MTEC 3175

Game Design Elements, Types of Games, Tools of Design

Who's this guy?

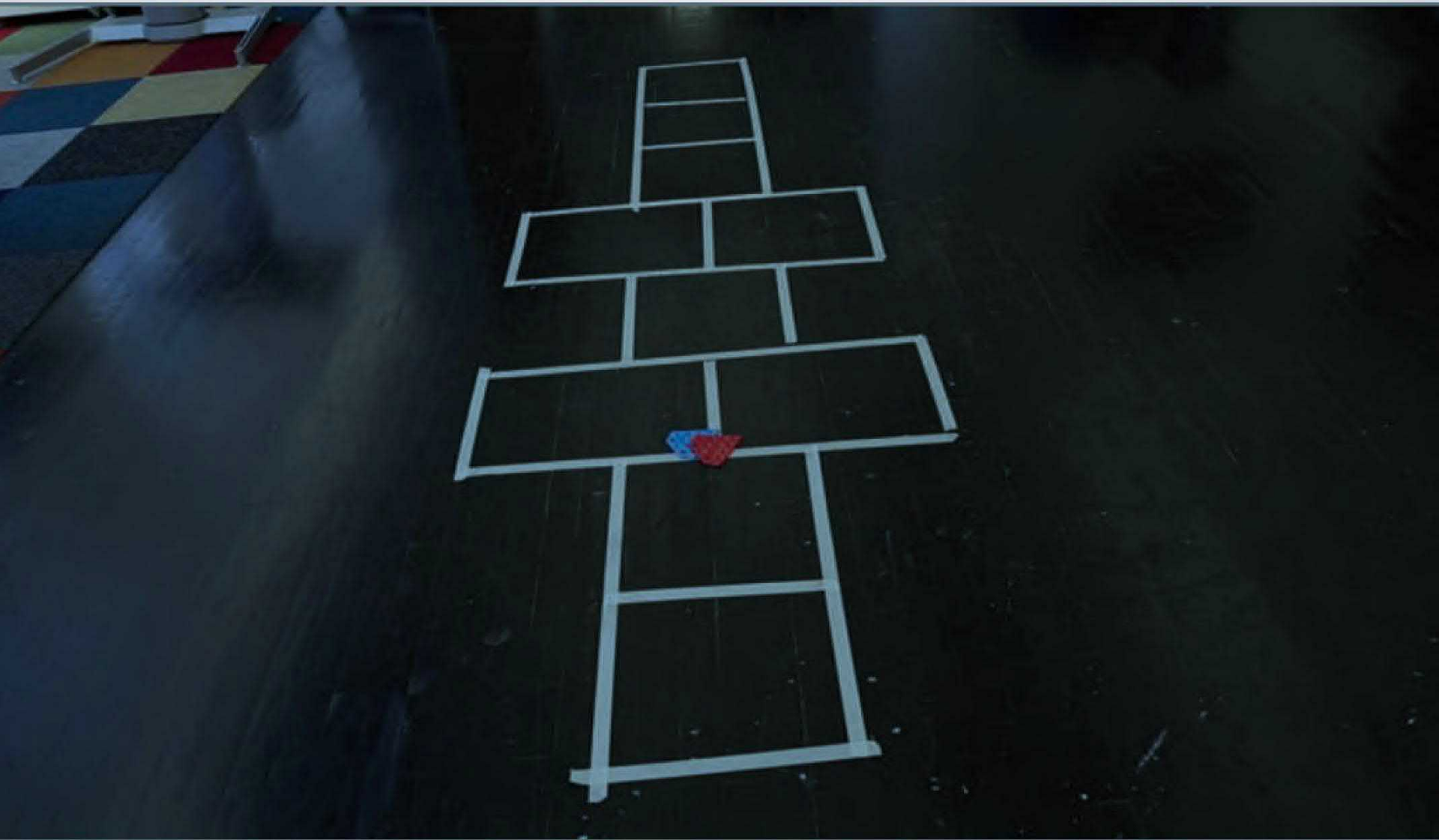# Tech Platform Setup

Slack

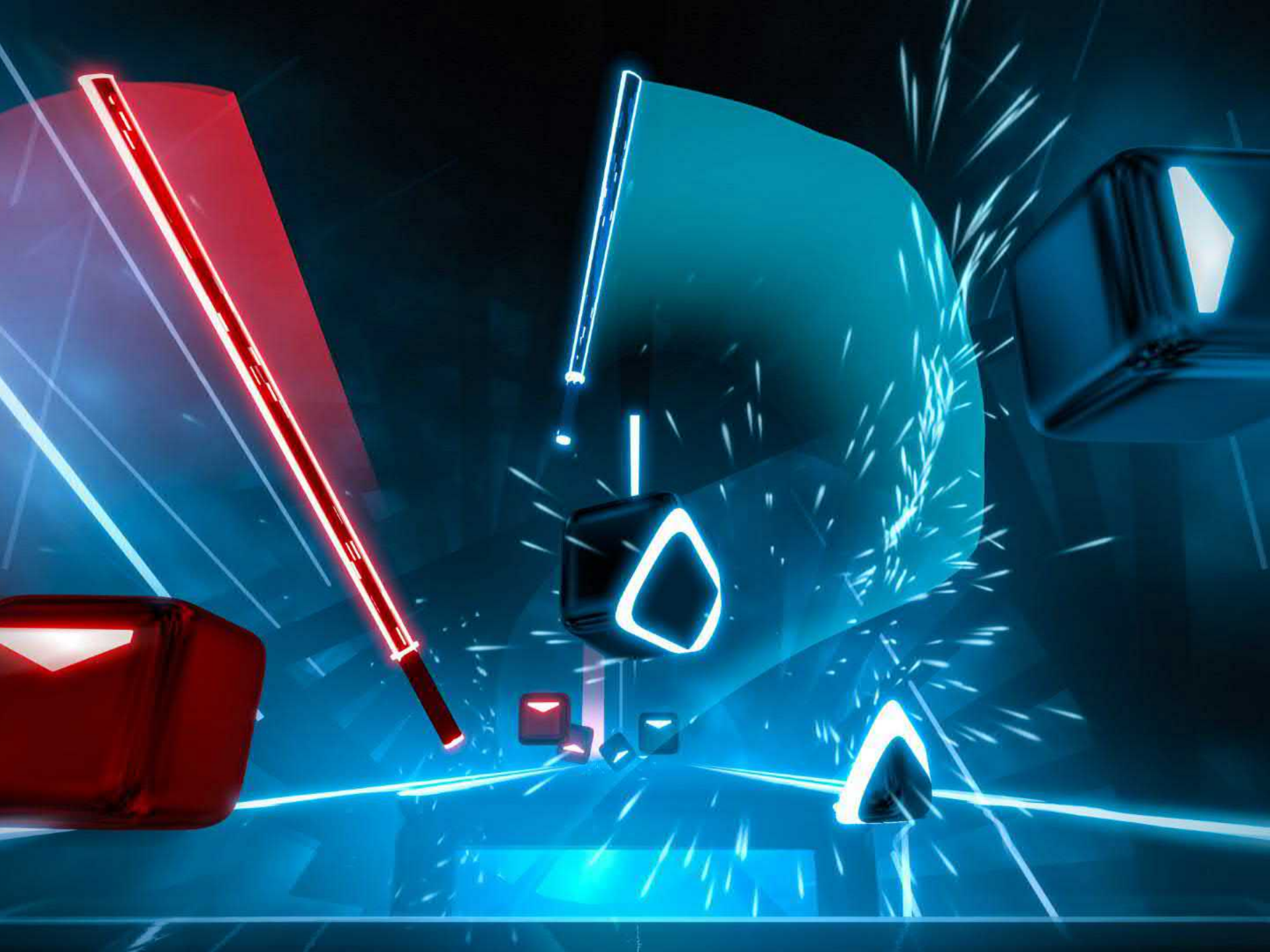OpenLab

Zoom BG

(Thanks, COVID! /s)

Lecture Start!

WHAT ARE GAMES?

Prof. Levine says:

GAMES ARE...

"a series of interesting decisions."
- Sid Meier

"a problem-solving activity, approached
with a playful attitude."
- Jesse Schell

Prof. Levine says:

**That's not super important.
What about "fun"?**

"Fun is pleasure with surprises."
- Jesse Schell

Prof. Boisvert says:

GAMES ARE…

basically frameworks for play experiences.
generative.
verbs.

there are many kinds of games, but they all share the same elements.
and these parts interact to generate play.

together they create a dynamic system.

GAMES, DESIGN and PLAY

A DETAILED APPROACH TO ITERATIVE GAME DESIGN

Colleen **MACKLIN** | John **SHARP**

Tenth Anniversary Edition

The Art of Game Design

A Book of Lenses

Jesse Schell

CRC Press

GAME ELEMENTS

- **Actions**: The activities players carry out in pursuit of the game's goals.

