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Text101 Slides

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Welcome To Text101

Welcome To Text101

- We'll be introducing some game design
- Our goal is to make the player think
- Using Unity's Scriptable Objects
- Getting familiar with Unity's interface

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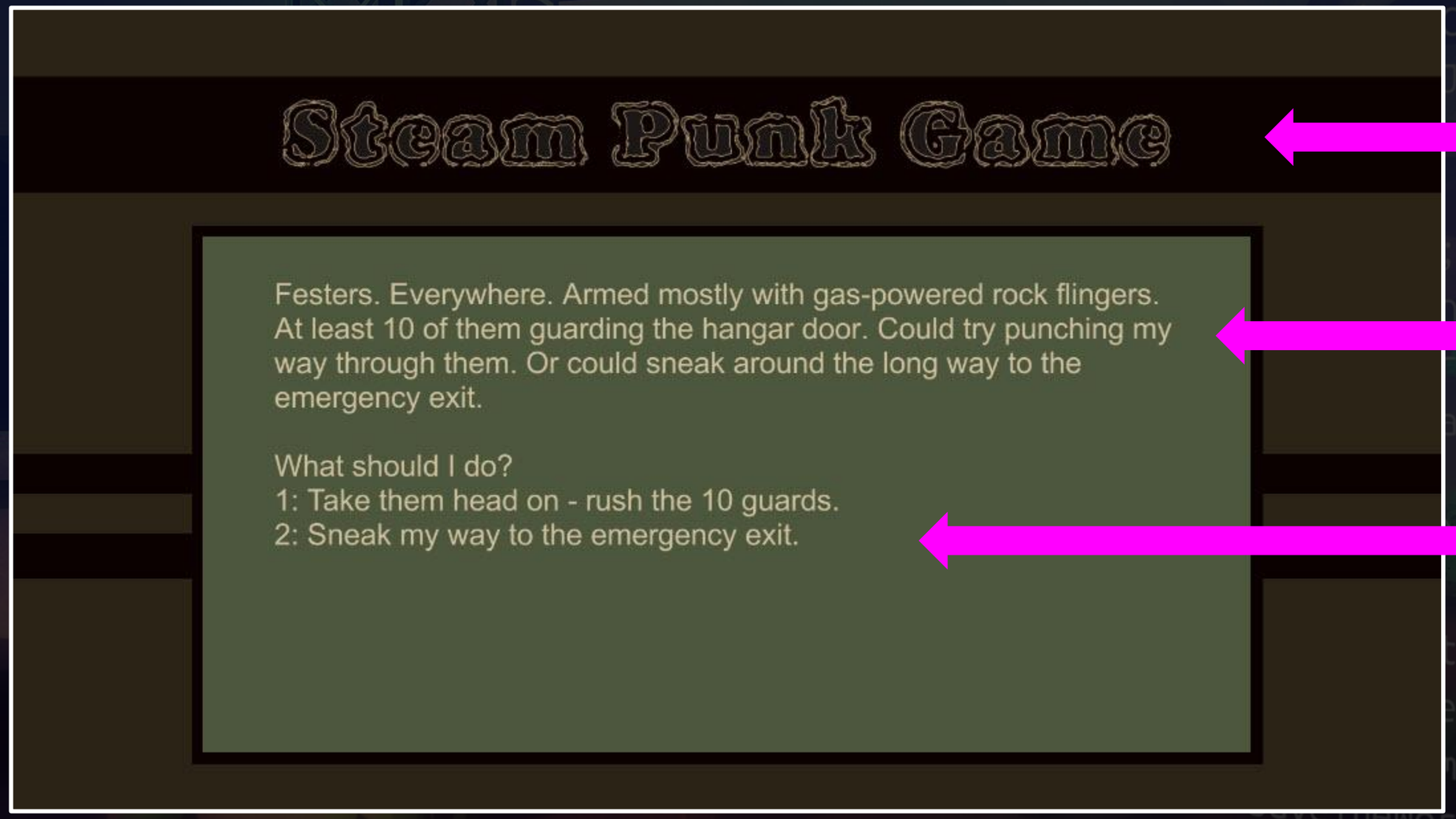
Text101 Game Design

In This Video

- Design of our game
- Theme and core mechanic
- Select your own theme

Gameplay Screen



Our Core Game Design

Player Experience:

Feeling of discovery

Core Mechanic:

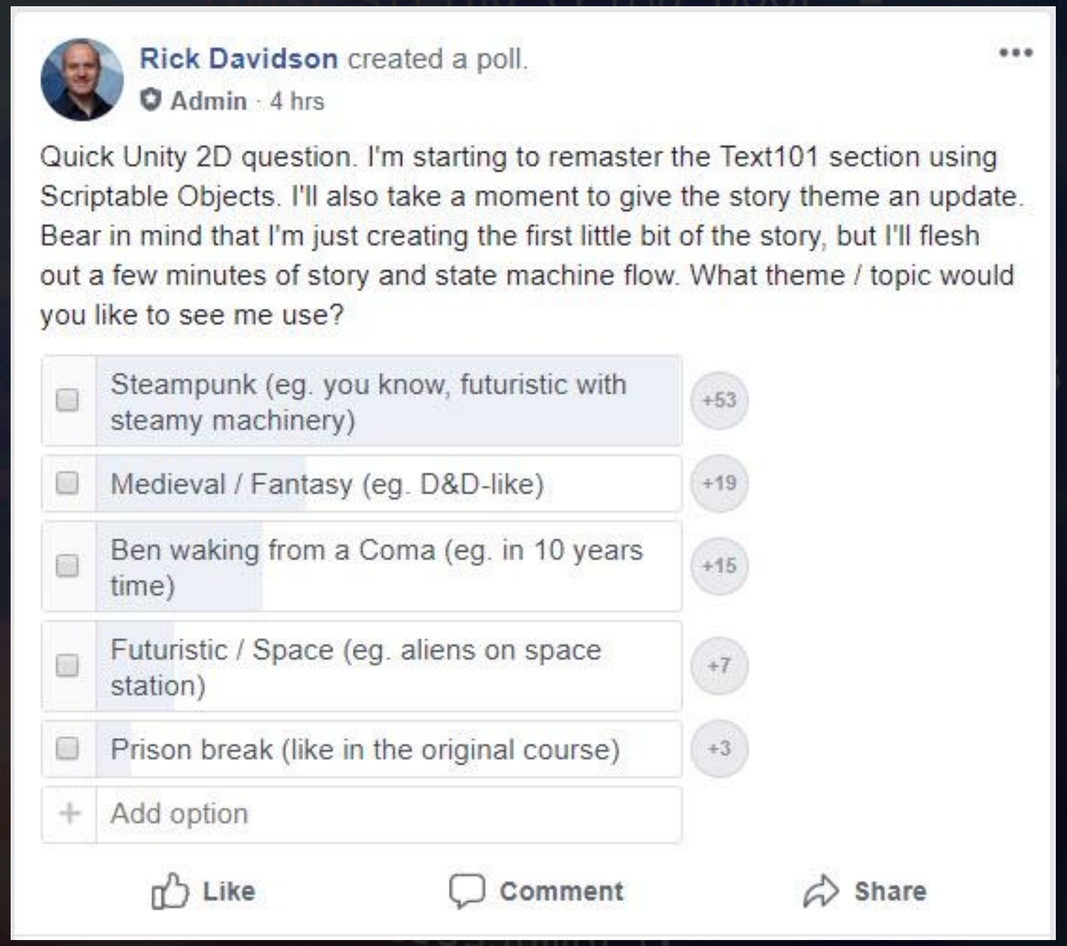
Choose your own adventure

Theme:

Steampunk

Core game loop:

Player is shown text on what is happening in the world and given 1 to 3 choices on how to progress.



Story Hooks

Who is the player?

Injured Airship Pilot

What is the setting?

