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**Game Designer**
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# Bartender Simulator

## #VRGame #Simulator

Bartender Simulator is a VR game that simulates bartending. Players can experience both the fun of **bartending and how the world of alcoholics** is.

## Made With

MAYA

## Pitch Video

https://www.youtube.com/watch?v=Rv3MXZEU47U

# Inspiration & Research

Wine has a long history dating back to the Neolithic Age. Since ancient times, it has been used as a ritual object and banquet drink. Nowadays, many people use alcoholic beverages to **relieve worries, release stress or seek excitement**. The number of alcoholics has been increasing year by year. According to a survey released by WHO in 2019, about **2.6 million people died** worldwide due to alcohol consumption. Of these, **1.6 million died** from non-communicable diseases, 700,000 from injuries and 300,000 from communicable diseases. This shows that alcoholism has **serious negative consequences** for alcoholics and others.


www.cdc.gov/alcohol

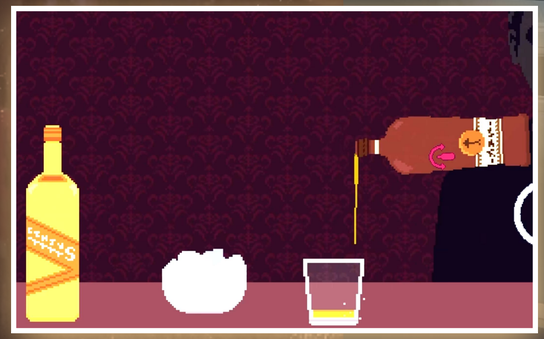
# Background

Alcoholism can cause a lot of harm to both the **alcoholic** and those **around them**.
Hence, a game is needed to warn and prevent such things. This game uses the theme of **mixing drinks** to let players experience the interactive fun. Then, after drinking, **hallucinogenic effects** are produced to **warn players to drink in moderation** instead of indulging in alcohol, lest they bring irreversible consequences to others and themselves.

# Art Reference


**Cooking Simulator**

**Half-Life: Alyx**



## Relevant Games

This game references the bartending gameplay in **Red String Club**. In it, bartender Donovan mixes drinks like Greedy and Arrogant ones to get info about Supercontinent executives using their emotions. Executives drink and reveal info, **reflecting their human emotions and psychology**.
Player chooses ingredients according to recipe, affecting customer's **state of mind**.
Bartending interaction is interesting and resulting drinks are beautiful, inspiring me to make a bartending game.

# Game Flow

**Start**

**Strawberry Gin Tonic** —Drink→ **tipsy** → Drunken level +1

**Margarita** —Drink→ **intoxicated** → Drunken level +1

**Flame Tequila** —Drink→ **blacked out** → Drunken level +1

**drunken level** → **≥2 ?** → **Death**

## Strawberry Gin Tonic

- Prepare Highball cups
- Place ice cube
- Pour 1 jigger of strawberry gin
- Pour 2 jigger of tonic water
- Agitation

## Margarita

- Prepare Margarita cups
- Prepare Shakers
- Dip the rim of the glass in salt
- Place ice cube
- Pour 1 jigger of Tequila
- Pour 1 jigger of Cointreau
- Juice of half a lime
- Shake
- Strainer filter and fill into cups
- Garnish with lime slices

## Flame Tequila

- Prepare Shot cups
- Pour 1 jigger of Tequila
- Cover with a slice of lime
- Take a spoonful of ground coffee and put it on (bar spoon)
- Top with Spicy minced millet
- Pour a few drops of Tequila
- Strike a match
- Light the ground coffee