- **Goals**: The outcome players try to achieve through their play, whether they be measurable or purely experiential

- **Rules**: The instructions for how the game works

- **Objects**: The things players use to achieve the game's goals

- **Playspace**: The space, defined by rules, on which the game is played

- **Players**: The operators of the game

GAME DESIGNERS can control a lot of that.

BUT....

AS DESIGNERS…

the challenge of creating play experiences is that they represent a second-order design problem.

because we create the play experience indirectly through a combination of rules, actions & goals.

the game only takes place when activated by the player…

SPACES OF POSSIBILITY

because games are interactive, they also provide players a variety of possible actions & interpretations.

while a designer can't predetermine all the possible actions & experiences players will have, we can limit or open up the opportunities through the games combination of elements.

GAME STATES

The "snapshot" of the current status of game elements, player progress through a game, and toward the game's (and player's) goals. Game state is constantly in flux based on player engagement with the game.

TO RUN ALONG WALL:
RUN TOWARD WALL WHILE HOLDING R

GAME TYPES

- Action

- Action-Adventure

- Adventure

- Role-Playing

- Simulation

- Strategy

- Sports

- MMO

- Casual

- MMO

- Puzzle

- Idling

- Advergame

- Art
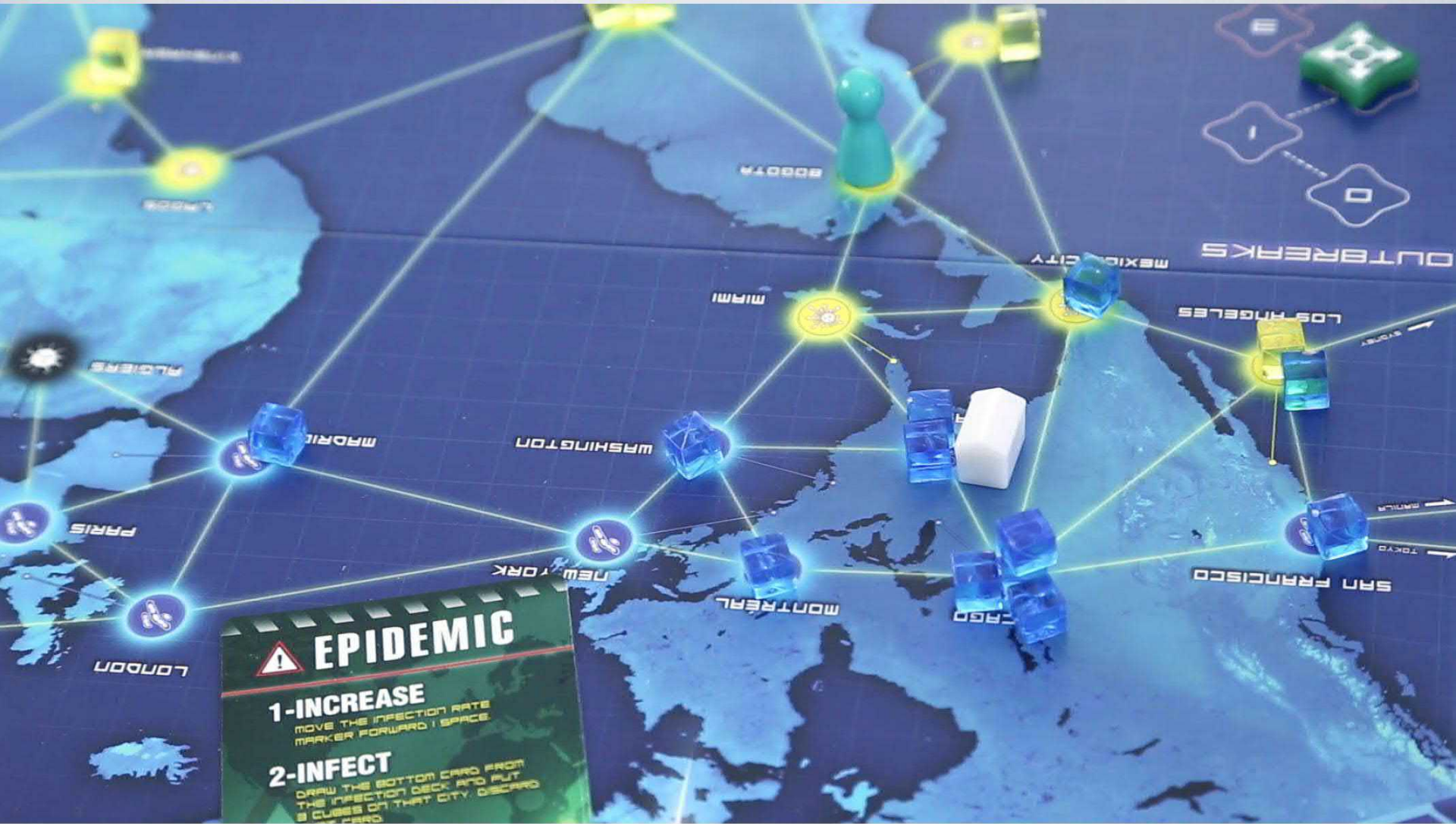
- Exergame

- Fantasy

- Serious

- Educational

GAMES ARE MACHINES THAT GENERATE DESIGNED PLAY.

TOOLS OF DESIGN

- ABSTRACTION: non-representational game element, generating play out of everyday activities, simplifying real world phenomenon.

- THEME: conceptual framework for how the game represents itself, take away & tone

- STORYTELLING: interplay of text, player action and game goals, environmental interaction, game structure & story content.

- CONTEXT OF PLAY: the physical environment & technical platform upon which a game is play.
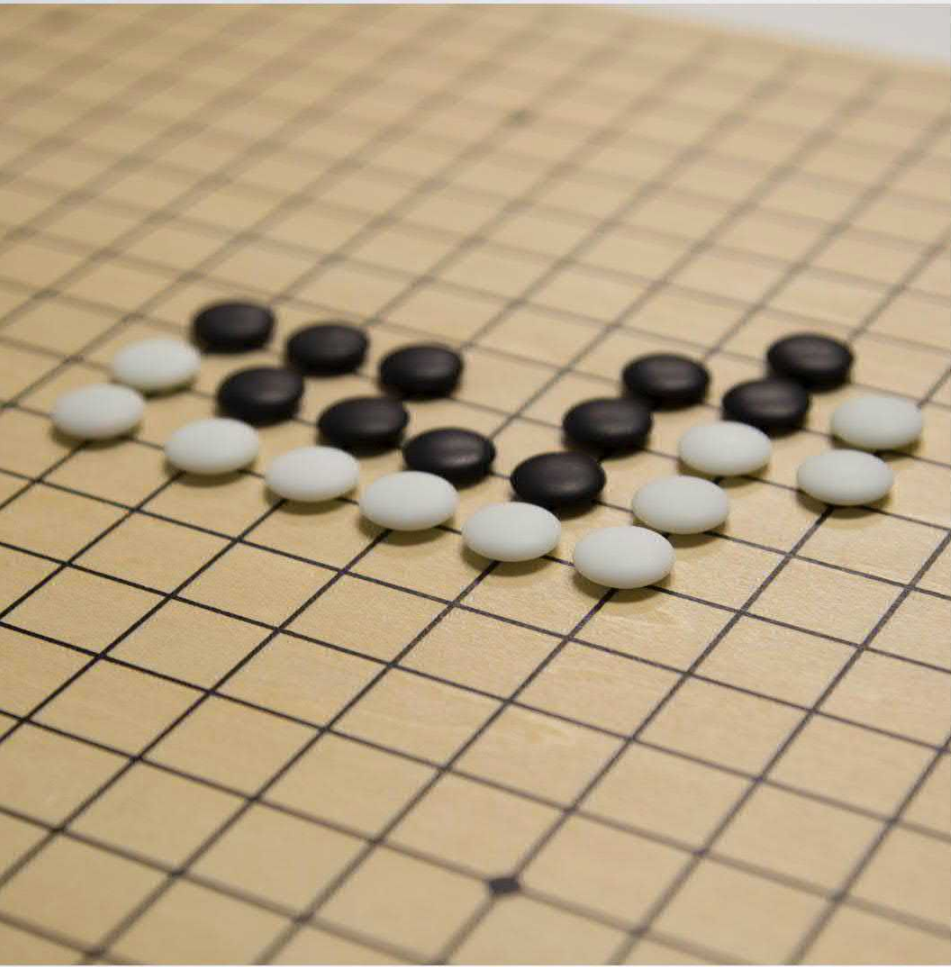
ABSTRACTION