Small city under siege

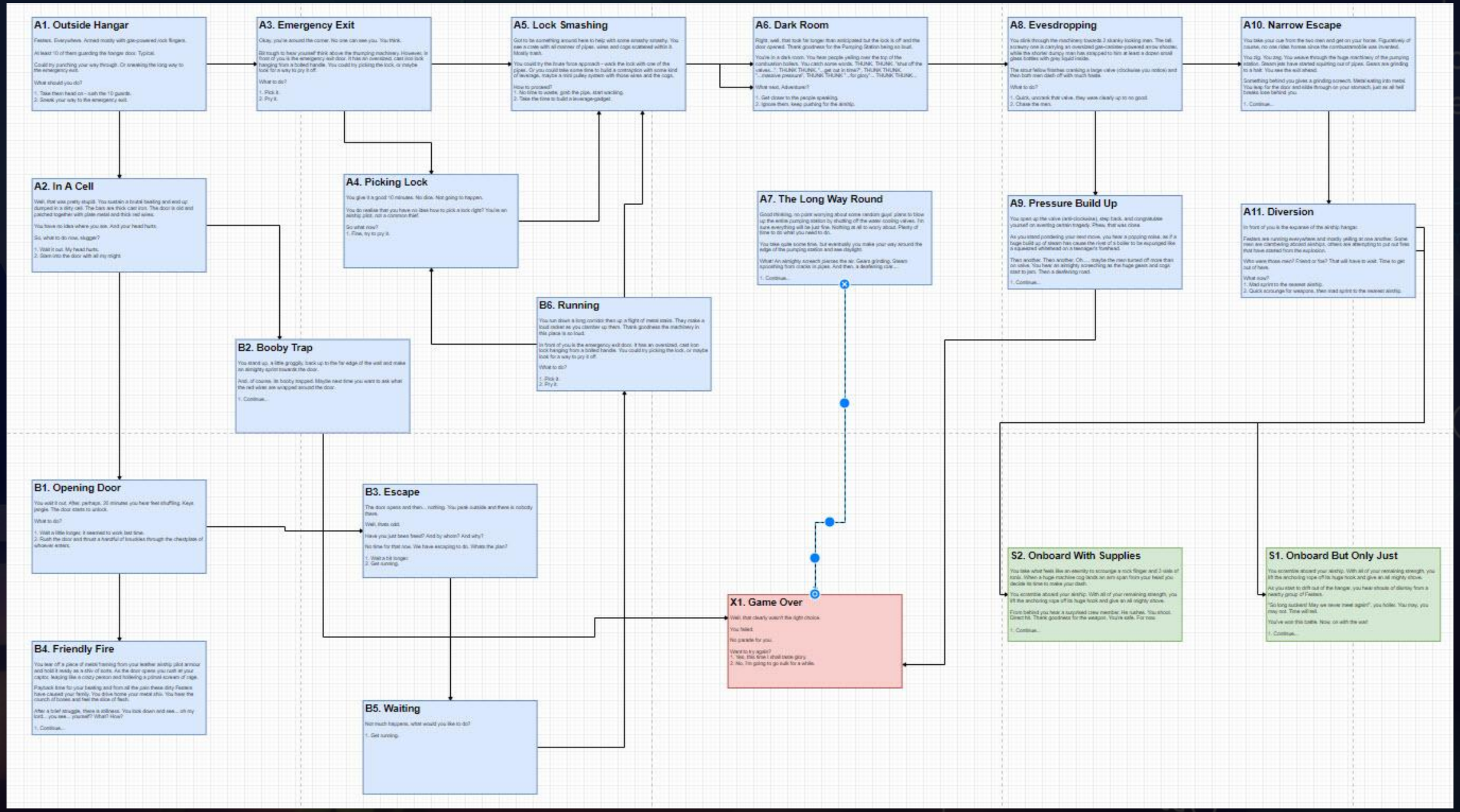
What is the threat?

The “Festers”

(gangs of desert-dwelling scum)

What is the goal?

Get airborne


A1. Outside Hangar
Feasters. Everywhere. Armed mostly with gas-powered rock flingers.
At least 10 of them guarding the hangar door. Typical.
Could try punching your way through. Or sneaking the long way to the emergency exit.
What should you do?
1. Take them head on – rush the 10 guards.
2. Sneak your way to the emergency exit.
A2. In A Cell
Well, that was pretty stupid. You sustain a brutal beating and end up dumped in a dirty cell. The bars are thick cast iron. The door is old and patched together with plate metal and thick red wires.
You have no idea where you are. And your head hurts.
So, what to do now, slugger?
1. Wait it out. My head hurts.
2. Slam into the door with all my might.
A3. Emergency Exit
Okay, you're around the corner. No one can see you. You think.
Bit tough to hear yourself think above the thumping machinery. However, in front of you is the emergency exit door. It has an oversized, cast iron lock hanging from a bolted handle. You could try picking the lock, or maybe look for a way to pry it off.
What to do?
1. Pick it.
2. Pry it.
A4. Picking Lock
You give it a good 10 minutes. No dice. Not going to happen.
You do realise that you have no idea how to pick a lock right? You're an airship pilot, not a common thief.
So what now?
1. Fine, try to pry it.
A5. Lock Smashing
Got to be something around here to help with some smashy smashy. You see a crate with all manner of pipes, wires and cogs scattered within it. Mostly trash.
You could try the brute force approach – wack the lock with one of the pipes. Or you could take some time to build a contraption with some kind of leverage, maybe a mini pulley system with those wires and the cogs.
How to proceed?
1. No time to waste, grab the pipe, start wacking.
2. Take the time to build a leverage-gadget.
A6. Dark Room
Right, well, that took far longer than anticipated but the lock is off and the door opened. Thank goodness for the Pumping Station being so loud.
You're in a dark room. You hear people yelling over the top of the combustion boilers. You catch some words; THUNK, THUNK, "shut off the valves...", THUNK THUNK, "...get out in time?", THUNK THUNK, "...massive pressure", THUNK THUNK "...for glory"... THUNK THUNK...
What next, Adventurer?
1. Get closer to the people speaking.
2. Ignore them, keep pushing for the airship.
A7. The Long Way Round
Good thinking, no point worrying about some random guys' plans to blow up the entire pumping station by shutting off the water cooling valves. I'm sure everything will be just fine. Nothing at all to worry about. Plenty of time to do what you need to do.
You take quite some time, but eventually you make your way around the edge of the pumping station and see daylight.
What! An almighty screech pierces the air. Gears grinding. Steam spooshing from cracks in pipes. And then, a deafening roar...
1. Continue...
A8. Evesdropping
You slink through the machinery towards 2 skanky looking men. The tall, scrawny one is carrying an oversized gas-canister-powered arrow shooter, while the shorter dumpy man has strapped to him at least a dozen small glass bottles with grey liquid inside.
The stout fellow finishes cranking a large valve (clockwise you notice) and then both men clash off with much haste.
What to do?
1. Quick, uncrank that valve, they were clearly up to no good.
2. Chase the men.
A9. Pressure Build Up
You open up the valve (anti-clockwise), step back, and congratulate yourself on averting certain tragedy. Phew, that was close.
As you stand pondering your next move, you hear a popping noise, as if a huge build up of steam has cause the rivet of a boiler to be expunged like a squeezed whitehead on a teenager's forehead.
Then another. Then another. Oh..., maybe the men turned off more than on valve. You hear an almighty screeching as the huge gears and cogs start to jam. Then a deafening roar.
1. Continue...
A10. Narrow Escape
You take your cue from the two men and get on your horse. Figuratively of course, no one rides horses since the combustionobile was invented.
You zig. You zag. You weave through the huge machinery of the pumping station. Steam jets have started squirting out of pipes. Gears are grinding to a halt. You see the exit ahead.
Something behind you gives a grinding screech. Metal eating into metal. You leap for the door and slide through on your stomach, just as all hell breaks loose behind you.
1. Continue...
A11. Diversion
In front of you is the expanse of the airship hangar.
Feasters are running everywhere and mostly yelling at one another. Some men are clambering aboard airships, others are attempting to put out fires that have started from the explosion.
Who were those men? Friend or foe? That will have to wait. Time to get out of here.
What now?
1. Mad sprint to the nearest airship.
2. Quick scrounge for weapons, then mad sprint to the nearest airship.
B1. Opening Door
You wait it out. After, perhaps, 20 minutes you here feet shuffling. Keys jangle. The door starts to unlock.
What to do?
1. Wait a little longer, it seemed to work last time.
2. Rush the door and thrust a handful of knuckles through the cheekbone of whoever enters.
B2. Booby Trap
You stand up, a little groggily, back up to the far edge of the wall and make an almighty sprint towards the door.
And, of course, its booby trapped. Maybe next time you want to ask what the red wires are wrapped around the door.
1. Continue...
B3. Escape
The door opens and then... nothing. You peek outside and there is nobody there.
Well, thats odd.
Have you just been freed? And by whom? And why?
No time for that now. We have escaping to do. Whats the plan?
1. Wait a bit longer.
2. Get running.
B4. Friendly Fire
You tear off a piece of metal framing from your leather airship pilot armour and hold it ready as a chiv of sorts. As the door opens you rush at your captor, leaping like a crazy person and hollering a primal scream of rage.
Payback time for your beating and from all the pain these dirty Feasters have caused your family. You drive home your metal chiv. You hear the crunch of bones and feel the slice of flesh.
After a brief struggle, there is stillness. You look down and see... oh my lord... you see... yourself? What? How?
1. Continue...
B5. Waiting
Not much happens, what would you like to do?
1. Get running.
B6. Running
You run down a long corridor then up a flight of metal stairs. They make a loud racket as you clamber up them. Thank goodness the machinery in this place is so loud.
In front of you is the emergency exit door. It has an oversized, cast iron lock hanging from a bolted handle. You could try picking the lock, or maybe look for a way to pry it off.
What to do?
1. Pick it.
2. Pry it.
X1. Game Over
Well, that clearly wasn't the right choice.
You failed.
No parade for you.
Want to try again?
1. Yes, this time I shall taste glory.
2. No, I'm going to go sulk for a while.
S2. Onboard With Supplies
You take what feels like an eternity to scrounge a rock flinger and 3 vials of rocks. When a huge machine cog lands an arm span from your head you decide its time to make your dash.
You scramble aboard your airship. With all of your remaining strength, you lift the anchoring rope off its huge hook and give an all mighty shove.
From behind you hear a surprised crew member. He rushes. You shoot. Direct hit. Thank goodness for the weapons. You're safe. For now.
1. Continue...
S1. Onboard But Only Just
You scramble aboard your airship. With all of your remaining strength, you lift the anchoring rope off its huge hook and give an all mighty shove.
As you start to drift out of the hangar, you hear shouts of dismay from a meaty group of Feasters.
"So long suckers! May we never meet again!", you holler. You may, you may not. Time will tell.
You've won this battle. Now, on with the war!
1. Continue...

