Game Design Workshop

A POSTERIORI
Play · Experience · Learn

Start Page   Forest/Level 2 ✕

Properties ✕

Object name
Player

✏ EDIT

X
8887

Y
-998

Angle
0

☐ Lock position/angle in the editor

Z Order
180

Layer
Base layer

☐ Custom size?

Width
0

Height
0

Animation
0

Instance Variables ⎘

FireLasers   0
FireTongue   0
Life   4
MaxLife   4
TakeDamag   0
Bounce   0
AirTime   0

Objects

PlayerHead
CheckpointFlag
PlatformUpLeft
PlatformClosed
PlatformWallLeft...
Raccoon
RaccoonLog
BatteryItem
PlayerDust
PlayerAdHocSen...
LunaMoth
RaccoonHiss
SlimeWithSpike
Worm
TapeItem
RaccoonBaby

Search

Layers
GUI
Foreground
Base layer
Background
Background color

7232;-1791

What we will be doing...

1) Learn a little about the Game Development Process

2) Hands-on building of two games

3) Your game project

* We'll be mixing things up for 1 & 2, so that it don't get too dry

Hands-on building of games

- Two types of games; **Casual** & **RPG**

- Using the GDevelop game engine

- Step-by-step instructions (...easy to follow)

- Challenges at the end (...not so easy)

Your Game Project

- Day 3
  - …maybe day 2 if you're fast
- **YOU** decide what game to make
- Work alone or in a team
- I recommend RPG, but it's really up to you…
  - **Make what you love**

Game Engines

Unity

GDevelop

Unreal

Godot

- What is a game engine?
  - Software that helps in game creation process
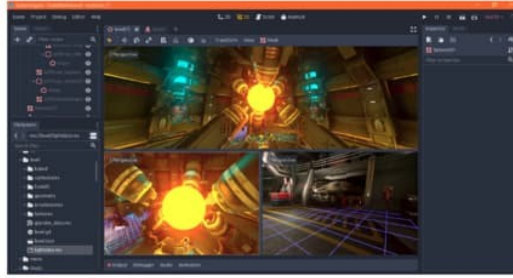
Game Engines

- Provides...
  - Common game operations (eg. Moving player)
  - Rendering to screen (2D, 3D, or both)
  - Game authoring tool (eg. map creator)

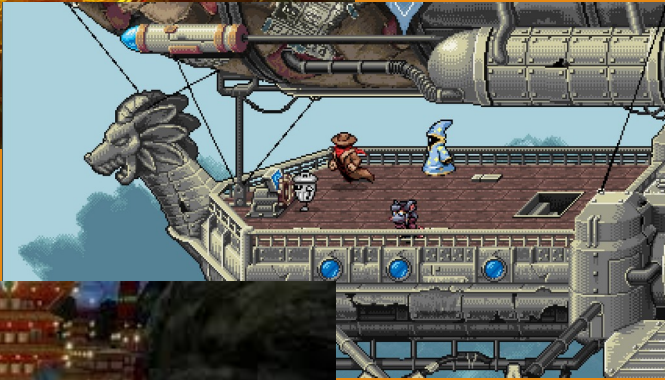Building games without game engine...
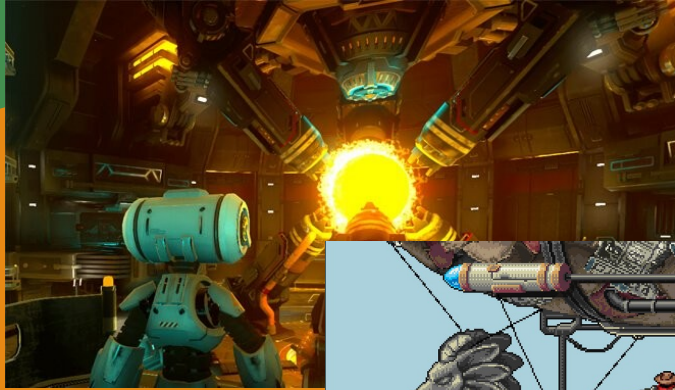
..vs using a game engine