ABSTRACTION

THEME
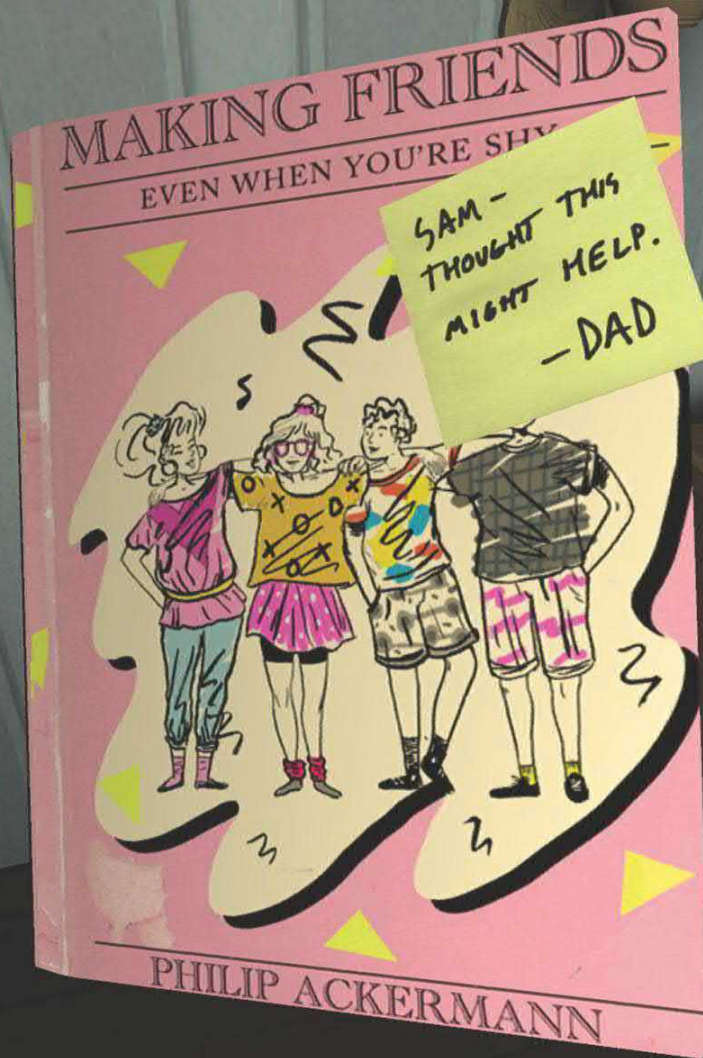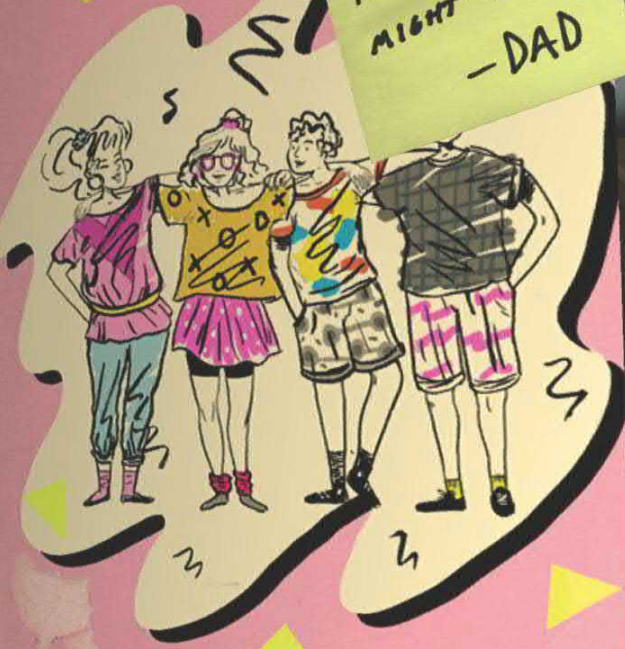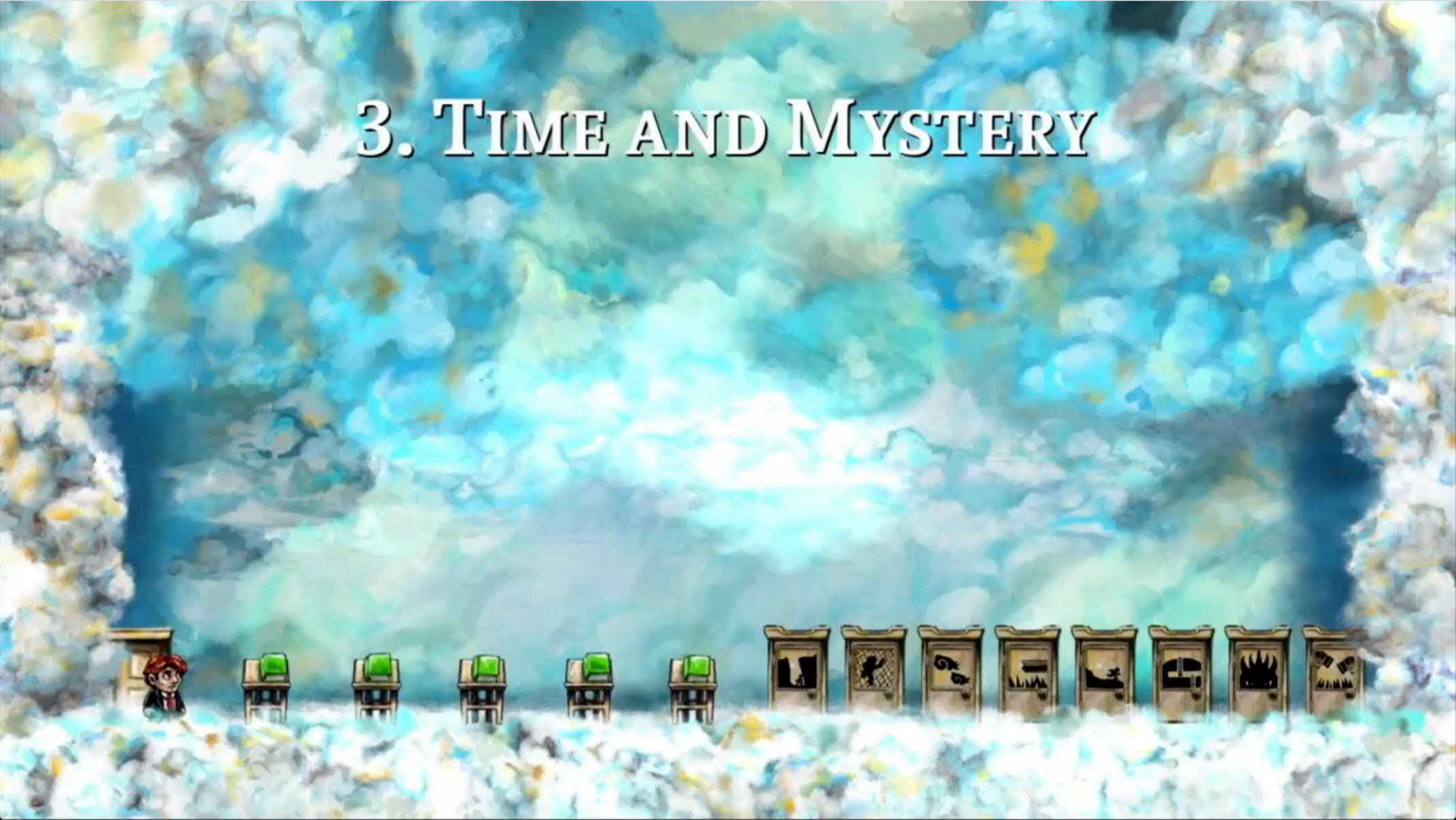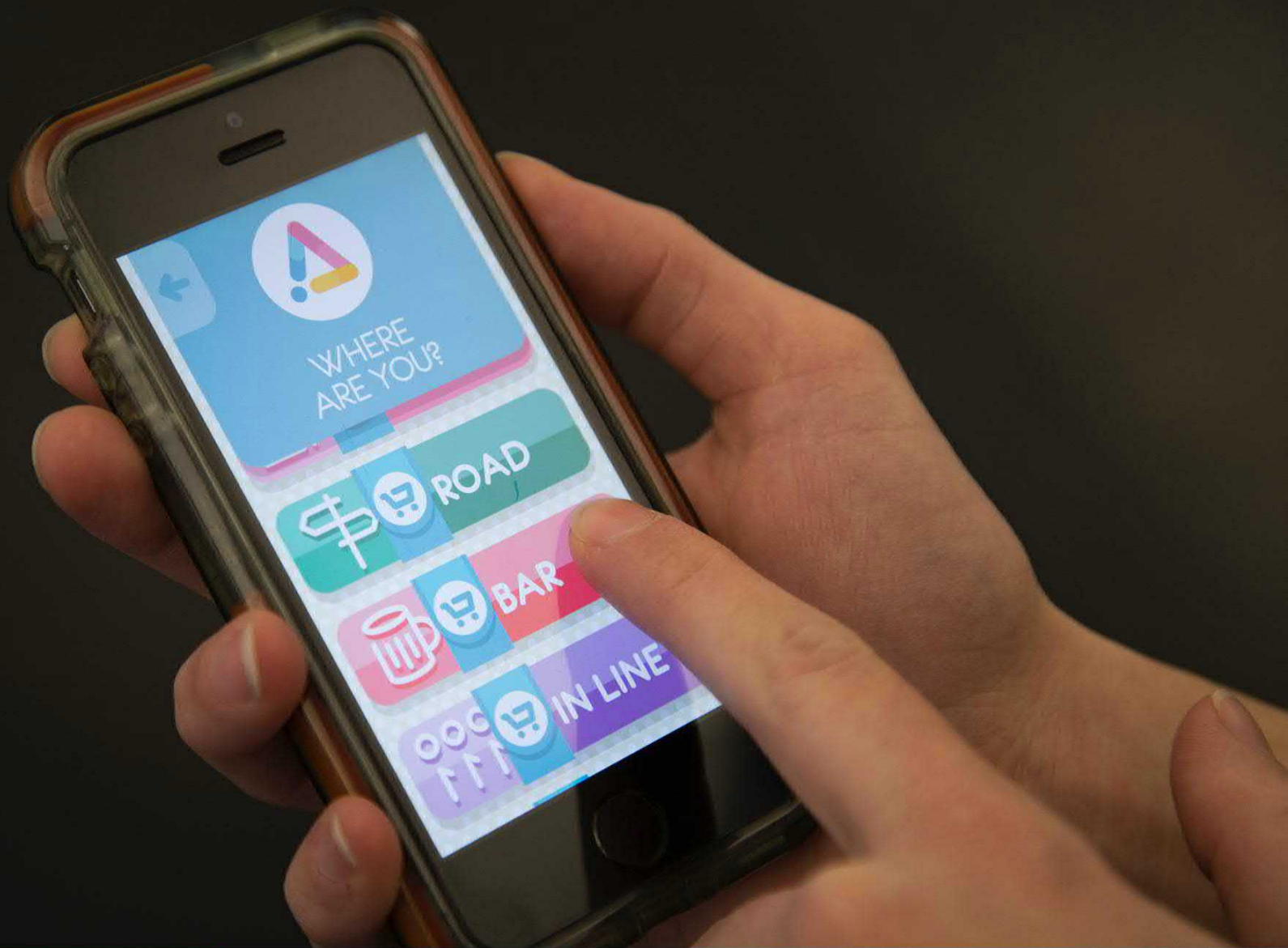
3. TIME AND MYSTERY

