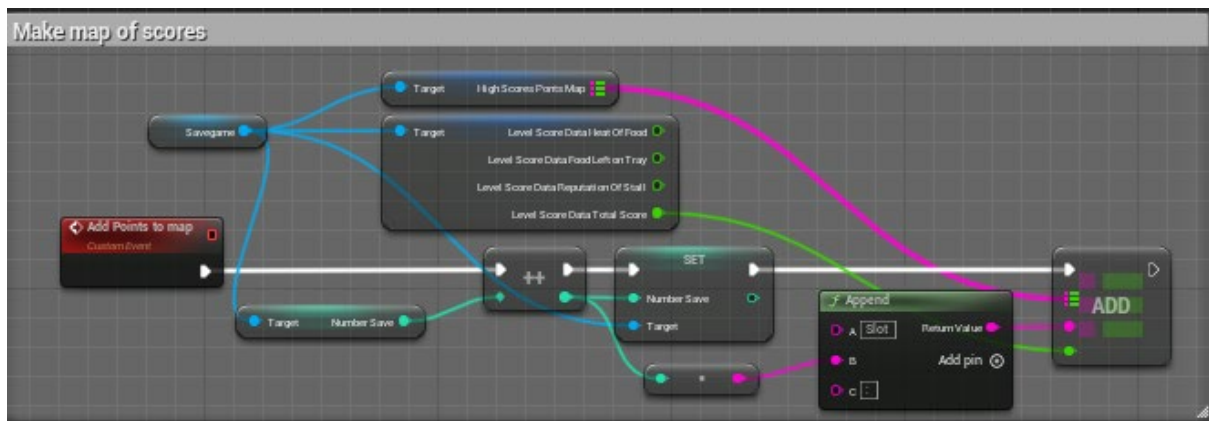
Chew Chew is a food delivery train and you as the player are tasked with deciding Chew Chew's route. The green dining table indicates the customer you need to deliver to, but you choose the path. The most obvious track may not always prove to be the most profitable. As the train trundles down the tracks, the food will begin to cool down, a shorter track might get the food to the customer piping hot, but taking shortcuts sometimes leads to food falling off the train. As well, adding a quick detour to delight some children with a miniature train might be worth the boost in reputation. This is for you to decide.

Balancing these three factors is essential to keep business "On track" 😊

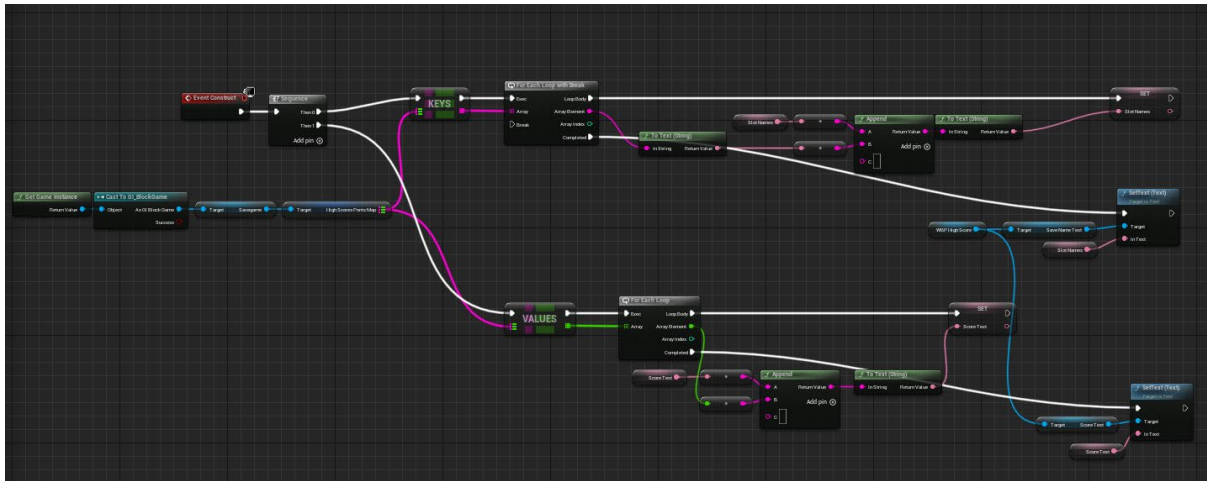
You start with a limited number of track pieces. Use the top-down view to plan a route and build your track, when it's ready, set Chew Chew on the start track and watch him speed (slowly) to his destination. Losing too many points? Don't worry, you can always pick Chew Chew back up and change your track.