Unity

- Most popular game engine

- 2D and 3D

- Large community

- Program in C#

Unreal

- Popular for big-budget AAA games

- High-end 3D graphics

- Supports 2D, but not popular for this

- Program in C++

Godot

- Free and Opensource
- 2D and 3D
- Rising popularity with indie developers
- Intuitive design
- Program in GDScript, C#, C++, or others

GDevelop

- Free and Opensource

- 2D only

- Designed to be easy to program

- Low code, graphical programming

RPG Maker

- Designed for 2D RPG only

- Easy to use for 2D RPG...

- ...useless for anything else

Game Engines

- The Good...
  - Less skills required
  - Saves time and effort
  - Tuned for high performance

- The Bad...
  - Limitations in what game engine can do
  - Possibly poor performance if you're doing unusual tasks

Are Game Engines Essential?

- No.

- Minecraft doesn't use a game engine

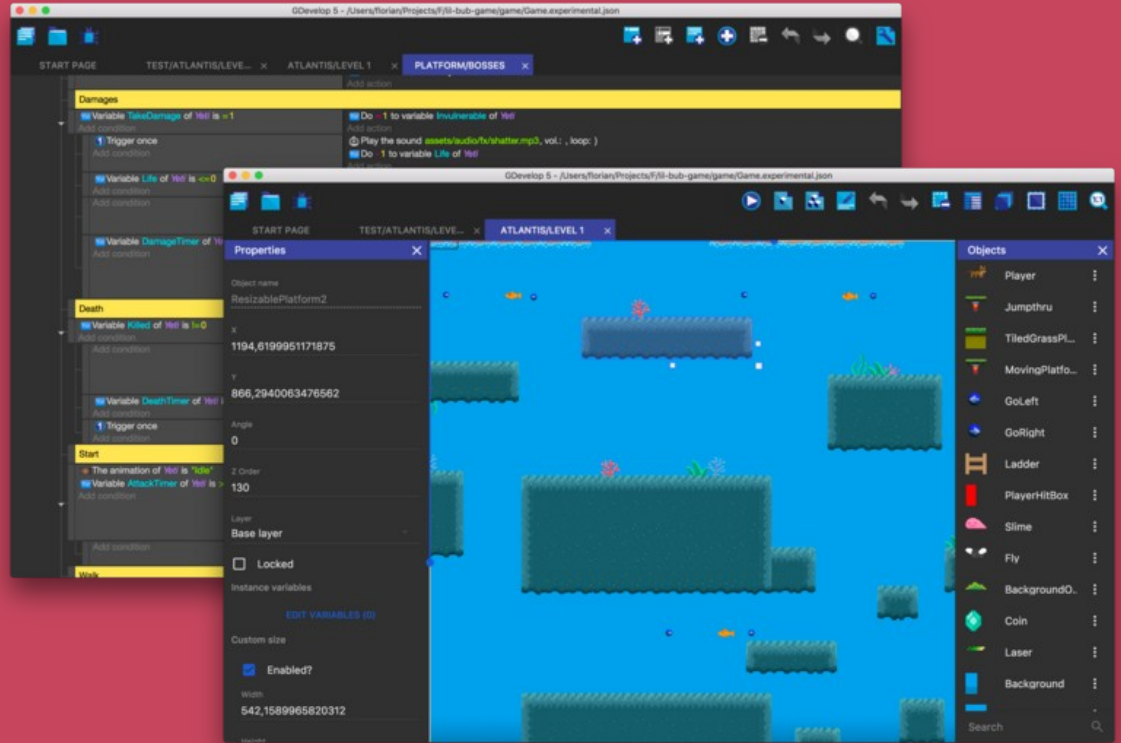- Game mechanism is unique, and not suited to any engines

Scratch, Tynker, MakeCode?