IN CLASS EXERCISE

1) Identify the basic elements in a game of your choice
(actions, goals, rules, objects, playspace, players)

2) As a thought experiment, swap one element between two games:
a single rule, one action, the goal, or the playspace.
For example, if you applied the playspace of chess to basketball.

3) Pick a game you played as a child.
Try to map out the space of possibility.
Take into account the goals, objects, rules, playspace as parameters
inside of which you played the game.
The map might be visual flowchart or a drawing.

IN CLASS EXERCISE

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For example, if you applied the playspace of chess to basketball.

3) Pick a game you played as a child.

Take int   amelers

                                                                    rawing.

TECH PIPELINE.

Follow us f 🐦 📷

Made with unity
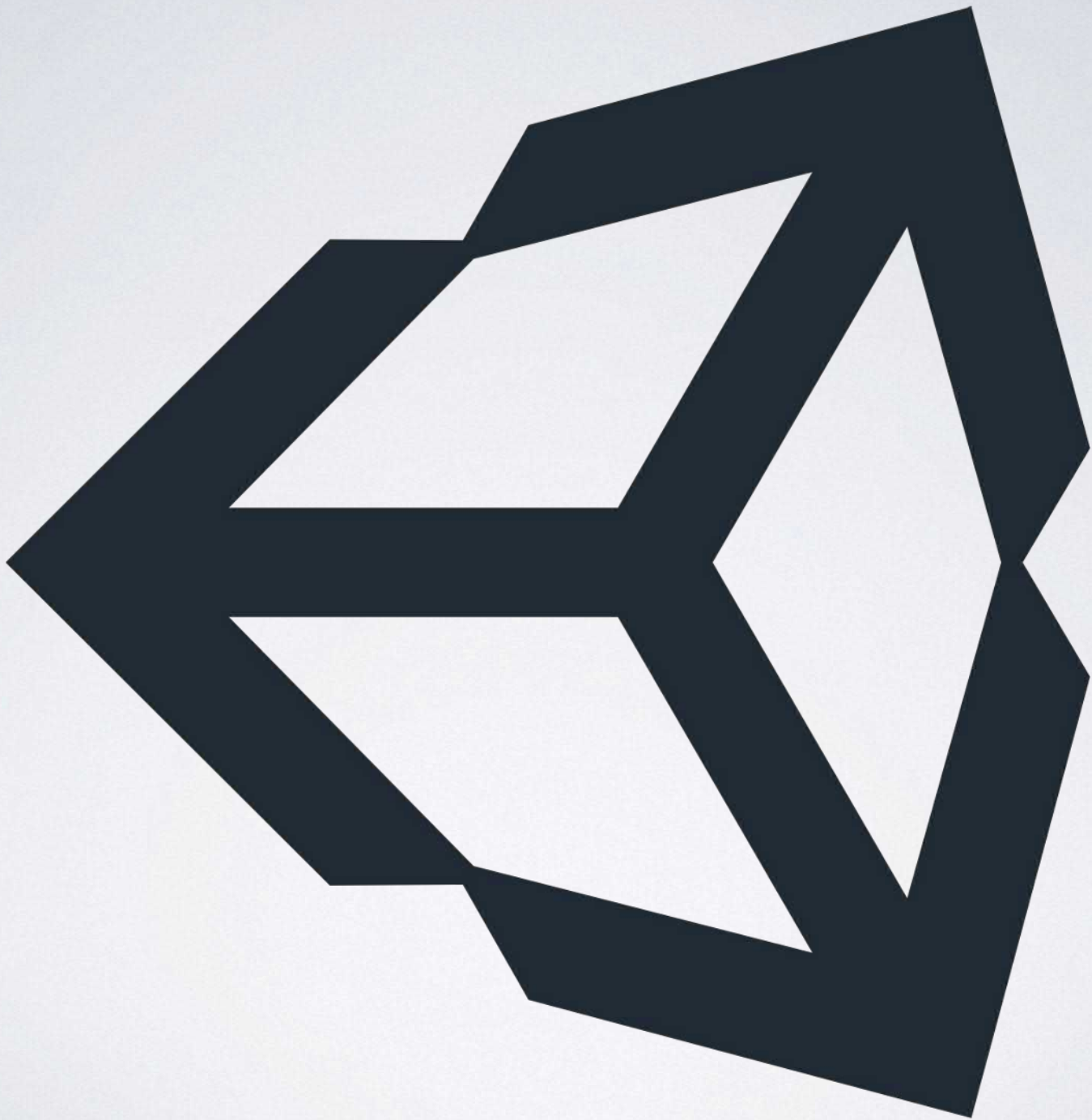
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+ More

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Oculus Rift

PlayStation VR

+ More

TV

Apple TV

Android TV

Samsung SMART TV

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Unity Web Player

Web GL

CATEGORIES

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Fighting

Platformer

RPG

Sports

Adventure

Graphics

Puzzle

Shooter

Strategy

Arcade

Non-Game

Racing

Simulation

Survival

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Award Winners of Festival 2016 Announced!

This year's amazing Festival ended with a look at some of the best, brightest, and most inspired independent games in the world.

IndieCade Festival 2016
(click here to find out more) ›

IndieCade Europe!
(click here to find out more) ›

Past Games

Here are some of the fantastic games that have been featured at IndieCade. Click the images to find out more about each game. There's some real magic in here!

Geobook
by levitylab

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The Games of 2016!

@G4C: RT @kickstarter: .@G4C's video game about nuclear security aims to affect real-world change: ...

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13 THE 13TH ANNUAL GAMES FOR CHANGE FESTIVAL

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HOT NEWS HEADLINES

The Second G4C Student Challenge Kicks Off With Professional Teacher

WHAT PEOPLE ARE PLAYING

The Foos

Smorball   8.0

WHAT PEOPLE ARE SAYING

"*Create a player experience that's fun first. If you remove the fun, [players] will feel like they're being preached to and it's not a game any more,*"

WHERE TO START?

THE PIPELINE

- Concept (Pre-Production)

- Design (Production)

- Development (Production)

- Launch (Beta-Testing & Marketing)

CONCEPT

- high concept & pitch

- concept document*

- concept art

- world building document*

- game design document (GDD)*

- technical design document (TDD)*

- paper prototype

Contents

Game Development Team

PRODUCER
Michael Sehgal

PRODUCTION MANAGER
Adam Crespi

PRODUCTION COORDINATOR
Aline Tosini

GAME DESIGNERS
Adam Crespi
Kris Orpilla

SYSTEMS/IT COORDINATOR
Laura Johnston

PROGRAMMERS
Mike Geig
Emil Johansen
Arturo Nunez
Mike Preble

TECHNICAL ARTISTS
Craig Barr
Kris Orpilla
Sergio Gardella

Game Objectives

The objective of the game is to survive for as long as possible, while attacking Enemies and scoring points.