Create Your Own CYOA Design

- What is your game theme?
- What is an image that sums up your game theme?
- Who is the player?
- What is the goal?
- Share with our community in the community forum!

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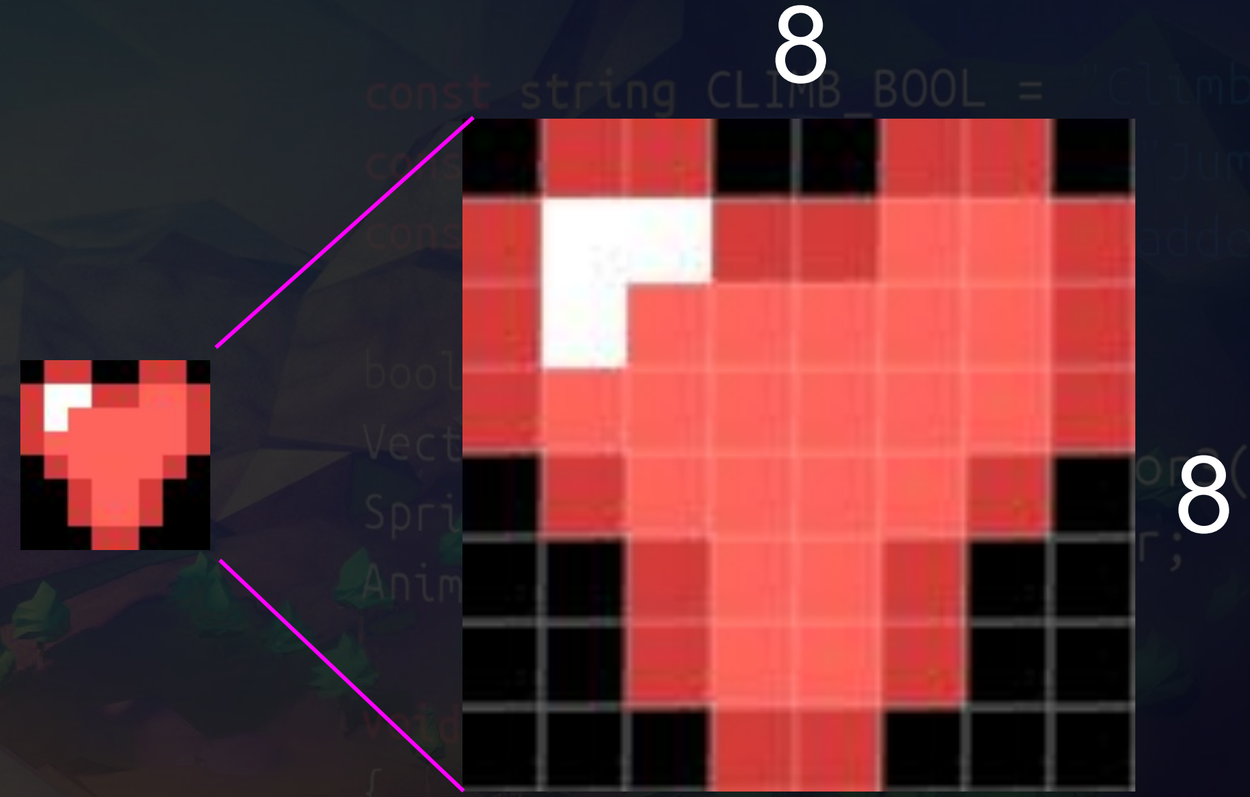
Creating Sprites In Unity

What Is A Sprite?

A Sprite is a 2D graphic object obtained from a bitmap image.

We can move, scale, rotate and many other things.



Create A Platformer Level

- With just basic sprites, create a pretend platformer level
- Note: this is just for fun, we wont be using this in our game
- Share what you have with the community!

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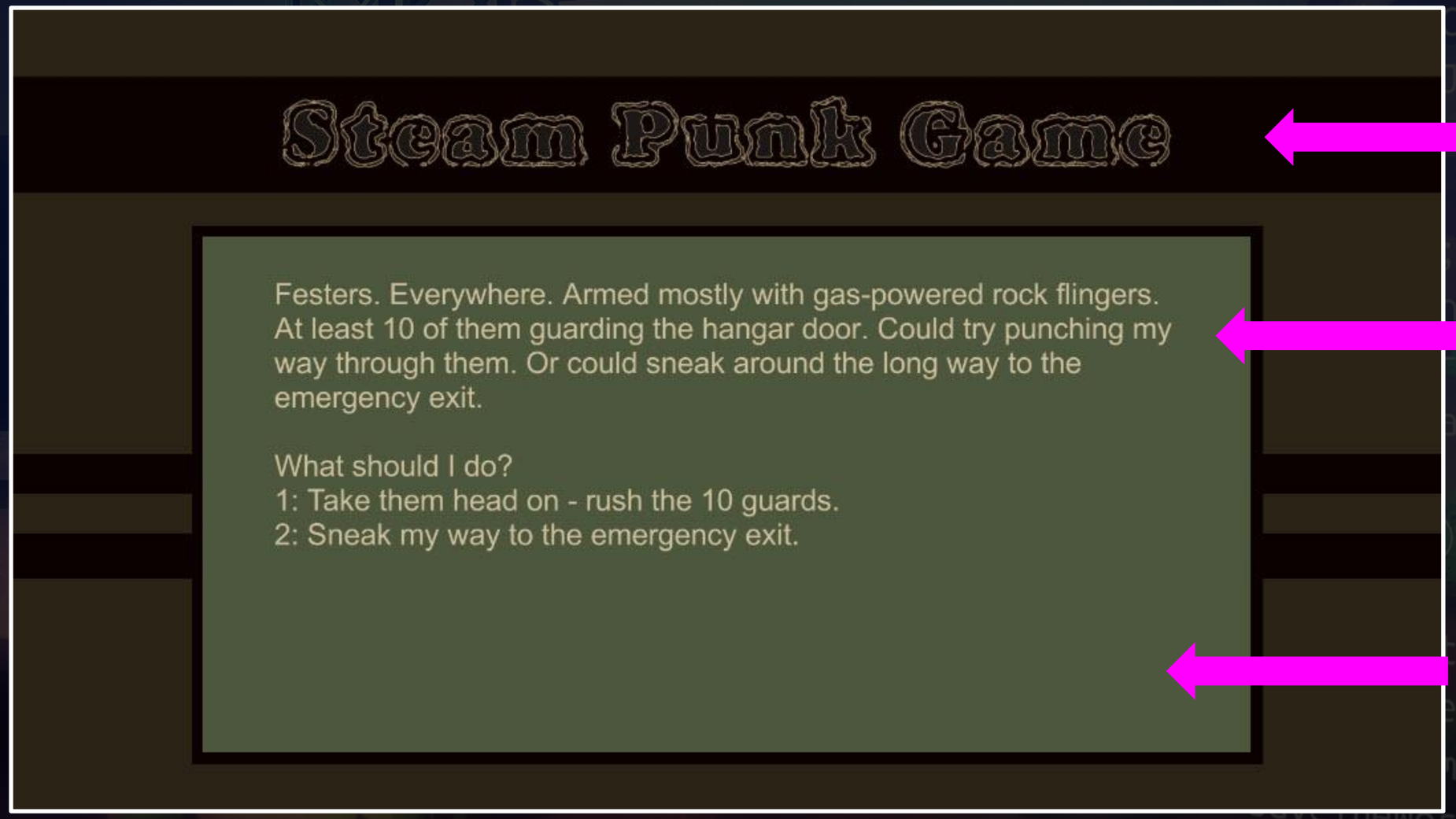
UI Canvas & Text