High Scores

I wanted to add a high scores page but have never tracked anything like this before. I decided to do this using the save game I already was storing the points within and add a map of high scores. I was originally going to do this as a nested high score widget, adding it to a scroll box, but I couldn't figure out how to pull the information from the map in order. So, I went about it in probably a messy way. I decided to give the map name a basic slot name going up in increments and saving them in the save game map.



Then for the widget I called this information and appended it all together in a column.



Quality of Life Addition

I'm not sure this needs its own whole section, but the last thing I did before sending this to my test players was add a camera above for bird's eye. I quickly iterated a level layout within unreal and packaged the game.

Licensing info

MESHS

Main Ramen stall: "Japanese Ramen Stall" (<https://skfb.ly/6SJIJ>) by YANGGA

Bridge: "Bridge Model For Diorama" (<https://skfb.ly/6TGqw>) by quornstar

Stall simple: "Japanese Market Stall" (<https://skfb.ly/oMHMO>) by Fadema

"Food Stall in Edo" (<https://skfb.ly/6VZoD>) by minakami3737113

Tree: "Hand Painted Sakura Tree" (<https://skfb.ly/6CAJZ>) by HenryBoadle

"Hero Piece" Large Shrine: "Japanese shrine" (<https://skfb.ly/oulqu>) by GreenG

Sushi: "Sushi!" (<https://skfb.ly/69owv>) by elbert.nathanaeltkg

Dog: "Shiba" (<https://skfb.ly/6WxVW>) by zixisun02 is licensed under Creative Commons Attribution (<http://creativecommons.org/licenses/by/4.0/>)

MENU ICONS

Train by GreenHill from <https://thenounproject.com/browse/icons/term/train/> target="_blank" title="Train Icons">Noun Project (CC BY 3.0)

japanese food by Amethyst Studio from <https://thenounproject.com/browse/icons/term/japanese-food/> target="_blank" title="japanese food Icons">Noun Project (CC BY 3.0)

Food stall by iconfield from <https://thenounproject.com/browse/icons/term/food-stall/> target="_blank" title="Food stall Icons">Noun Project (CC BY 3.0)

Heat by Adrien Coquet from [Noun Project](https://thenounproject.com/browse/icons/term/heat/ "Heat Icons") (CC BY 3.0)

pause by H Alberto Gongora from [Noun Project](https://thenounproject.com/browse/icons/term/pause/ "pause Icons") (CC BY 3.0)

Keyboard Key by Arthur Shlain from [Noun Project](https://thenounproject.com/browse/icons/term/keyboard-key/ "Keyboard Key Icons") (CC BY 3.0)

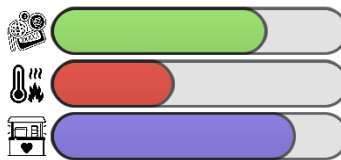
Level design

The levels in this game are designed to be puzzle focused. The direction the player chooses is up to them, so I have included multiple possible routes per map, and what the score total would be for each route, though this would vary from time to time when the player must make a choice to get points from one area or another.

The player path is guided using points as the incentive, and the amount of track the player has, though it is entirely possible that a player can make use of fast building to pick up track behind the train and place it in front of the train.

Mechanics

Progress bars – The player must balance the progress bars showing the amount of food, heat of food and stall reputation. The player always starts with 200 points from a full tray of food, and full heat, but as soon as the train begins moving the heat will start to decrease.



Points affecters – There several things in the environment that increase and decrease the players progress bars.