Game Rules

The game level is a closed environment set in a child's room where the Player is attacked by fluffy zombified toys. The Player can move around and attack these Enemies with 4 different Weapons (see Weapons). In this level, there are different spawn points from which the Enemies originate. Each Enemy has a different behavior and will try to defeat the Player (see Enemies). The Player scores points by killing Enemies: the number points earned depends on the Enemy type. After collecting a specific number of points (see Allies), the Player can spawn an Ally who will help him for a limited amount of time.

Game Structure

Level1

Character selection

Gameplay (endless)

Losing screen

Player

Player Characters

The boy and girl live a wonderful life at their age of 4. They have a great room where they sleep at night. Problem is, their parents have given them too many plush animals without noticing that at night they all become zombified!

Player Metrics

Speed: 6
Max Health: 100
Attack Damange: N/A
Time to attack: Depending on weapon

Player States

Idle: The idle state is s cycled animation where the Player is yawning. It plays back when the Player remains still.

Move: The movement animation will cause the character to bounce with little jumps. It will be triggered when the Player moves the character.

Death: The death animation will make the character fall backwards when their life reaches zero.
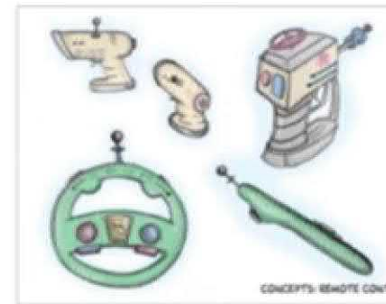
Player Weapons

The Player has 4 different Weapons to attack the Enemies, each with a different effect.

WEAPON	DESCRIPTION	EFFECT ON ENEMY	COOLDOWN	RETICLE
Lightning Ray	Fires a Lightning Ray effect from the Player RC in the direction of the mouse cursor	Restores 50 to the health of the Enemy	1	No
Freeze Ray	Fires a Freeze Ray effect from the Player RC in the direction of the mouse cursor	Freezes a maximum of 20 Enemies, so they cannot move	0	No

Gameplay

Game Controls (PC)

move left

switch weapon

move forward

fire

tab

W

move back

move right

A   S   D

rotate
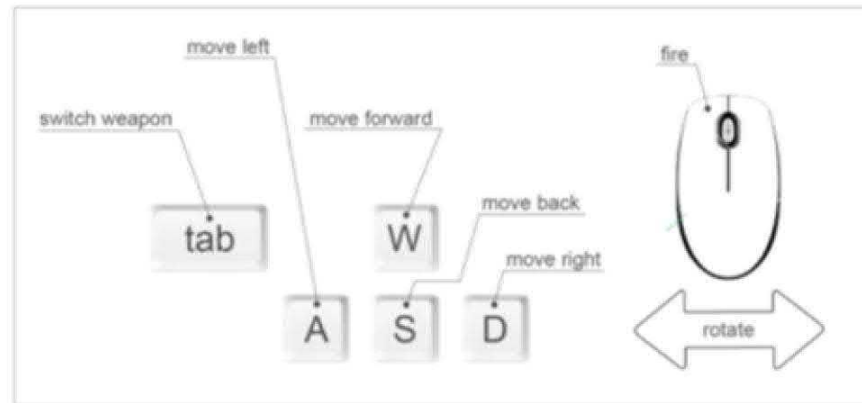
Game Controls (Mobile)

With touch control, the Player will use two fingers to move the character, aim, and attack. The first finger that presses the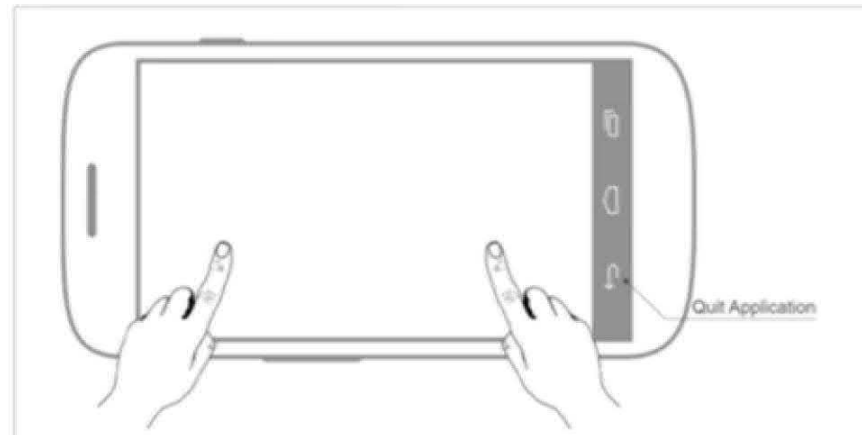 screen will move the character, while the second finger that presses the screen will make the Player attack (i.e. fire/shoot) in that direction.

Quit Application

Game Camera

When the game starts, the camera will focus on the two characters the Player can choose from. The camera will remain still while the Player chooses a character to play with.

After the selection is made, the camera will turn 180 degrees and will continue following him/her from a fixed point of view. The camera will not rotate with the Player's movement.
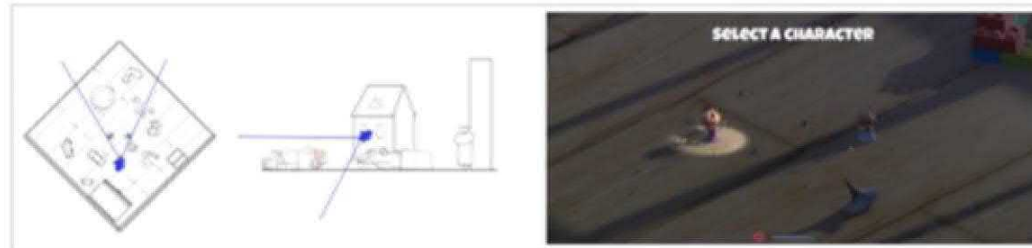
The background will be seen from a 3/4 perspective but for convenience it will be rotated by 90 degrees so that the camera can use the global coordinate system.

The camera will not turn when the Player does, so we get to see him/her from different angles as the scene maintains the same camera view.

HUD

PLAYER DAMAGE
Indicates the amount of life the Player has

COUNTDOWN SLIDER

Audio

NAME	CATEGORY	DESCRIPTION
music_rev1_loop_01	Background music	Plays during the game
Lightning Zap	FX	Lighting Attack fire
wpn_elec_attack_01	FX	Lighting Attack fire, variance 1
wpn_elec_attack_02	FX	Lighting Attack fire, variance 2
wpn_elec_attack_03	FX	Lighting Attack fire, variance 3
wpn_elec_hit_01	FX	Lighting Attack hits something, variance 1
wpn_elec_hit_02	FX	Lighting Attack hits something, variance 2
wpn_elec_hit_03	FX	Lighting Attack hits something, variance 3
wpn_gas_attack_01	FX	Stink bomb Attack fire
wpn_gas_attack_loop_01	FX	Stink bomb Attack smoke
wpn_gas_equip_01	FX	Optional (sounds when weapon is selected)
wpn_gas_hit_01	FX	Stink bomb Attack hits something, variance 1
wpn_gas_hit_02	FX	Stink bomb Attack hits something, variance 2
wpn_gas_hit_03	FX	Stink bomb Attack hits something, variance 3
wpn_gas_target_01	FX	N/A
wpn_goo_attack_02	FX	Slime Attack fire
wpn_goo_equip_01	FX	Optional (sounds when weapon is selected)
wpn_goo_hit_02	FX	Slime Attack hits an Enemy
wpn_goo_hit_loop_01	FX	Slime Attack attaches to an Enemy
wpn_ice_attack_01	FX	Freeze Attack freezes an Enemy
wpn_ice_blast_loop_01	FX	Freeze Attack firing
wpn_ice_equip_01	FX	Optional (sounds when weapon is selected)
wpn_ice_freeze_01	FX	Freeze Attack freezes an Enemy, variance 1
wpn_ice_freeze_02	FX	Freeze Attack freezes an Enemy, variance 2
wpn_ice_freeze_03	FX	Freeze Attack freezes an Enemy, variance 3
wpn_ice_hit_01	FX	Optional (for when the Enemies break the ice)
wpn_ice_hit_02	FX	Optional (for when the Enemies break the ice)
wpn_ice_hit_03	FX	Optional (for when the Enemies break the ice)
Hellephant Death	FX	When the Hellephant dies
Hellephant Hurt	FX	When the Hellephant gets damaged

5:30

DESIGN

- gameplay mechanics (navigation, controls & triggers)

- story development (storyboards, scripts)

- asset creation (2D/3D art, textures, materials, characters, sound, GUIs)

- level design (asset integration, layout, lighting)