User Interface

- UI = User Interface
- Buttons, text, menus
- In Unity, UI lives on the “Canvas”
- Canvas is overlayed on top of the game

Text101 Text Requirements



Get Your Canvas Ready

- Create a text field for our story
- Create a heading
- Optional: Add some flair / match your theme

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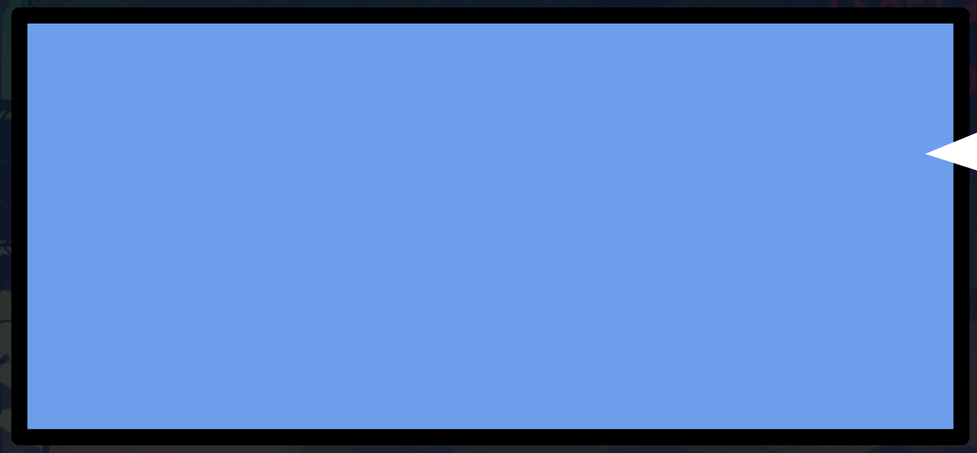
Update Text Component

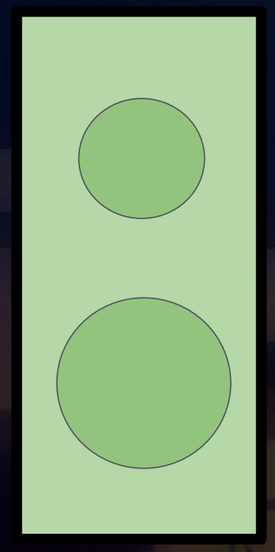
Game Objects



TV
(Visual Display)

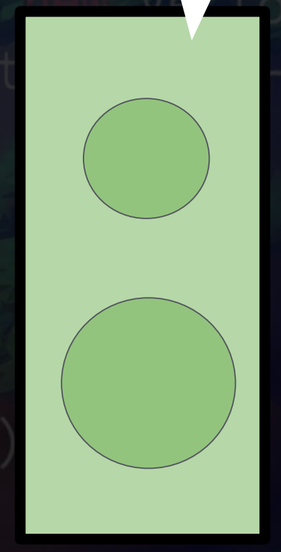
Stereo System
(Audio / Visual
Signal)

Speakers
(Audio Output)