- These are tools for learning coding

- You can make games with them, but that's not their primary purpose

- Lacks capabilities required for a proper game

Gdevelop
(Hands-on)

Running GDevelop

Prerequisites

- Google Drive account
  - − Web-editor can only save and load from Google drive

- Any Email Account

  - − Needed to register a GDevelop account

  - − Needed to share your games with others

Open Game Tutorials Site

- Visit http://a9i.sg/chij
- Click on the GDevelop link

Game Development World

Mainstream Studios

Indie Developers

Mainstream Studios

- Big budget (...average of $60 to $80 million per game)

- Huge number of staff (...hundreds)

- Each member plays a single, highly specific role (eg. facial animation designer)

- Risk adverse. Focus on...
  - Sequels
  - Trendy and popular genres

- Labor of love (low or no budget)
- Small team (~3 to 6 pax)
- Sometimes only one developer
- Each developer plays many roles
- Focus on...
    - Innovative concepts
    - Novel art design
    - Engaging story
    - Retro, but appealing gameplay

Indie Developers

Innovative Concept

Novel Art Design

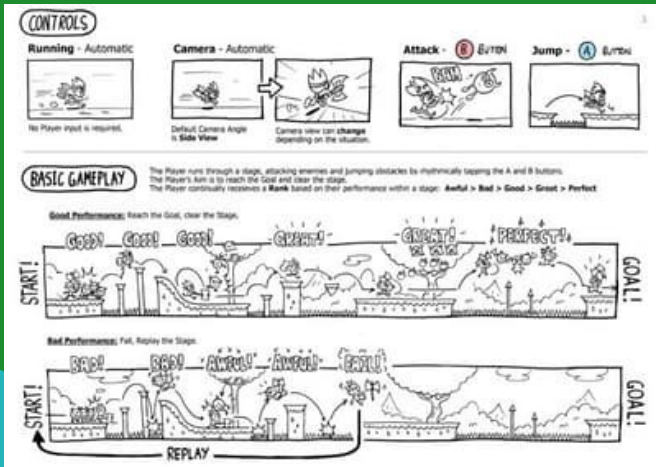# Engaging Story

Retro but Appealing
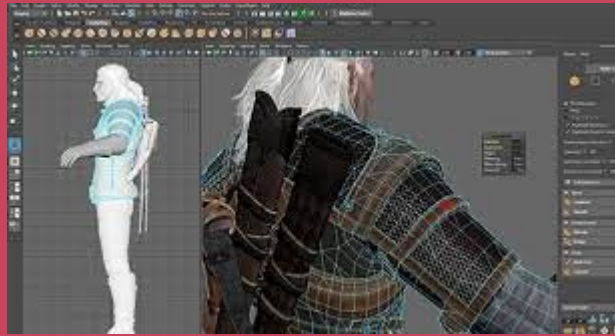
Game Development Roles

- Game Designer

- Graphics Artist

- Programmer

- Writer

- Level Designer

- Sound Designer

Game Designer

- Main architect of the game
- Creates Design Document
  - Theme & Setting
  - Game rules & mechanics
  - Characters
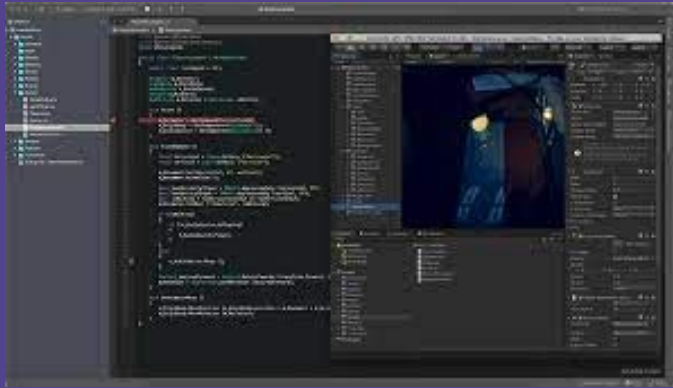 - Missions
  - Game feel

Graphics Artist

- 2D or 3D

- May use computer software, but some uses pencil / paper / paint / clay

- May be highly specialized in large teams (eg. UI artist)...