WORLD OF WARCRAFT MODELS IN MAYA 2008
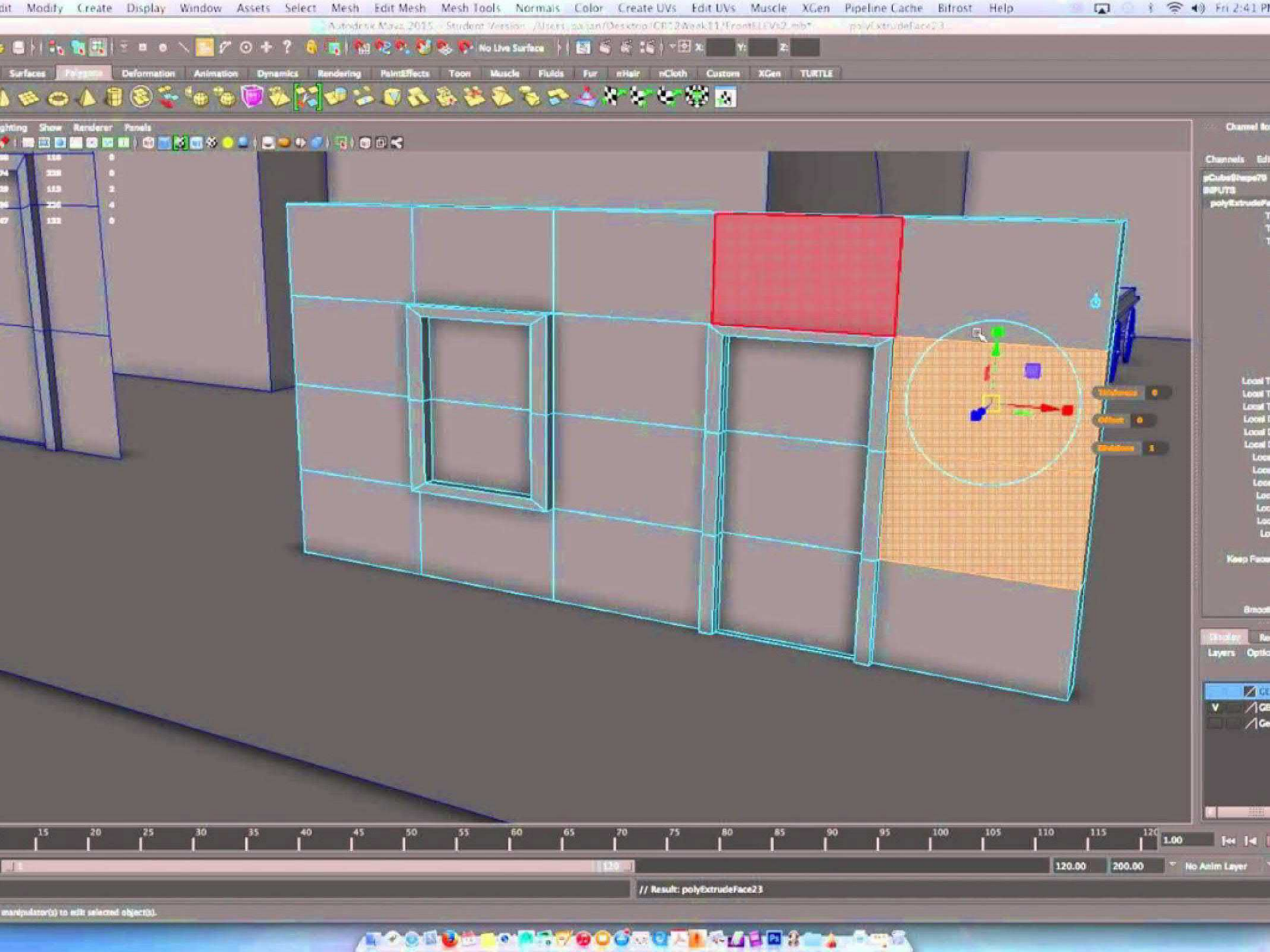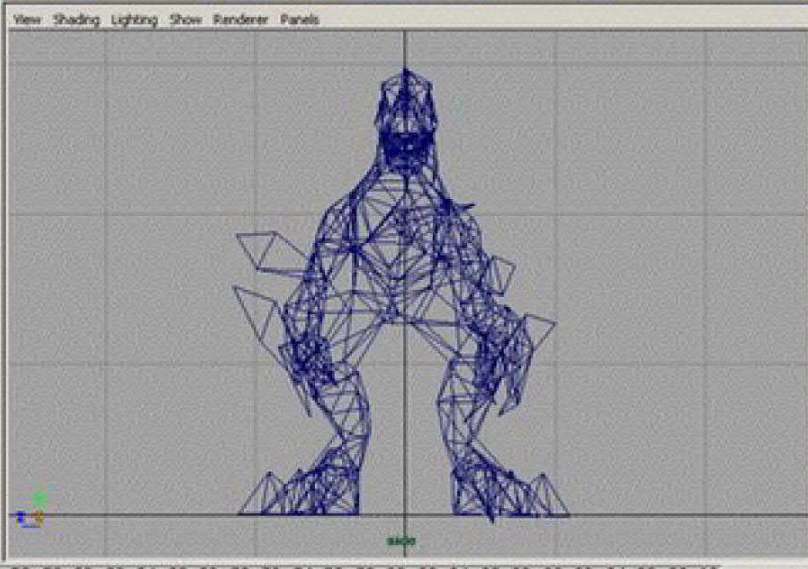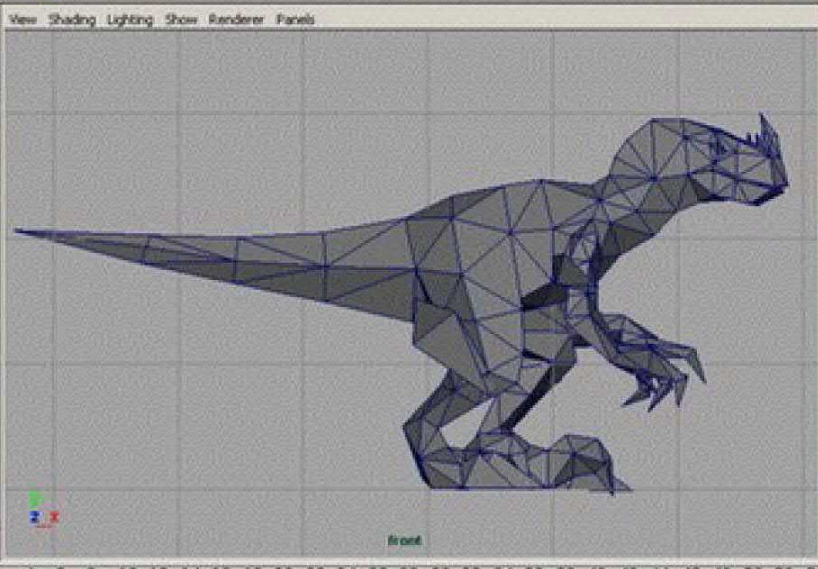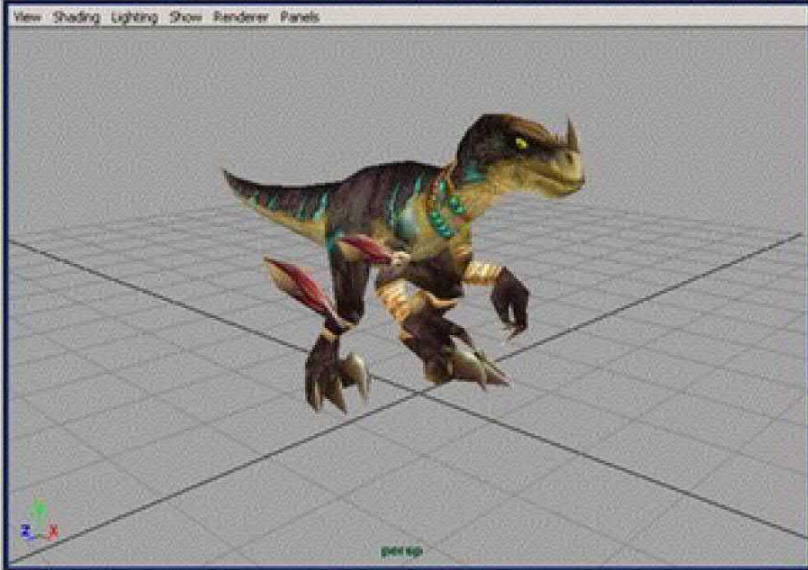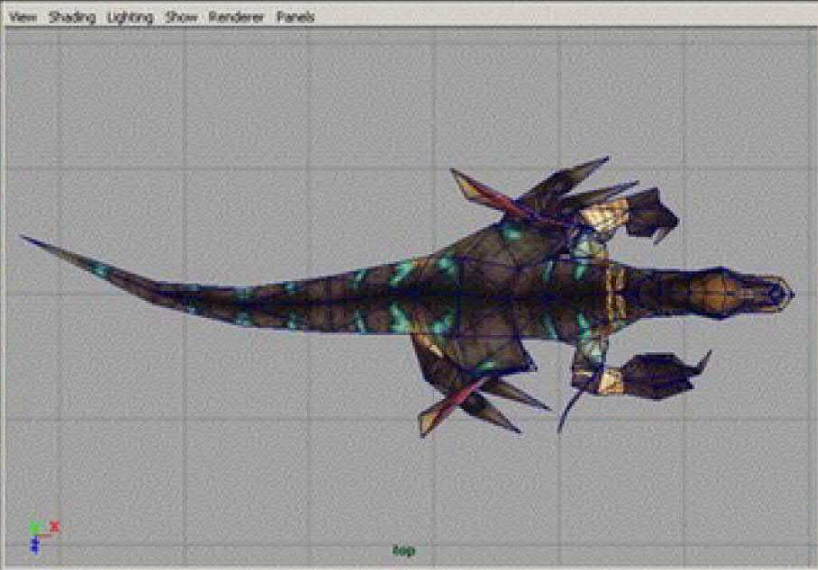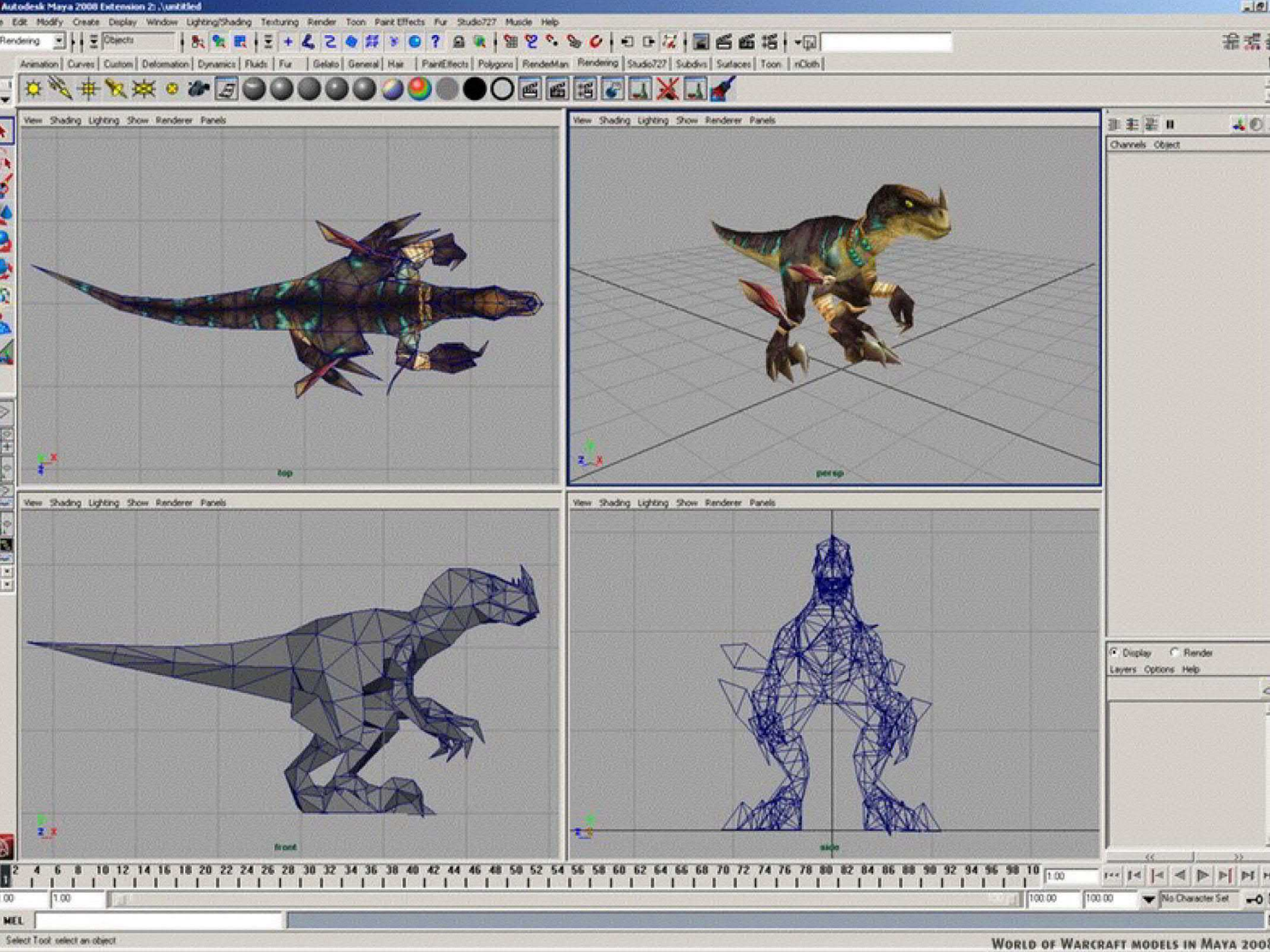
DEVELOPMENT