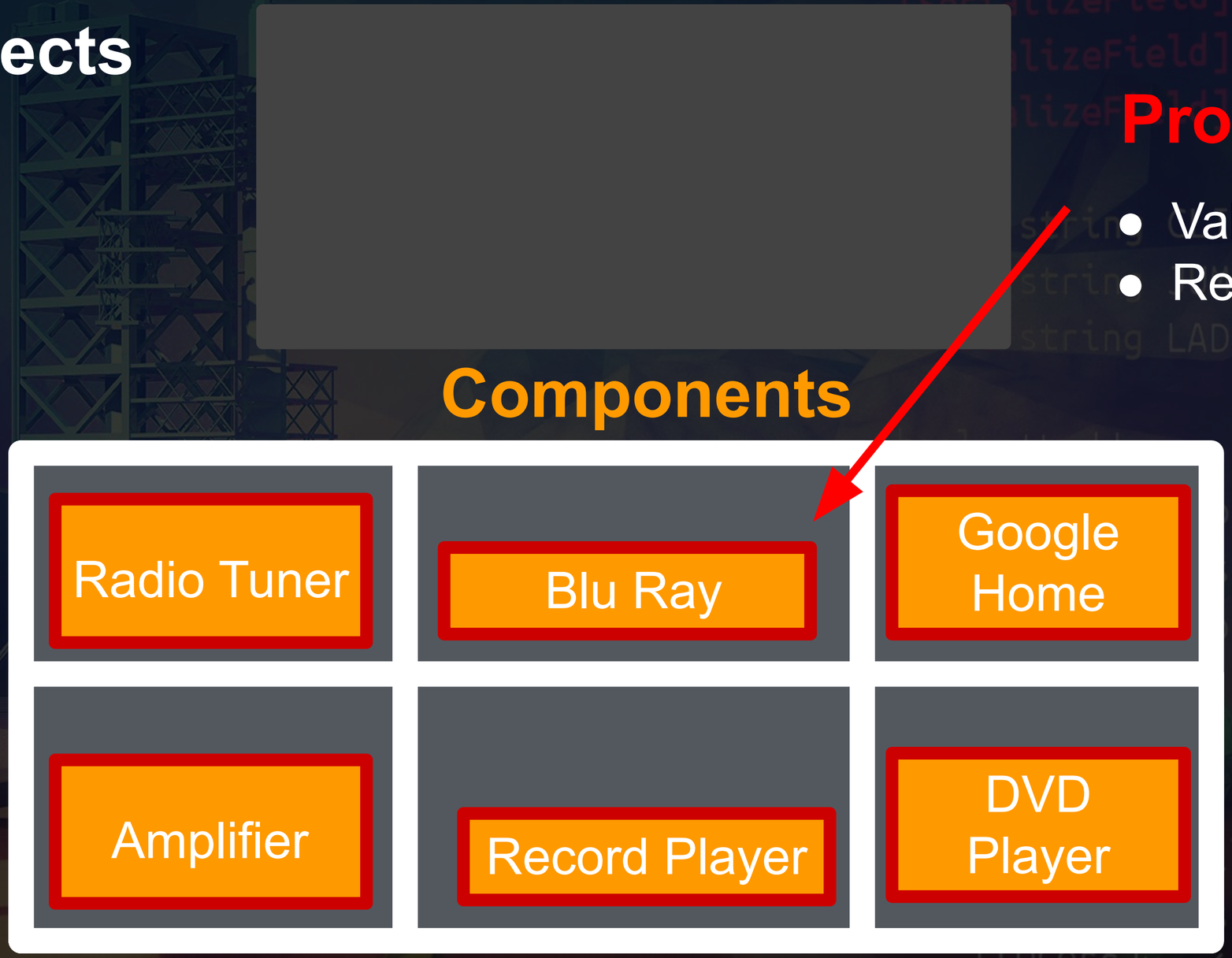


Components

- Radio Tuner
- Blu Ray
- Google Home
- Amplifier
- Record Player
- DVD Player



Game Objects

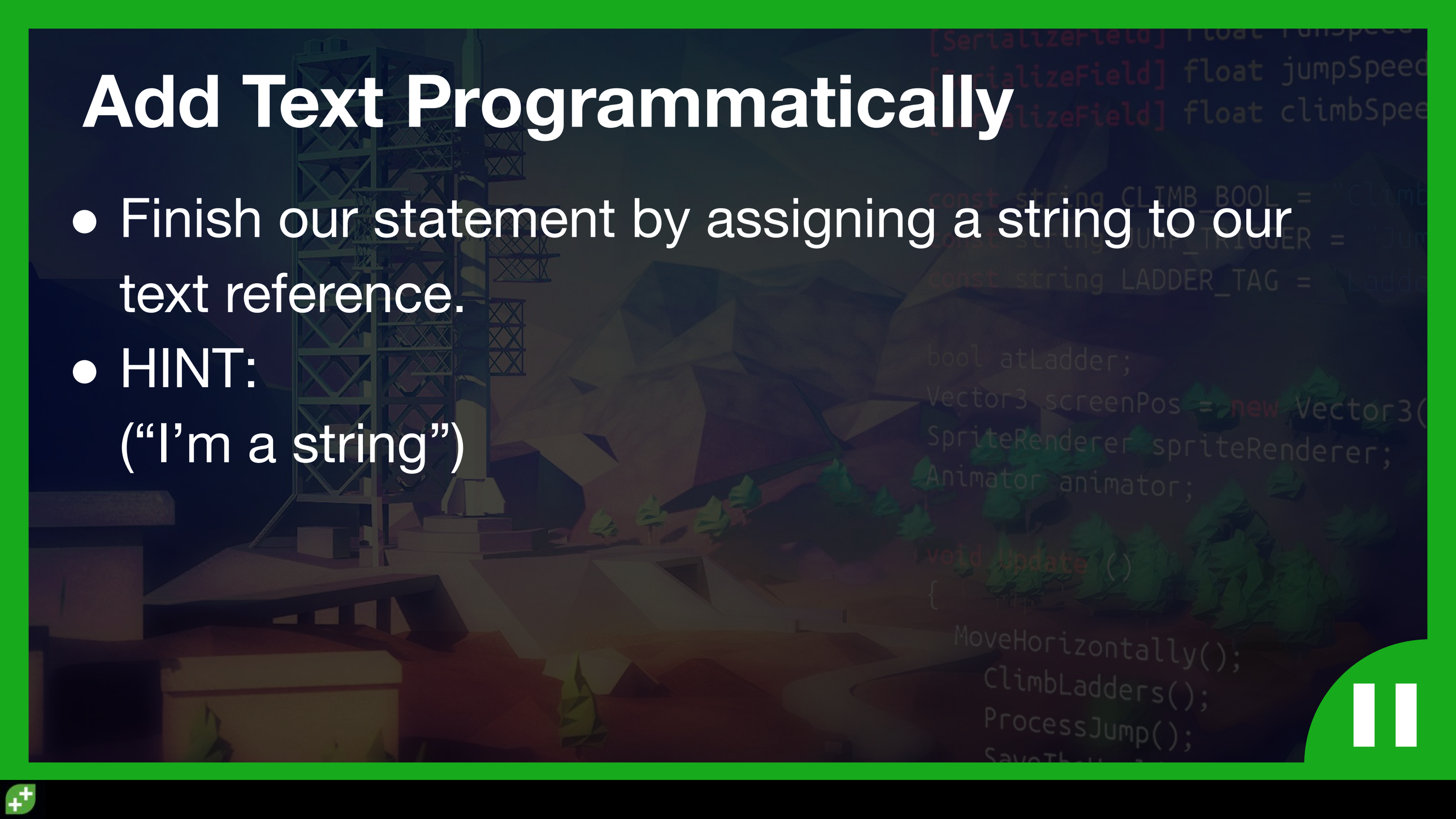


Properties

- Values
- References

Add Text Programmatically

- Finish our statement by assigning a string to our text reference.
- HINT:
  (“I’m a string”)



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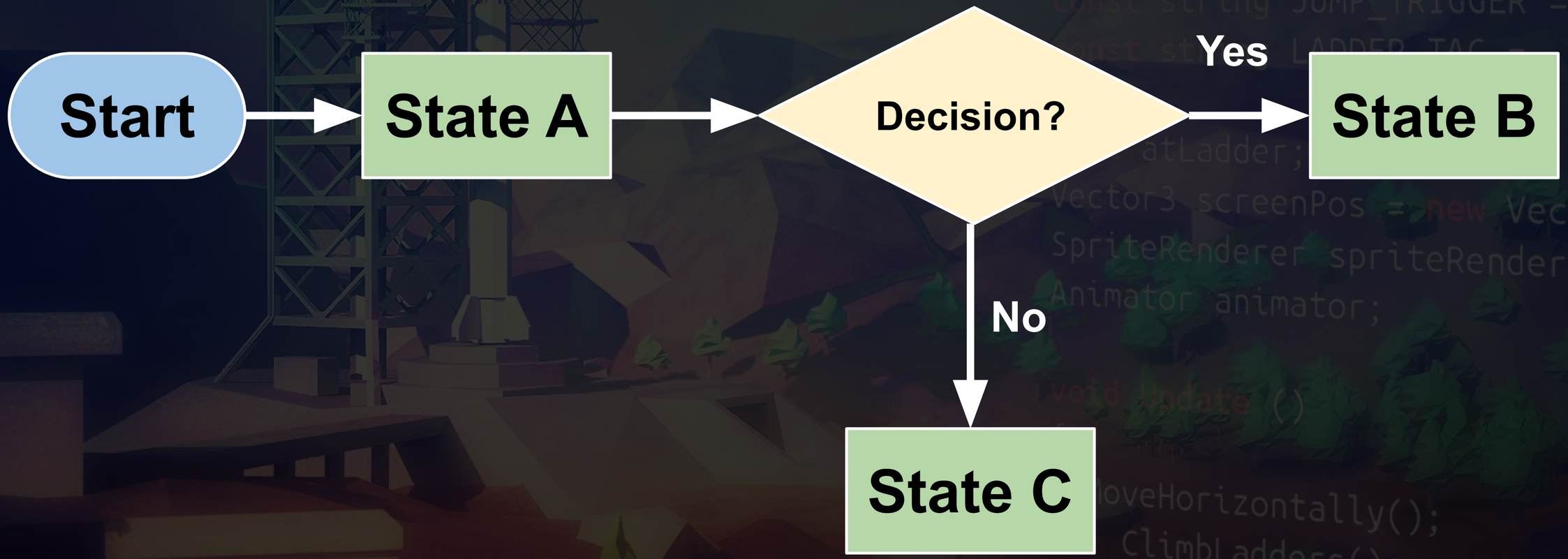
Game States