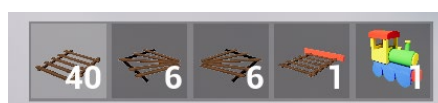
Points System

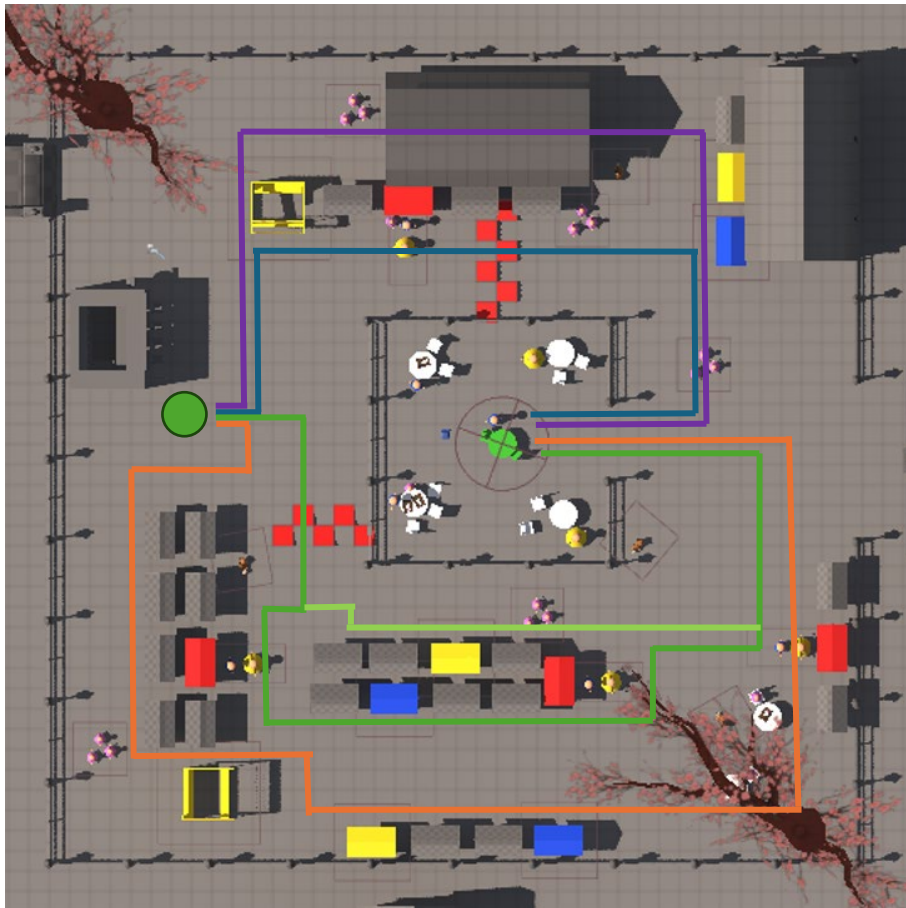
Main game loop - player gets a food order and delivers it to the correct customer by building the track for the train. During this loop a number of things will need to be balanced to ensure a high points total. The player can see their progress by three progress bars displayed on screen and they can choose to pause the train and change the track.

Food On Tray	Heat Of Food	Reputation of Stall
Taking bumpy shortcuts	Time it takes to get to customer. (length of track, speed of train)	Stealing rival's customers
Dogs	Re-heat stalls	Children excited by the train
Collecting taster samples	Fuel for train to boost speed	Insects in the food
	Hot plate boost	

- The Customers Table**
This is your goal
- Rival stalls**
If you see a queue of customers driving by helps get word out about your stall, raising reputation.
- Complimentary stalls**
These stalls offer food samples, boosting the amount of food.
- Fuel Stalls**
These stalls offer Chew Chew a little speed boost.
- Groups of children**
Children love trains, fact, no arguments. Zoom by for a reputation boost.
- Bump in the road**
Taking a shortcut can sometimes lead to an uneven surface, knocking food out of the train.
- Dogs**
Cute as they may be, dogs will steal food from Chew Chew!

Limited track – Each level has a set number of track allocated to the player. The player can choose to plan their route by utilising the top-down menu or jump in a bit more recklessly and see what happens. They can also pick up track behind the train to place ahead of the train if they are quick.





- Player Start
 - The Goal +50p
 - Rival Stall +30r
 - Food Stall +20f
 - Fule Stall
 - Children +30r
 - Bump -20f
 - Dog -20f
- The train also loses heat over time, approx. 2h per square.

In this map the player starts with 50 track pieces and 5 of each corner. A five-star score is 300 points.

The purple route is 57 straight track and 4 corners. It hits a speed boost and two groups of children. This route is approximately 249 total points.