- scripting game play

- scripting behaviors

- scripting AI

- scripting tools

- scripting GUIs

- testing & debugging

Debug

Solution

trol.cs × | GameplayUpdate.cs × | EndGame.cs × | AudioScript.cs × | scriptEnemy.cs × | scriptCell.cs × | ButtonTouch.cs × | scriptPlayer.cs ×

```
ine;
ollections;

criptPlayer : MonoBehaviour {
, spotReached, north, south, east, west;
t direction, steps, speed;
moveP; GameObject gameSFX; GameObject gameBGM; AudioScript sfxScript; AudioScript bgmScript;
rStart; Color colorEnd; float duration = 0.3f;

() {// Use this for initialization
false; north = true; south = false; east = false; west = false; spotReached = true;
Globals.pSpeed; steps = 0; direction = 1; //N = 1, E = 2, S = 3, W = 4
GetComponent<movePlayer>();
= GameObject.FindWithTag("Audio"); sfxScript = gameSFX.GetComponent<AudioScript>();
= GameObject.FindWithTag("Music"); bgmScript = gameBGM.GetComponent<AudioScript>();
t = renderer.material.color; colorEnd = new Color(colorStart.r, colorStart.g, colorStart.b, 0);


e() { if(!Globals.paused){// Update is called once per frame
if still moving to square
){ //moving to next space
tReached){
rth){ direction = 1; transform.eulerAngles = new Vector3(0, 0, 0); }
st){ direction = 2; transform.eulerAngles = new Vector3(0, 0, 270); }
uth){ direction = 3; transform.eulerAngles = new Vector3(0, 0, 180); }
st){ direction = 4; transform.eulerAngles = new Vector3(0, 0, 90); }

ached = false; if(steps == 3) sfxScript.sndMove();
in direction
count steps until in next space
bals.readyP) moveP.Move(direction); steps++; if(steps >= (20/speed)){ steps = 0; spotReached = true; }

let go of button
tReached){ //let go of button, but still moving
lobals.readyP) moveP.Move(direction); steps++; if(steps >= (20/speed)){ steps = 0; spotReached = true; }
```

57 : 59   IN

LAUNCH

- 1st playable

- alpha

- beta

- code release (bugs fixed & shipped)

GAME ENGINES
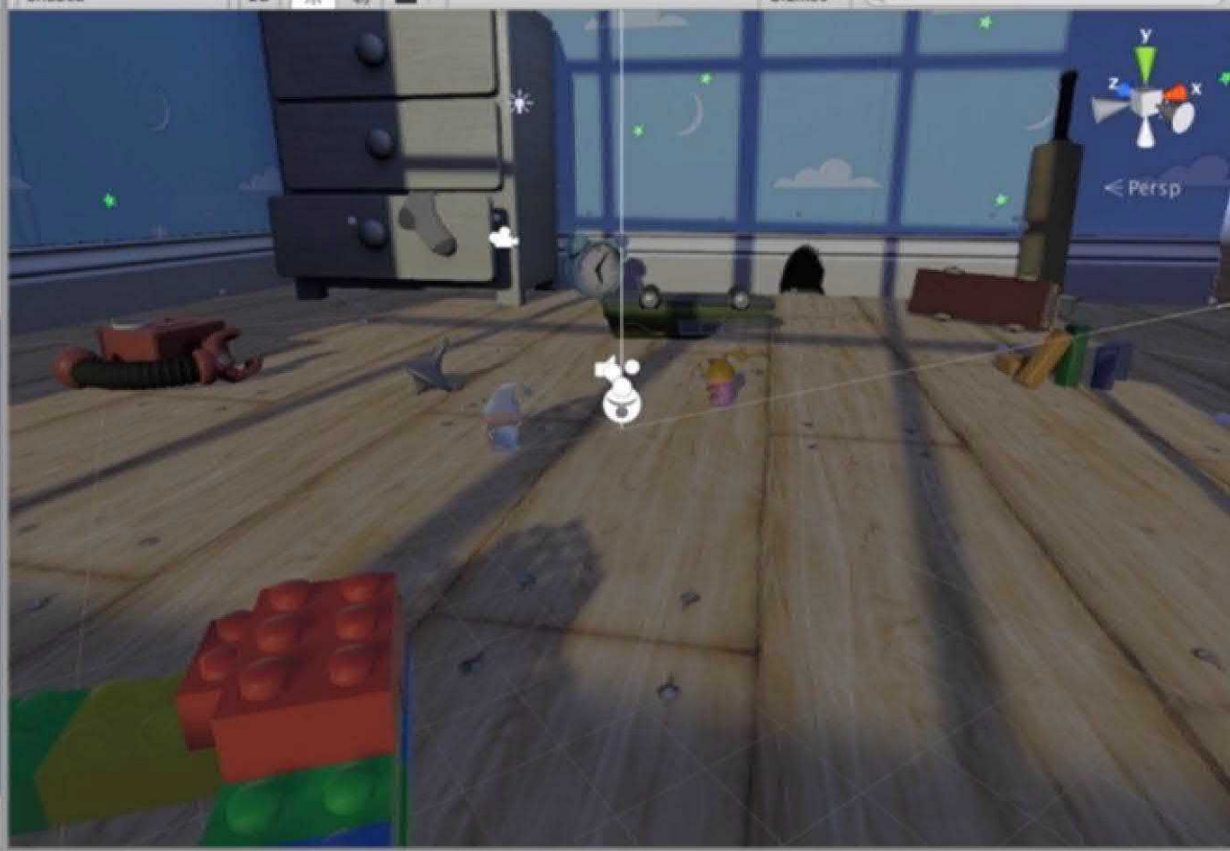
- In-House (Build from Scratch; Scimitar or CryEngine)