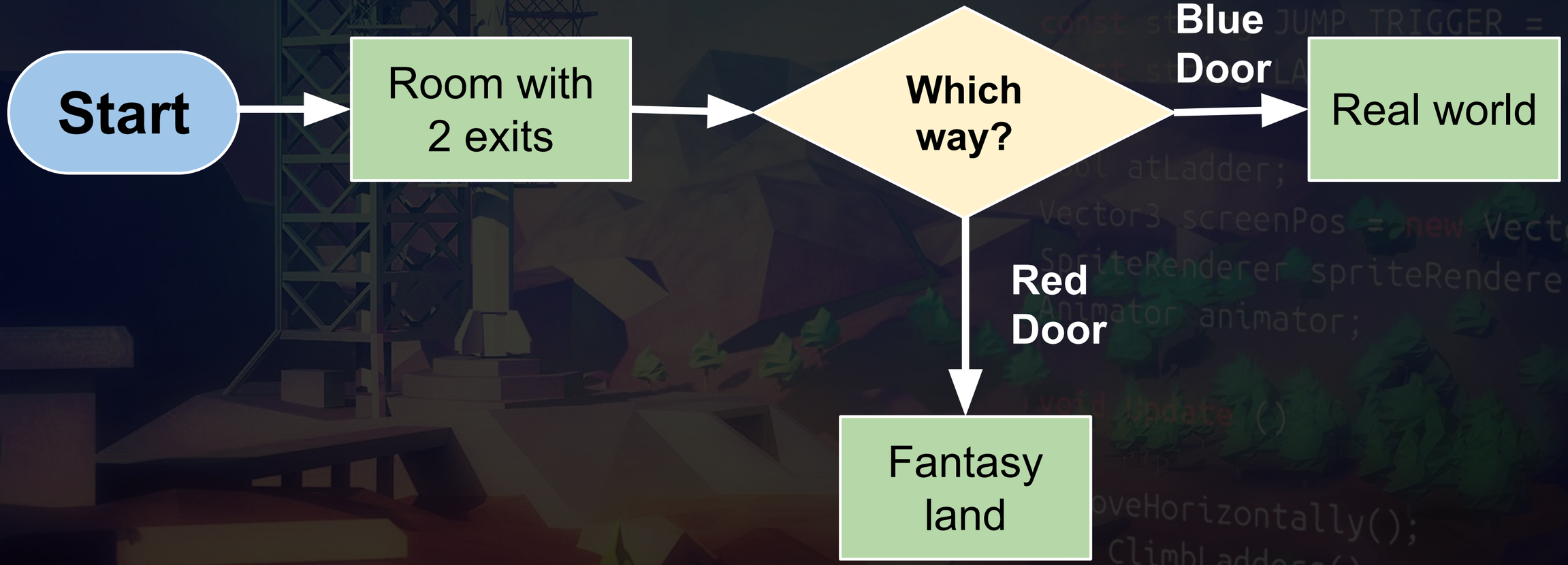
States and State Machines

- State = Action or Process or Behaviour
- State Machine assumes only 1 state at a time
- Conditions (requirements) to transition from one state to the next.

State Machine



State Machine



State Machine

- In our game, we may have 100s of states
- Each state may have many lines of story
- Need a way to manage all this data.

What Is Your Starting State?

- What is the first thing that your player is confronted with?
- Write 2 or 3 sentences that will start your game.
- What are the 2 choices your player can take?

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Unity Scriptable Objects

What Are Scriptable Objects?

- `ScriptableObject` is a class that lets us store data in stand alone assets.
- Keep mountains of data out of our scripts.
- It is lightweight and convenient.
- Used as a template for consistency.

What Are Scriptable Objects?

Our Code

AdventureGame.cs

Display story text:

Scriptable Objects

- Story Data A
- Story Data B
- Story Data C
- Story Data D

What Are Scriptable Objects?

Our Code

AdventureGame.cs

Display story text:

Story Data B

Scriptable Objects

Story Data A

Story Data B

Story Data C

Story Data D

What Are Scriptable Objects?

Our Code

AdventureGame.cs

Display story text:

Story Data C

Scriptable Objects

Story Data A

Story Data B

Story Data C

Story Data D

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Challenging Content Ahead

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Public Methods & Return Types