- ...or a single do-everything guy in small teams

Programmer

- Implements the logic of the game

- Often require skills in math and algorithms...
  - Vector and matrix math
  - Quaternions
  - Graphics and games related algorithms

- Writes the story and dialog for the game

- May be non-existent for some games (eg. Tetris)

- ...or may be the focus for others

- Small game developers often focus on a good story to differentiate themselves

Writer

- Create a balance between...
  - Challenge
  - Beautiful, interesting, and immersive environment
  - Avoid confusion and idling
  - Multiple paths
  - Prevent exploitative tactics

Level Designer

- Create sound effects

- Compose music

- Oversee voice acting

- Manage recordings

- Often outsourced partially or fully, even for small projects

Sound Designer

Game Genres

Platform, Shooter, Fighting, Beat 'em up, Stealth, Survival, Rhythm, Battle Royale, Survival horror, Metroidvania, Adventure, Text adventures, Visual novels, Interactive movie, Real-time 3D adventures, Role-playing video games, Action RPG, Massively multiplayer online role-playing games, Roguelikes, Tactical RPG, Sandbox RPG, First-person party-based RPG, JRPG, Monster Tamer, Construction and management simulations, Life simulation, Vehicle simulation, 4X, Auto battler, Multiplayer online battle arena, Real-time strategy, Real-time tactics, Tower defense, turn-based strategy, Turn-based tactics, Wargame, grand strategy wargame, Racing, Sports, Competitive, Sports-based fighting, massively multiplayer online game, Board game, Casino, Casual, digital collectible card game, Gacha, Horror, Idle, Logic, Party, Programming, Social deduction, Trivia...

Too many to list!

Our Genre

- Casual

- Role Playing Game (RPG)

Casual Games

- Relatively simple to code

- Just need **ONE** innovative and catchy game mechanics

Casual Games

Flappy Bird
- Made in 2-3 days
- 50 million downloads

2048
- Made in 1 weekend
- 70 million downloads

Cookie Clicker
- Made in 1 night
- Peak of 1.5 million players per day

Role Playing Game (RPG)

- Only slightly more difficult to code

- Focus on story and graphics

- Good for developers who are great at writing and drawing

- Much longer to develop, mainly because of graphics and story

Role Playing Game (RPG)

Bastion
- 4 writers / artist
- 2 coders
- 3 million copies sold

Stardew valley
- 1 developer
- 15 million copies sold

Oxenfree
- 4 writers / artist
- 1 coder
- 3 million copies sold

Other Genre Popular for Indie Developers

- Deck Builder
  - Easy to build
  - Hard to balance
- Rogue-like
  - High replay value, different everytime
  - Can be difficult to code

- Turn-based Tactics
  - High replay value, many strategies to try
  - AI can be hard to code
- Platformers
  - Niche appeal
  - Hard to design good levels

Game Mechanics

- System of interaction between player and game
  - What the player can do
  - How the game respond
  - How to make progress
- Some examples...

Mario

- Mechanics
  - Move left or right
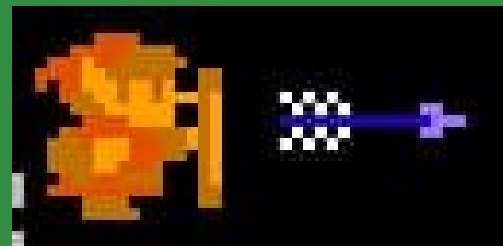 - Jump
  - Land on enemies

TimberMan

- Mechanics
  - Tap left or right to chop down tree
  - Avoid being hit by branches