The blue route is the shortest. It passes a speed boost, 3 reputations, it goes over bumps but can recover the food from the stall at the end. Approximate points 283. A small detour to get more fuel can boost this to 303 points. Making this rout with the detour, the most optimal route.

The green track being a longer track requires the player to collect and put down track. The player can collect three reputations with a small detour and recover the fallen food from the bumps, but the route does not benefit from any fuel. The approximate score for this route is 220.

The orange route is the longest and hardest to pull off, requiring a lot of collecting and placing track. It does benefit from a speed boost, there are only 2 reputation boosts and an extra food stall that would be redundant. The player could detour but since this route already requires so much track, this would not be easy and likely not worth it. The total score for this route is around 210, making it the hardest and lowest earning route.

In some earlier iterations, the map was too spread out and open, making the play space feel a little boring when building the track. I decided that buildings should all be close together with lots within the space to interact with. In the final level design, some routes require the player to pick up path behind the train and place ahead of the train as it's moving.



Play Testing Feedback

Playtesting was done in stages, first my children play tested, and I watched how they played and made notes, then I sent a link to some friends and asked for their feedback. Some could send forms back, some just sent messages.

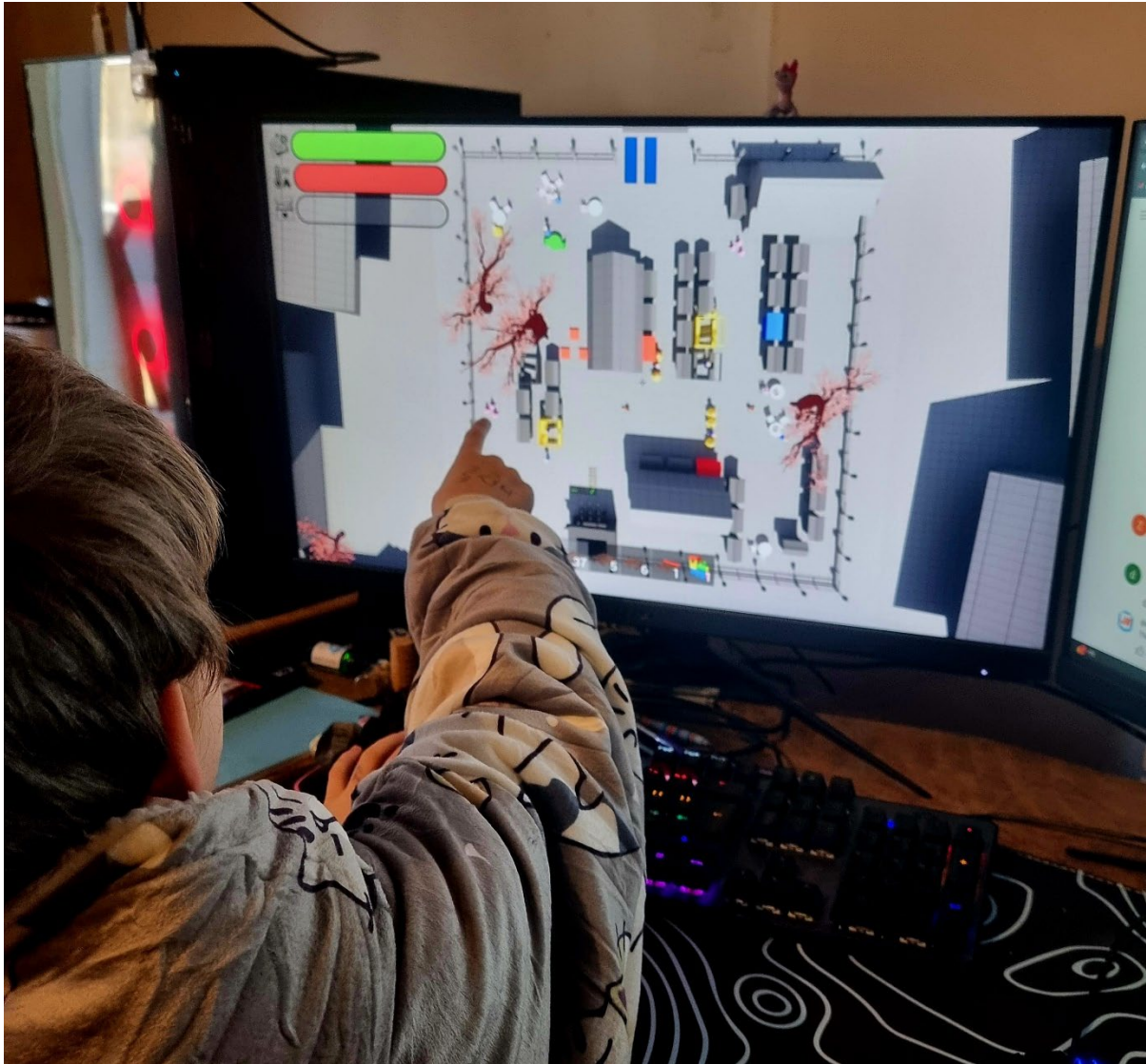
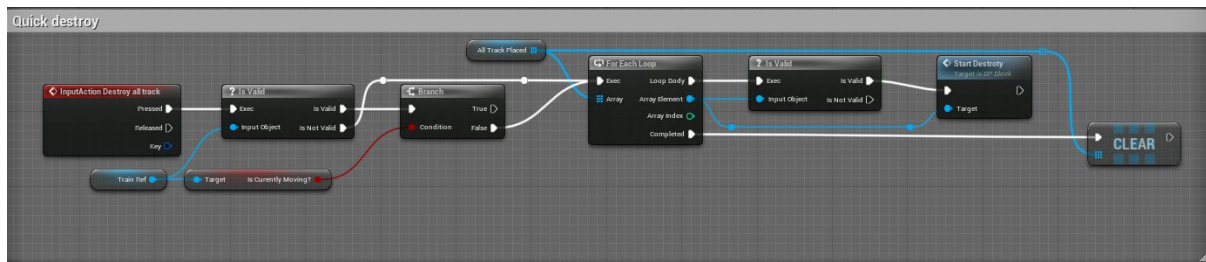