# Menu Develop

**Pick Up Wine**

**Agitation**

**Filtration**

**Shake**

**Strike A Match**

# Direct Grab

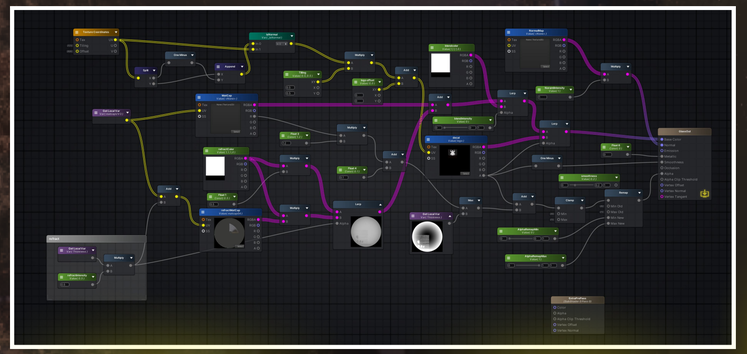
When there is an overlap between the player's hand and an interactable object, the player can press the **GrabTrigger** in the VR grip to pick up the object.
Using this, players can pick up bottles to **pour** wine, **shake** glasses and **strike** matches, among other actions.


# Distant Grab

When the player's finger points at the interactive object, a white ray can be seen pointing at the object. At this point, the player can press and hold the **GrabTrigger** button in the VR grip to lift it up and release it, and within a certain distance, the interactive object will **fly to the player** in a parabolic motion with precision.
The player simply holds the object in a “direct pickup” position. This eliminates the need for the player to walk to the object every time they want to interact with it, and allows the player to **focus on the interaction itself**, reducing the chance of being distracted by other things.

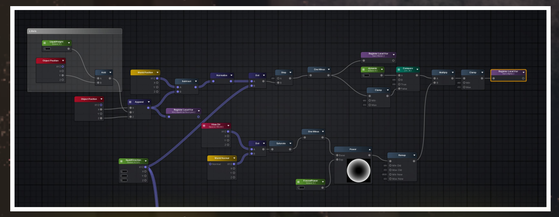
# Shader Effect

## Glass Bottle With Liquid(Out)



For the outside of the glass, the **MatCap** technique is applied to use only one texture, reducing the performance footprint.
In addition, for ASE Shader, the Texture **Coordinates** node is used to change the tiling size of the UVs, sample a stain map, and overlay it to add realism to the glass.

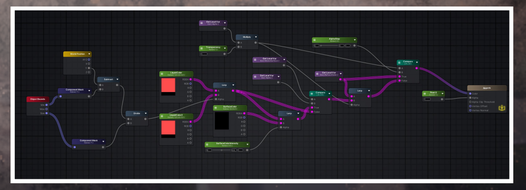
## Glass Bottle With Liquid(In)



The inside of the glass is divided into three parts, the **empty liquid** part, the **liquid surface** part and the **liquid** part.
The more complicated part is the calculation of the liquid part. (As the sketch shows I simulated math functions in my code.)

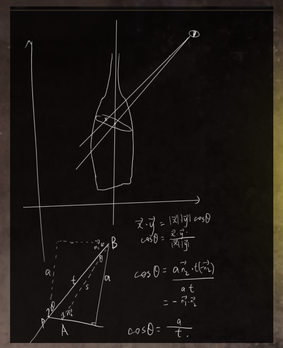
For the liquid itself, I applied the **Fresnel** effect equation

```
float fresnel = pow(1 - saturate(dot(viewDir,normaleDir)),_FresnelPower);
```



And as a movable glass, the liquid level physical simulations need to follow the **movement** of the object and generate the corresponding state.

The information such as liquid surface orientation and liquid surface height obtained from the state of the object is computed and passed in by the **C# script**.



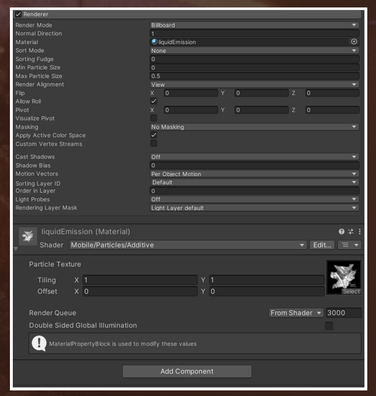
# Process


As for **refraction** Effect, I used **hlsl**'s refract function Result = refract(View, Normal, IOR); and use this to sample the color of the back of the object's occlusion to get the refraction effect.