Legend of Zelda

- Mechanics
  - Move
  - Attack with sword (short range, unlimited)
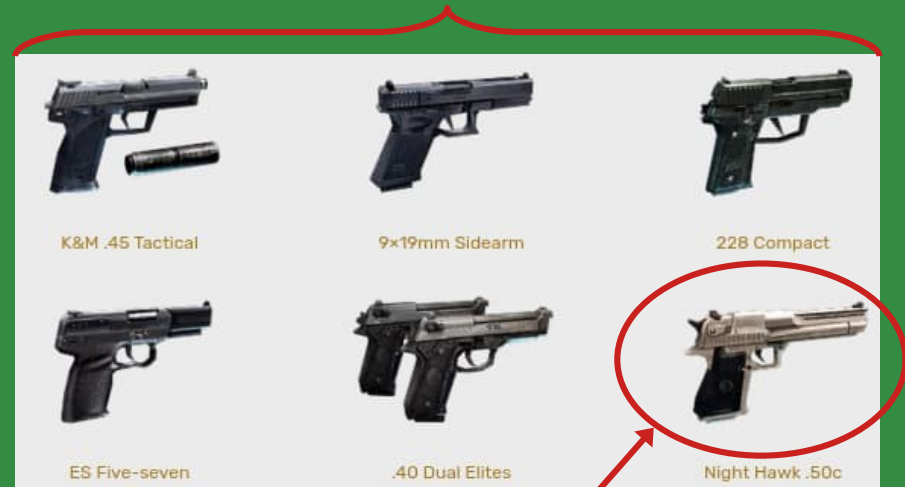 - Attack with bow (long range, limited arrows)

Dilemmas

- Create conflicts for players to resolve

- Examples:
  - Should I try to stomp on this monster, or jump past it?
  - Should I chop down the tree faster, or go slower and more carefully?
  - Do I use my arrows now or save them for later?

Quality over Quantity

- Choices must be meaningful
- If one choice is clearly better than the other, then it's the same as having no choice
  - eg. Many weapons to choose from, but one is clearly the best
  - eg. No matter what you say to an NPC, the outcome will be the same

6 different guns in the game!

K&M .45 Tactical   9×19mm Sidearm   228 Compact

ES Five-seven   .40 Dual Elites   Night Hawk .50c

...everybody chooses this one

Exercise

- As we go through the 2 hands-on games, try to identify...
  - What are the game mechanics?
  - Are there any dilemmas in the game?
  - If so, what are they?

- Keep these in mind as you design your own game on the last day

Game Design Document

- Specify the ideas, mechanics, and other info required to create the game

- Provides a consistent guiding vision during development

Outline

- Game Concept
  - Genre
- Mechanics
  - Rules
  - Dilemmas
- Story
  - Setting
  - Plot

- Game World
  - Areas
  - Characters
  - Obstacles / Opponents
- Interface
  - HUD
  - Controls
  - Menus

Concept

5.1 Concept
The aim of Race'n'Chase is to produce a fun, additive and fast multi-player car racing and crashing game which uses a novel graphics method.

*Later renamed **Grand Theft Auto***

1.1 High Concept
Help a princess escape an evil wizard by using magic portals that open doorways through a trap filled dungeon.

*Eventually redeveloped into **Portal***

Diablo is a rpg wherein a player creates a character and guides him through a dungeon. Actions takes place in an isometric perspective on a turn-based system using the mouse. Many weapons and items can be acquired and used.

MONACO is a thief game. Player can go on solo or multiplayer missions to steal jewelry, art, and cars from the compounds of the rich and famous.

OCEAN'S 11, **CASINO ROYALE**, and **THE ITALIAN JOB** inform the visual style of the game.

MONACO combines the low-level game mechanics of **PACMAN** married with the stealth features of **HITMAN**.

Like the heroes of the best heist movies, players **INCAPACITATE** guards rather than kill them. The guards return to action after a short time

The player can find **DISGUISES** around the environment, which allow them to move freely until they are discovered

Mechanics (Rules / Dilemmas)

Our core gameplay is exploring murky environments and dealing with hostile creatures (by hiding and/or running).

Take place at night and players will have a flashlight or a candle or torch.

- Lights can keep small creatures at bay but will attract large ones
- Fire can activate torches on walls, creating permanent areas of safety
- Using two-handed items (like some doors) requires putting lights down
- Some creatures are invisible and can only be seen by the shadow they cast

From **What Nightmares of Edith Finch**

The core game play in "Silent Hill 2" will be a mix of both fighting "monsters" and solving puzzles.