Figure 3: My son being my first test player and biggest fan :)

Some of the issues mentioned and what I did about it.

- The first and easiest fix was to do with spelling errors.
- It was unanimous across all test players that a toggle to show the top-down view, with a mouse cursor visible, would be helpful. Which I completely agree with and implemented right away.
- One player mentioned the time it takes to delete a track piece if they wanted to rebuild a large portion of the track. To fix this I implemented a “Pick up all” track button, as well as lower the hold time to destroy the track.



- An issue was flagged with collision, which I hadn't noticed myself. I need to revise the collision on each item, as some need the train to pass through and some don't. As it is currently set, all are following the same collision rules.
- Another big glitch that was less noticeable in editor was an error with the reputation bar not resetting when replaying the level. I will ensure that the start trigger also resets this to default value.
- A couple of issues with the general layout and movement of the train which I was aware of. The smoothness of the movement is something I would like to revisit if I had more time, and the level design is something I intent to iterate on more.
- An issue that came up with two test players was that it was confusing that the queue for the rival stall wasn't the trigger, the stall itself was the trigger, meaning they didn't understand why they missed out on points. To fix this I'm going to look at changing the location of the trigger or look at fixing this in within the level design.
- When a player is stood on track and turns that track, they are suddenly turned with is due to the physics. This is something I had also noticed and it's on a lower priority to fix if I have the time.
- The train doesn't set off, if the first track is a corner. This is very similar to above, if I get the time, I will investigate what is causing this.
- Two players suggested visual or audio cues to show that a score change has triggered. This is something I would like to implement if I get time to do so.

Final Thoughts

I think from my own playthrough and from the feedback received, the concept of the game has some potential. I think with more time to add visuals, sounds, some exploration of more complex levels etc. this game could be a lot of fun.

I think it achieved what I set out to create. It appeals to the target audience and aside for some minor tweaks, it works smoothly.

This is a project I will be proud of, and one I could see myself spending more time on refining in the future, adding more levels that vary in difficulty. Adding different arenas and themes to play in. I do think there would need to be some clever additions to getting around the map in future levels to keep the puzzles from feeling too limited. Perhaps a space themed cafeteria with teleport tunnels, the options could be really fun to play around with.