- Full Tool Chain (Unreal & Unity SDKs)

- Middleware & Integrated Libraries

Level 01.unity - ZombieToys - Web Player <OpenGL 4.1>

Pivot   Global

Collab ▾   Account ▾

Scene   Game   Animator

Inspector   Navigation   Services

Shaded   2D   Gizmos   Q▾All

Moonlight

Tag Untagged   Layer Default

▼ Transform

Position   X -41.2   Y 29
Rotation   X 18.8323   Y 51
Scale   X 1   Y 1

▼ Light

Type   Directional
Baking   Realtime

Color
Intensity
Bounce Intensity

Shadow Type   Soft Shadows
Strength
Resolution   Use Quality Settings
Bias
Normal Bias
Near Plane

Cookie   Sunlight_Cookie2-01
Cookie Size   30
Draw Halo
Flare   None (Flare)
Render Mode   Auto
Culling Mask   Everything

Nothing
✓ Everything
✓ Default
✓ TransparentFX
✓ Ignore Raycast
✓ Water
✓ UI
✓ Floor
✓ Shootable
✓ LightMask
✓ Invisible
✓ RenderOnTop
✓ IgnoreHits
✓ Blocking
✓ Props

Assets

Animation   AssetStoreTools   Audio   desktop   Fonts   Materials

ROLES & RESPONSIBILITIES

Yes

No

Nah, but I can fake it

Yes

Do you have a "grand vision"?

Consultant

Well... it's been a while

Do you think games are important?

Marketer

Producer

No

You're shit out of luck

Technical Lead

Yes   No   Social Games Studio Employee

No   Do you have any money?   Yes

Studio Head

Programmer

No   Can you make games on your own?

Social Games Studio Head   No   Do you have a conscience?   Yes

SHARKBOMB
Game Design Services

Do you know basic grammar?   Yes   Indie Developer   Gamer   Starcraft Cyberathlete

Yes   No   Are you at least good at playing games?   No   Yes, Korea   Gold Farmer   Concept Artist   Yes

Blogger   Are you visually oriented?   Yes   Are you from Asia?   Yes, China   Yes   Comic Artist

Do you mind being underappreciated?   Yes   No   Yes   Do you prefer working over talking?   Yes   Are you French?   No   Asian?

No   Do you like to work with unfinished tools?   Yes   No   Would you rather be a "proper" artist?   Yes   2d Artist   No   No

Do you like to be alone?   No   Level Designer   Art Director   No   3d Artist   Environmental Artist   Yes   Do you enjoy crafting crates?

No   Yes   Do you speak Spreadsheet?   Yes   Do you want to be told what to do?   No   Lead Game Designer   Game Designer

Are you musical?   Yes   No   Writer   Yes   Do you obsess over details?   No   Event Scripter

Would you rather be in the movies?   No   Do you like to shoot or blow things up?   Yes   Sound Designer   Yes   Do you have an unnatural fixiation on gore and blood?   No

No   Office IT   Voice Actor   No   Composer   Yes   Military Shooter Packaging Model   Yes   Combat Designer

The Art Director

Ensures the overall look and feel is consistent

Verifies that all game assets adhere to the concept art and intellectual property specifications

The Game Designer

Designs and implements game mechanics and game play in the levels

May do considerable scripting of behaviors and animations

The Concept Artist

Generates the initial ideas of characters and environments for the game

Defines the look and feel of game elements

The Environment Artist

Constructs environment assets including models and textures

May create environment concept art depending on studio size

The Character Artist

Constructs characters and props including models and textures

May create character concept art depending on studio size

The Level Designer

Plans and builds environments

May also light the level and add characters depending on studio size

The Technical Artist

Helps bring assets into the game, including animations

Ensures art is optimized for a game engine

MONETIZATION

- physical purchase - buy a game packaged on DVD

- download - buy a game via digital download

- subscription - requires continuous ongoing payment

- freemium - free to play initial, additional or upgraded levels or content can be purchased

- in-game purchase - purchase content within the game via micro-transaction

- advertising -publishers embed ads in game btw levels or integrated into game itself

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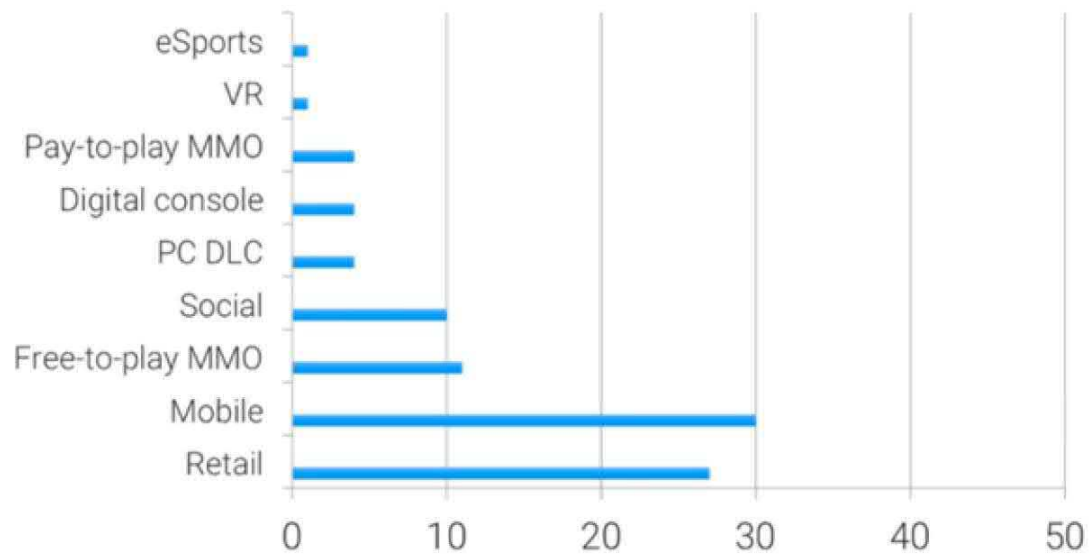
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   Sports
   Strategy

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z #

Popular Apps

Candy Crush Saga	Angry Birds Go!	What's the Difference? ~ spot the h...
Subway Surfers	DragonVale	Jelly Splash
Temple Run	Sniper 3D Assassin: Gun Shooting ...	High School Story
Pokémon GO	Castle Clash: Rise of Beasts	Diamond Dash
Temple Run 2	Tetris® Blitz: 2016 Edition	100 Balls
Clash of Clans	Office Jerk	Doodle Jump
Words With Friends Classic	Solitaire-	Fashion Story™
Solitaire	Smashy Road: Wanted	Traffic Racer
Draw Something Free	Clumsy Ninja	Deal or No Deal
Trivia Crack	ZigZag	DEAD TRIGGER
Flow Free	Highway Rider	Candy Crush Jelly Saga
Fruit Ninja Free	1010!	Mancala: FS5 (FREE)
Despicable Me: Minion Rush	Stack	Pokerist: The Best Texas Holdem P...
Jetpack Joyride	Doodle Jump FREE – BE WARNED: I...	Paper Toss Boss
Bike Race Free – Top Motorcycle Ra...	Mobile Strike	Best Fiends Forever
8 Ball Pool™	Slotomania Free Slots – Casino Slot...	Stupid Zombies Free: Gun Shooting...
The Sims™ FreePlay	MARVEL Contest of Champions	Pet Shop Story™

GENRES ARE MARKET-DRIVEN

WHAT NEW
platforms
genres
content
peripherals
distribution channels
CAN YOU COME UP WITH…

LAB Part II

No OpenLab post required for this one.

Let's practice CONCEPTing.

This year's Global Game Jam theme is LOST & FOUND.

Questions?

Next Week's Playtimes from Howlongtobeat.com:

Baba is You: 6 story, 19 w/ extras
Papers Please: 4.5 story, 8 w/ extras
Braid: 5 story, 6 w/ extras