Fighting – Players will be more inclined to avoid battles entirely because of the disturbing nature. Killing one monster in a somewhat abandoned hospital is not enough to know you're safe.

You control a Russian stacking doll character. If you sneak up behind another doll one size larger than you and press the STACK button, the larger doll will open up, and the smaller doll will jump inside. The player now controls the larger doll.

Every doll has a special ability which may be useful in solving a puzzle, or just fun to perform. Some can tap-dance, and some carry a wrench to fix things. Whenever you stack with a larger doll you now can perform that doll's special ability but not the ability of the inner doll.

From **Stacking**

Story (Setting / Plot)

Three main forces influencing the game universe:

1. Octopus-like secret society called Majestic 12, with its tentacles touching and guiding seemingly all human endeavors.

2. The computer, Adam, created by Majestic 12, but now with its own machine-dream of an ordered society free of humans.

3. J. C. Denton, the player character, a pawn in the game of world domination who becomes the critical piece on the board.

*Setting for **Deus Ex***

- Plot
  - May be non-existent for some games

- Three-Act Story
  1) Introduce characters and setting. What are their motivations? End by introducing the conflict.
  2) Protagonist confronts the conflicts and the source of the conflicts is presented.
  3) Conflict is resolved; wrap up the story.

Game World

Areas

3 cities with a different graphic style for each (eg. New York, Venice, Miami). There wil be many mission in each city. The playing world will be very large - multiple screens.

*From **Grand Theft Auto***

Obstacles / Opponents

Security guards are only equipped with a baton. Player can use a tranquilizer gun to incapacitate guards. Incapacitated guards will wake up after 5 minutes.

Police are equipped with body armor and pistols and will shoot the player on sight. Once the police show up, the player must escape as quickly as possible.

*From **Grand Theft Auto***

Characters

No-Knees – Princess of the land, who has been locked away in the dungeon. She has knees. She simply wants to escape the dungeon.

Wally – Godlike entity that possesses the Earth that the dungeon is carved into. Unhappy with its evil owner. Wally can open magical portals in it's walls, ceiling, and floor.

Demon – Antagonist who carved his dungeon into Wally. He's an evil fire demon and probably is doing evil things to the outside world that's never mentioned.
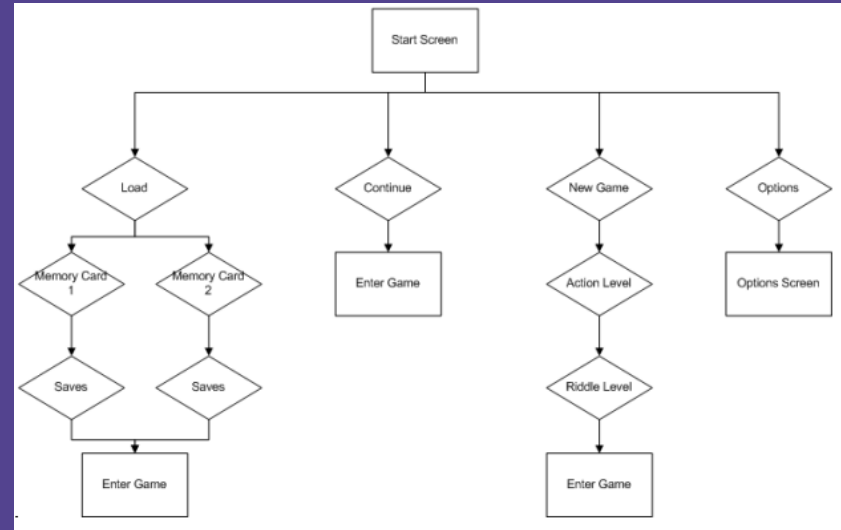
*From **Narbacular Drop***

Interface

Head-Up Display (HUD)

Controls

Menu

Open Game Tutorials Site

- Visit http://a9i.sg/chij

- Click on the Game Design Document Template Link

Game Design Document

- Template (ODT / PDF)

- Fill in the Game Design Document before starting on your game