A Method Definition

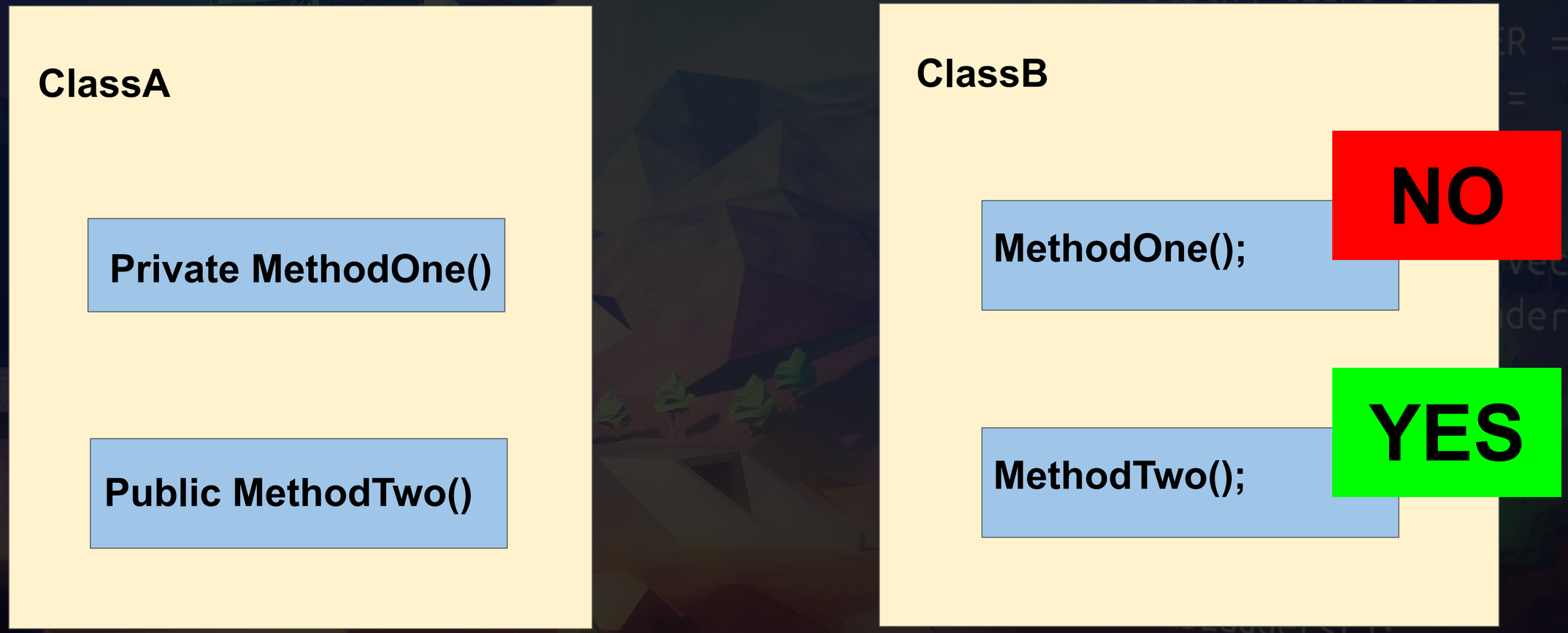
Access Modifier
Scope of use

Return value
void = return nothing

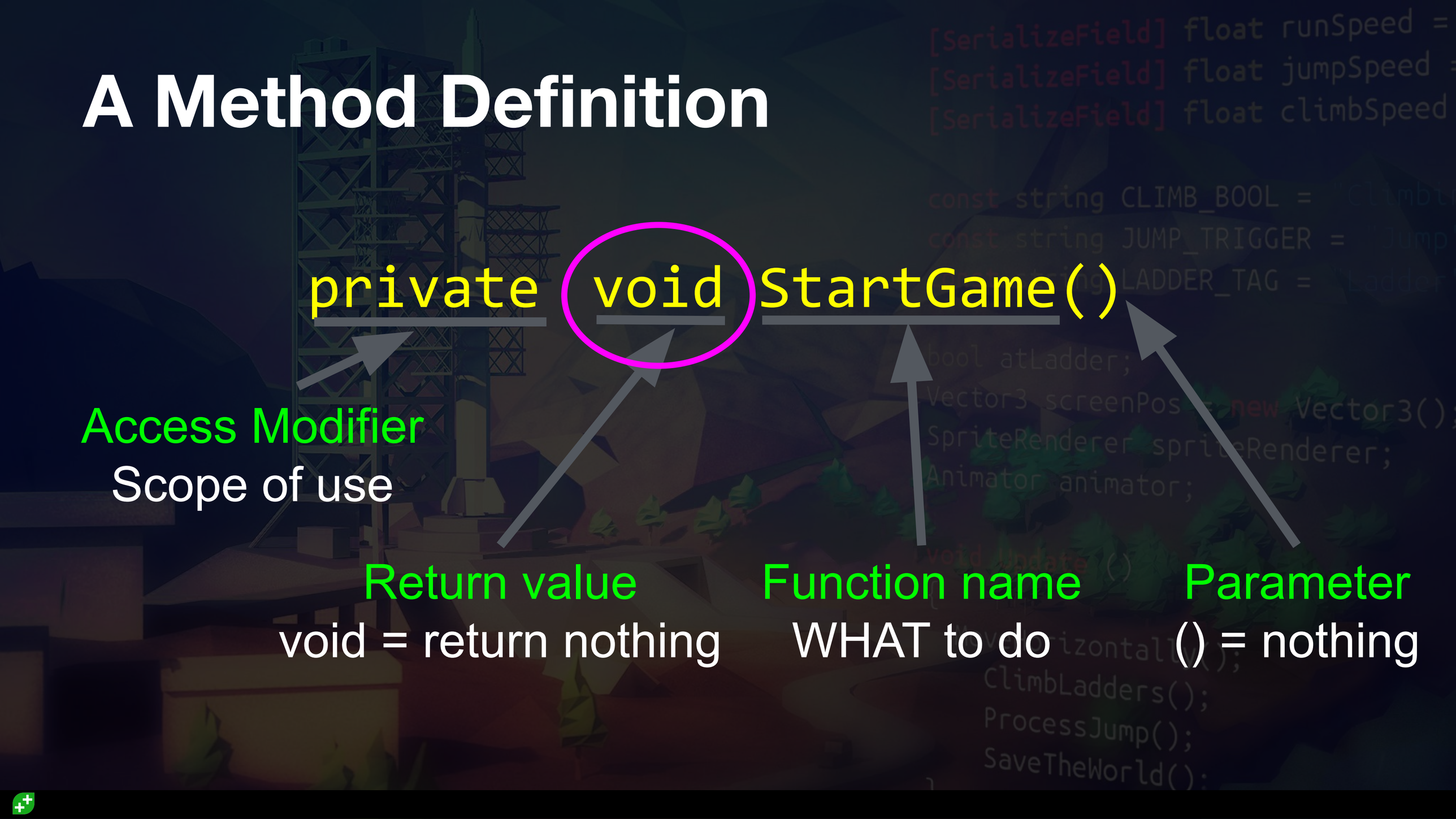
Method name
WHAT to do

Parameter
() = nothing

Public Versus Private Access Modifiers



A Method Definition



Calling A Method

Call a method

“Please execute all your steps now”

Method is executed

“I’m doing everything inside my {curly braces}”

If no return type (void)

“Job done, have a nice day”

Calling A Method

Call a method	Method is executed	If there is return type	Receive return value
“Please execute all your steps now”	“I’m doing everything inside my {curly braces}”	“Here is data for you”	“Thanks, I needed that info”

Create Public Method

- Create a public method called `GetStateStory`
- `string` return type
- Contains one statement
- Use the `return` keyword to return our `storyText` variable

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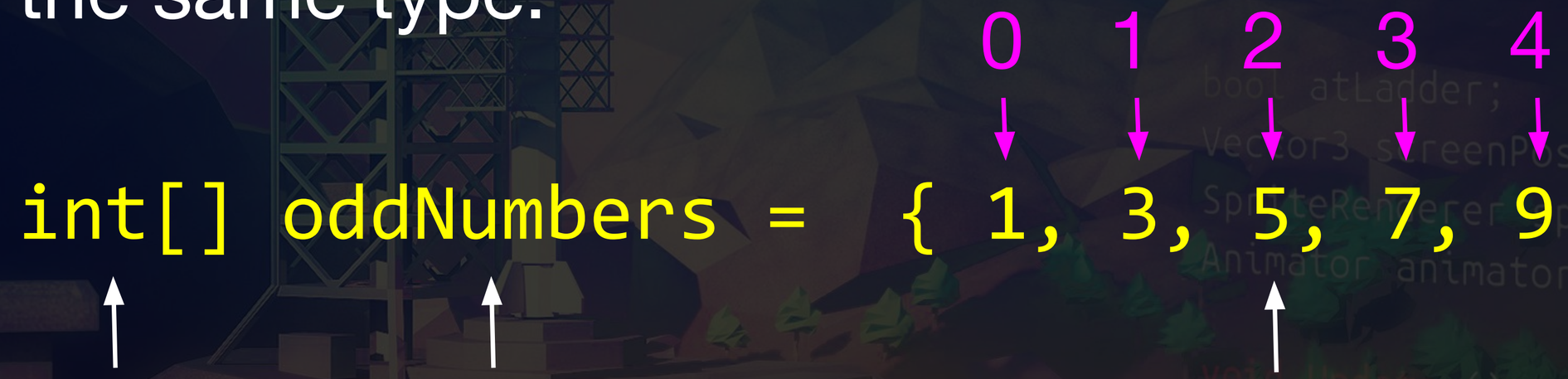
Creating An Array

What Is An Array?

- An Array stores into a variable, multiple elements of the same type.



Create Public Method

- Summary: Create public method which, when called, returns an array of next states.
- HINTS:
  - Serialize Array of type State called `nextStates`
  - Public method that returns `nextStates` called `GetNextStates`
  - Return type needs to be the same as variable type

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Manage Next States

Complete ManageState()

- Add in 2 more conditions to respond to player pressing “2” and “3”.
- Remember the difference between if, else if and else.

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Game State Story Design

Create A Story

- Use Draw.io or similar tool to create your story flow, states and transitions.
- Share a screenshot of your flow diagram with our community!

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Organise States Files

Complete Our Game Flow

- Add an introduction state with instructions.
- Add a Game Over state with Play Again.
- Create all our story states, copy in our text.
- Hook up the next states.
- Get our states nicely organised.

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TextMesh Pro & Polish

Polish The Look Of Your Game

- Consider colours and theme.
- Use TextMesh Pro for font.
- Any other details you'd like.
- Share a screenshot in our Facebook group or GameDev.tv community site!

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Text101 Instructor Hangout #1

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Publish Your WebGL Game

Publish And Share Your Game Online

- Create a WebGL build.
- Publish to ShareMyGame.com
- Copy the link to your game
- Share your game to at least one location - Facebook, GameDev.tv community site, Discord
- Be ready for feedback.

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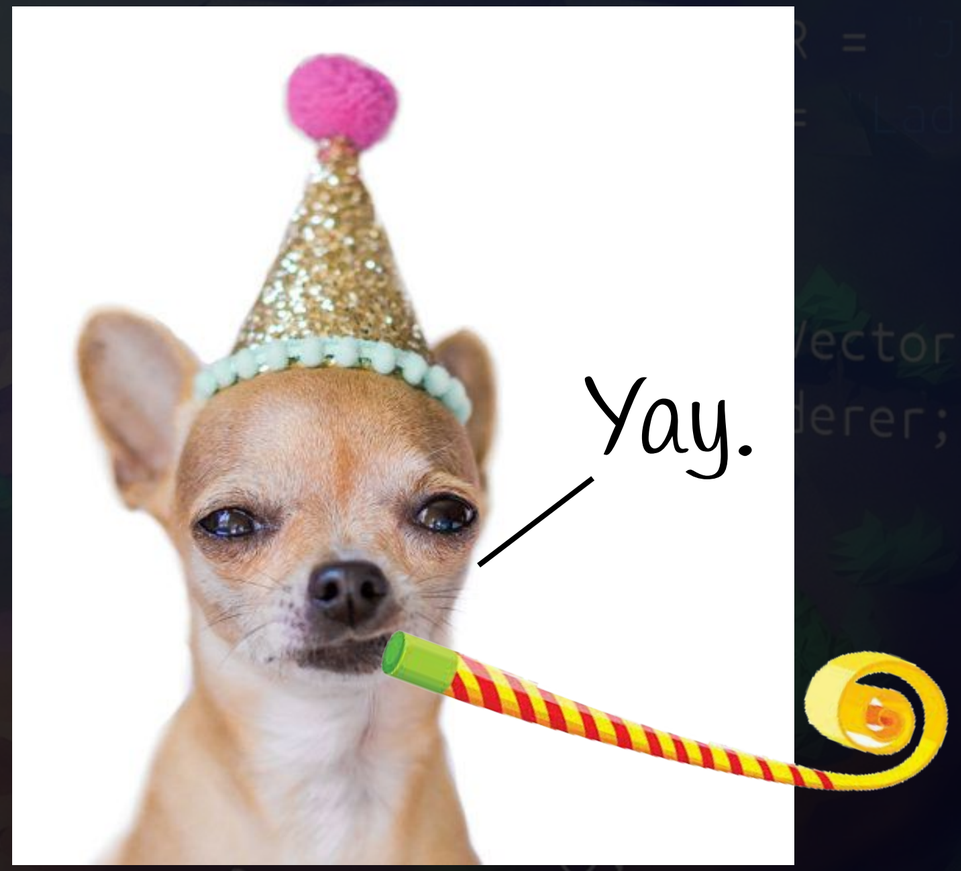
For Loops