Also,Cocktail shades are mixed and the liquid will have a **color gradient** effect.

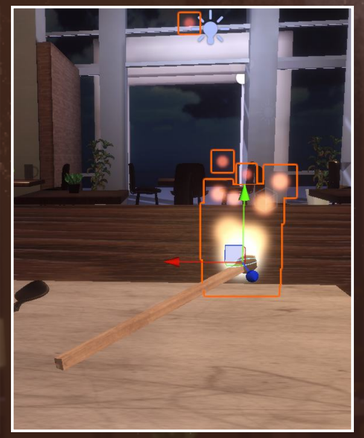
# VFX Design

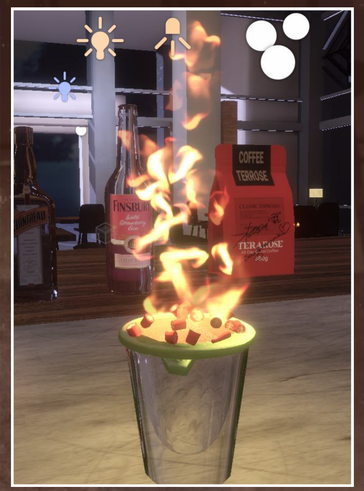
## Fluid effects of wine



Using Unity's **Particle System**, I can simulate the features of liquid by changing the particle's shader to Additive type. Besides, I added **gravity, initial velocity size and direction** to the particles, so that the liquid flowing out effect when pouring wine will be more realistic.

## Flame effect





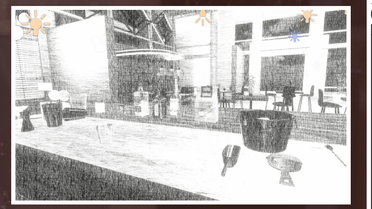
## Post-processing Effect

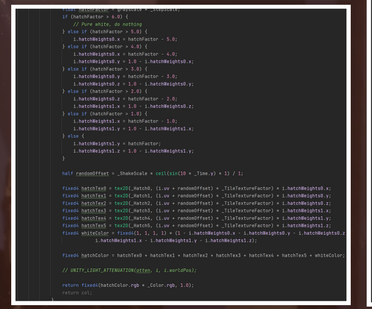
When intoxicated, the player gets a feeling of drunken vertigo. To create this feeling, this game adds some **full-screen post-processing** effects.

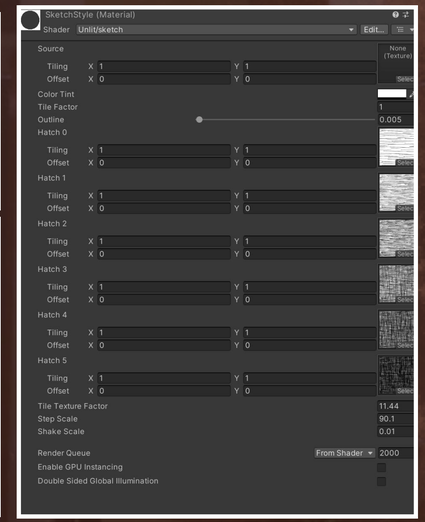
The *oil painting texture* is a representation of tipsy, The whole world seems to be painted over, with a very vivid **brush** texture.

After adjusting the **hue, brightness and contrast**, the player had the feeling of being drunk.  All kinds of colors are no longer sharp and real, and the colors presented in the brain are also very different from the real world. The player's senses begins to gradually move towards fainting.

**Sketch style** shows that the player is in a state of completely black out. The player no longer has a sense of color in front of him, as if the whole world is made of black and white, and no longer has the ability to **perceive color**.







*Sketch style* is based on the **grayscale grading** of the screen color, respectively, to add different sketch layers mapping to achieve the post-process screen effect of sketch texture.

## Test v1.0-v2.0