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Unity Build: 2020.3.24f

Instructions: **IF PLAYING IN UNITY START ON THE MENU SCREEN AT LEAST ONCE**. Otherwise you cannot adjust the volume and music will not play(as it is inherited from this scene).

Overall thoughts: First off thank you for this opportunity and taking the time to read this analysis/documentation. At the end of this document I have sourced things I used. All are royalty free for projects of this scope. Most are assets that would likely have been provided by teammates. I tried to separate this document into sections that either explain my thought process or discuss methodologies.

Theme: For a theme for my project. I mostly stuck with treasure chests + pirate text. Admittedly the theme was pretty weak. If I were to do this again I think I would like to have attempted a stronger theme. If I had an artist I think I would have also had more freedom to more aggressively pursue a theme. For example, on the seafloor, with some things swimming by in a neutral background. Treasure chests could be clams with “pearls” having monetary values written on them or an empty clam to indicate a “pooper”. This could be further augmented by particle effects. With a particle effect for bubbles upon game reset (indicating the game being reset) with audio attached. A smaller version of this particle effect could be used on each clam as they opened.
For the scope of this assignment this seemed a little out of reach due to the assets I would need for it, in a team however, this would be achievable.

Public gameobjects vs find by name/tag: I am aware that in some instances having this many public game objects linked to the gameMaster script could be problematic. My research indicated to me that searching by tags could be time consuming whereas prelinked gameobjects would be faster. That combined with the scope of this project made me feel prelinked gameobjects to the master script was ideal. That being said, if this was explained to be wrong to me I have no issues using an alternative design method.

Floats to represent money: I am vaguely aware that floats aren’t ideal for handling money. However that being said I have never had an issue representing numbers at this small of complexity and was under the impression this issue existed more for banking levels of currency. If the company standard is to avoid floats however, I could also represent $10.00 as 1000 and convert these integers(or BigInts) to “$ 10.00” when required (mostly for output.)

Algorithm: There was a lot of struggle on how to design the algorithm to place rewards amounts into chests. I debated doing something such as random(1,total) recursively until total = 0. My hesitation with this is that your first few random(1,total)’s have a much higher chance of being large numbers. This means that you either frontload or backload the chests players open. Eventually I settled on subdividing the total into “split” values and continuously rolling to see how

many splits were in each chest. This served a few purposes. Firstly, it made controlling outputs possibly not being divisible by $0.05 quite manageable(explained in comments but split size based on win amount controlled for this). Using this split system, I also avoided moments where 3~ chests might be $0.05 and then a 4th being $599.85 as that seems a bit too much of a disparity between rewards. There will still be disparity between chest rewards, they should just be less frequently so dramatic.

User Feedback: I asked some colleagues to playtest my project in order to look for issues. There was a large portion of feedback that wasn't actionable due to scope of the project such as having a quit button (not really necessary since this would be attached to a larger game) or how the odds were heavily in the players favor (my friend's "high score" was $16k~). These playtesters did catch some bugs I was able to fix like being able to quickly play a new game after one had ended and the chests not animating. They also gave me actionable feedback like how the "Current Bet" value resetting every game made playtesting and repeat games less than fun.

Additional comments: Quick thoughts

- I would have liked to have some light animated background going on but alas am not an artist and didn't find anything quite to my liking.
- Tried camera color changing as a background effect but was too distracting.
- I am aware the pixel art styles don't match but those were the chests I went with and only later realized their scale wasn't quite big enough vs the simple tickets I made. Obviously with an artist this is easily fixed.
- Furthermore the "tickets" being in chests was kind of weak thematically, but they were mainly there to be a placeholder for another asset like a poker chip or a gold coin etc.
- Similar still, the sound effects and music don't perfectly match but was more for proof of concept.
- A separate volume setting to control the sound effects vs the music seems doable but didn't seem necessary for this project's scope.

Author's notes: Thanks again for taking the time to read this and assess my project. This was a great experience and I hope you have as much fun seeing how I did things as I did "solving" them.

Sources/Credits:

Chest Assets:

https://admurin.itch.io/free-chest-animations

Audio:

https://freesound.org/people/FunWithSound/sounds/394898/ Failure
https://freesound.org/people/Leszek_Szary/sounds/171671/ Success

Background Music:

Acid Trumpet by Kevin MacLeod | https://incompetech.com/
Music promoted by https://www.chosic.com/free-music/all/
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http://creativecommons.org/licenses/by/3.0/

Tickets + Platform:

Made using online pixel art tool
http://pixelartmaker.com/art/76e068a167c4be4

Color Palette for UI:

https://flatuicolors.com/palette/se