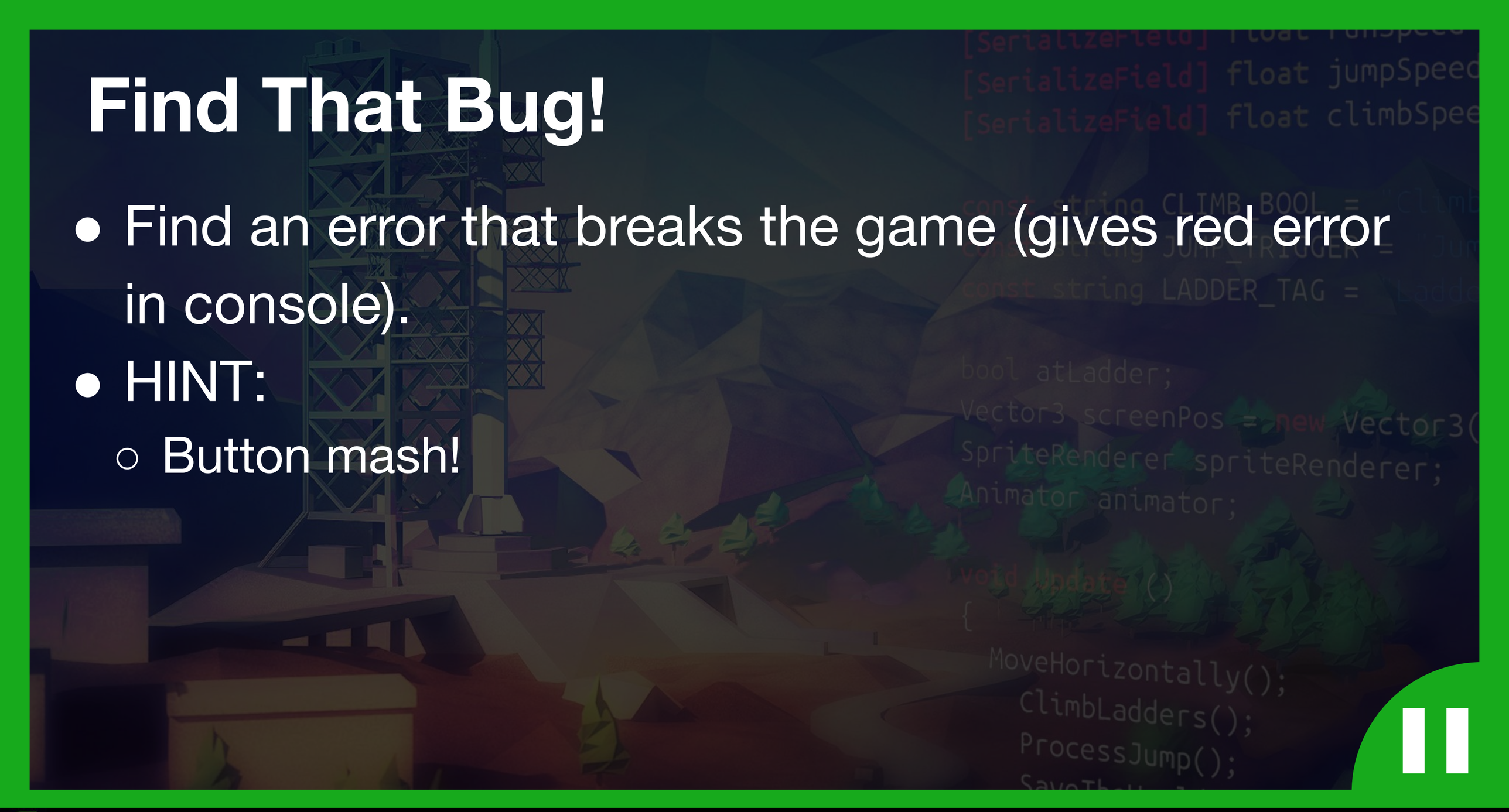
Time To Celebrate!

Our first proper bug!



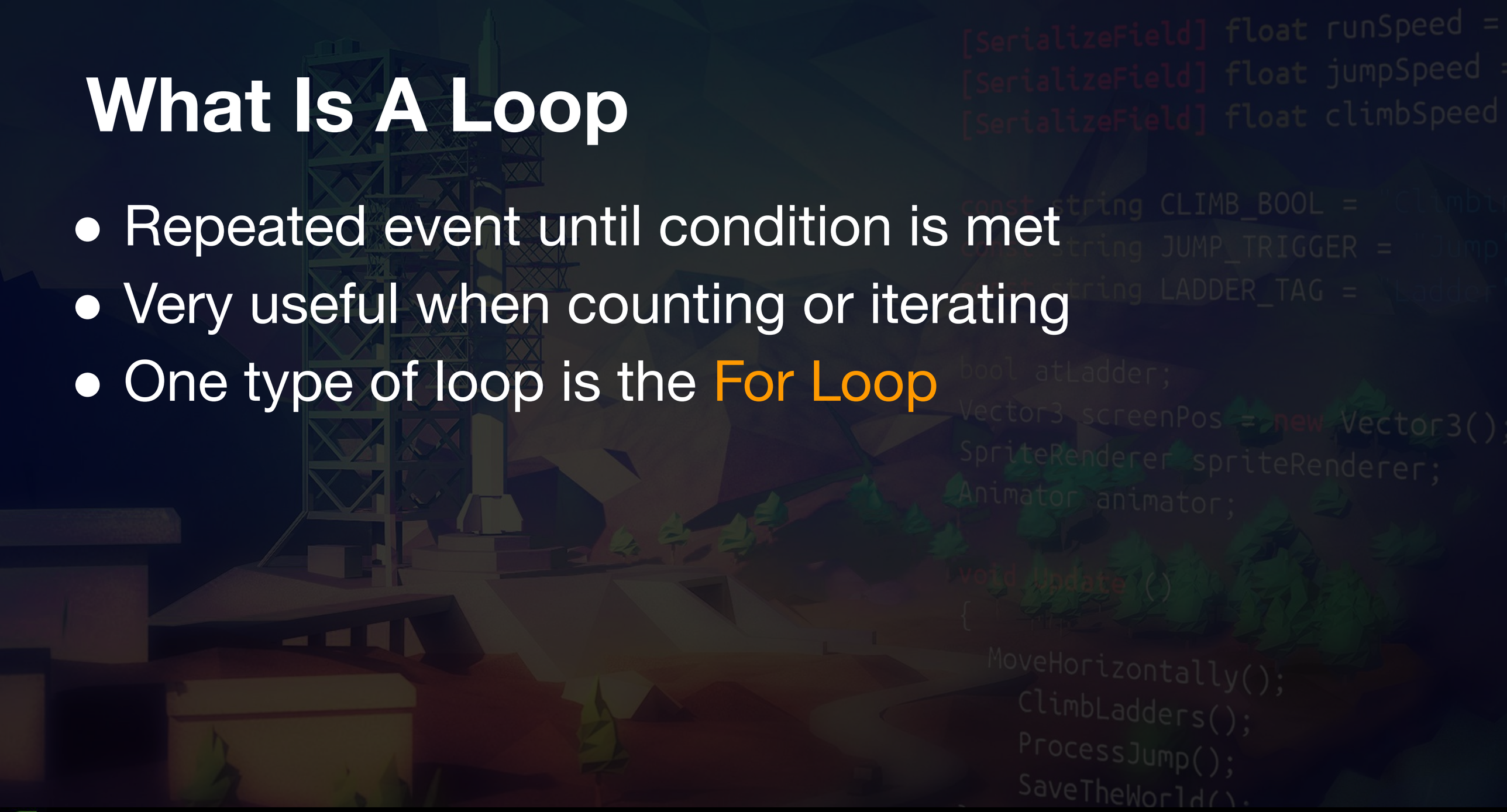
Find That Bug!

- Find an error that breaks the game (gives red error in console).
- HINT:
  - Button mash!



What Is A Loop

- Repeated event until condition is met
- Very useful when counting or iterating
- One type of loop is the For Loop



For Loop

```
for (int i = 0; i < something; i++)
    {
        // do these things
    }
```

END OF SLIDES

Public Versus Private Access Modifiers

- `private` keyword = can only be used in the class it was declared in
- `public` keyword = can be used in any class (globally)

- Use `public` only when necessary

Strings Are Series of Characters

- Consider:
  - `Debug.Log(“Something”);`
  - `Debug.Log(“XSFENK ASDFLnf kdlsa012910”);`
- The content within quotation marks is a String.
- The computer doesn’t try to interpret the content.