
# Managing a Project

Summer 2020

DigiPen
INSTITUTE OF TECHNOLOGY
SINGAPORE

1.

# Expectations

## How to pass GAM150

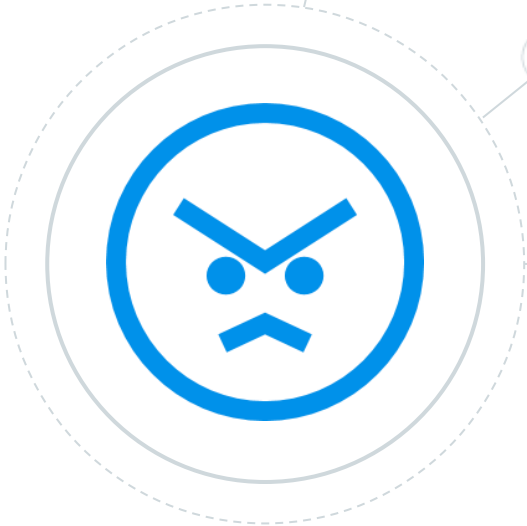
## Expectation to pass

- Practice Game programming concept
  - Learnt from CS230
- Playable game
- Understand project full lifecycle
  - Learn how to conduct a project
  - Learn Team Work

# Biggest GAM difficulty

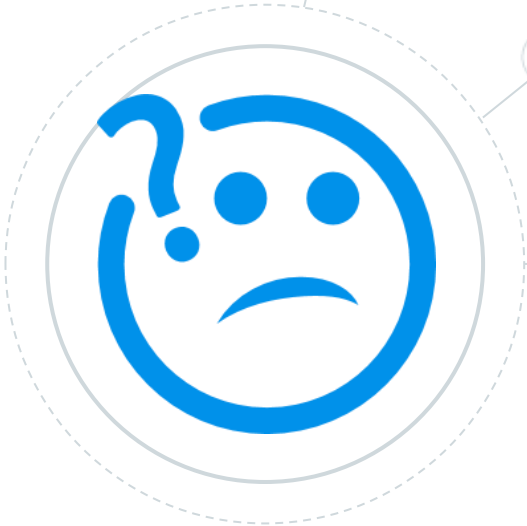
Number 1 issue
reported by students

# Lack of Time



(from feedback forms)

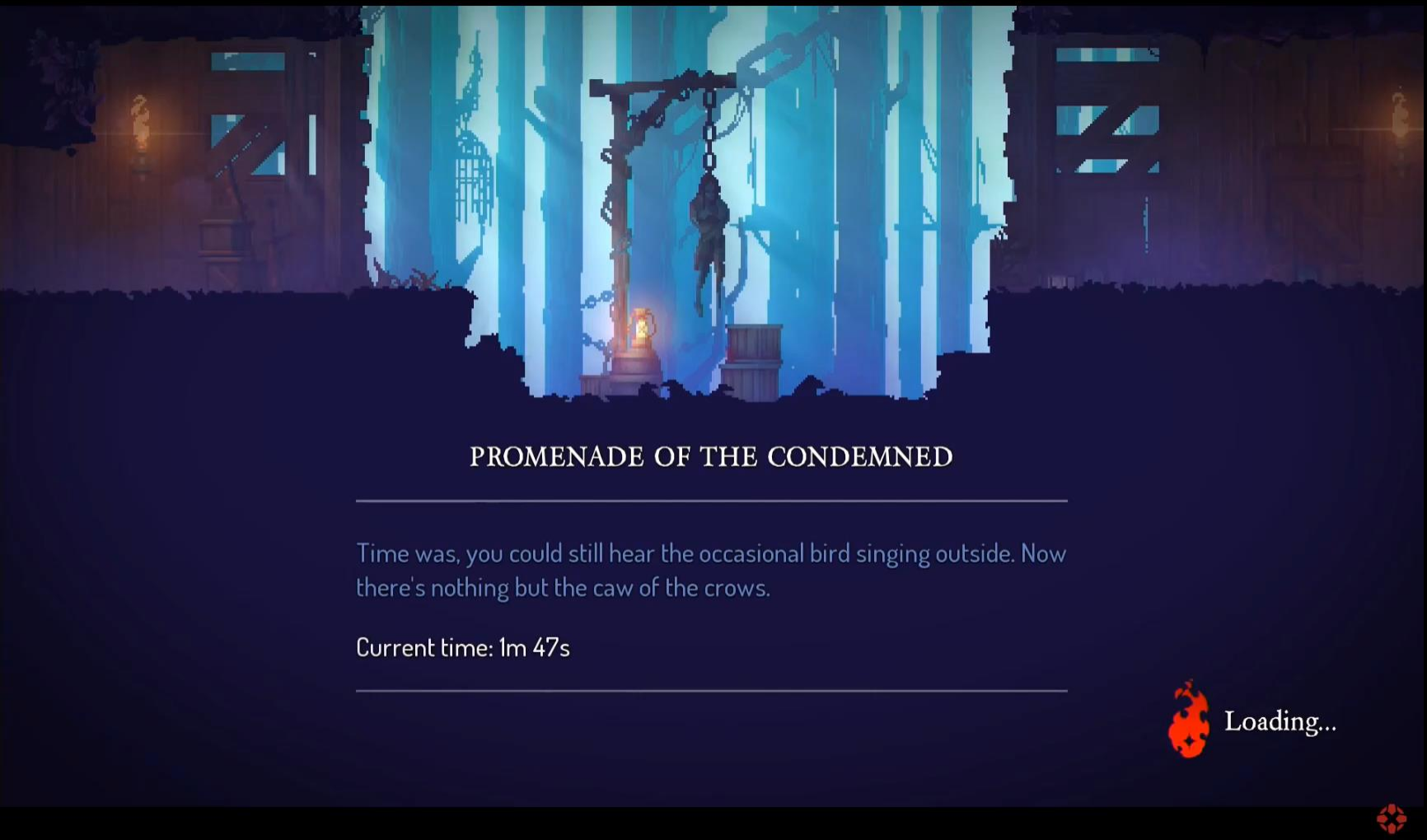
# ~~Lack of Time~~



But is it really ?

# Overscoping

Number 1 issue for ALL projects

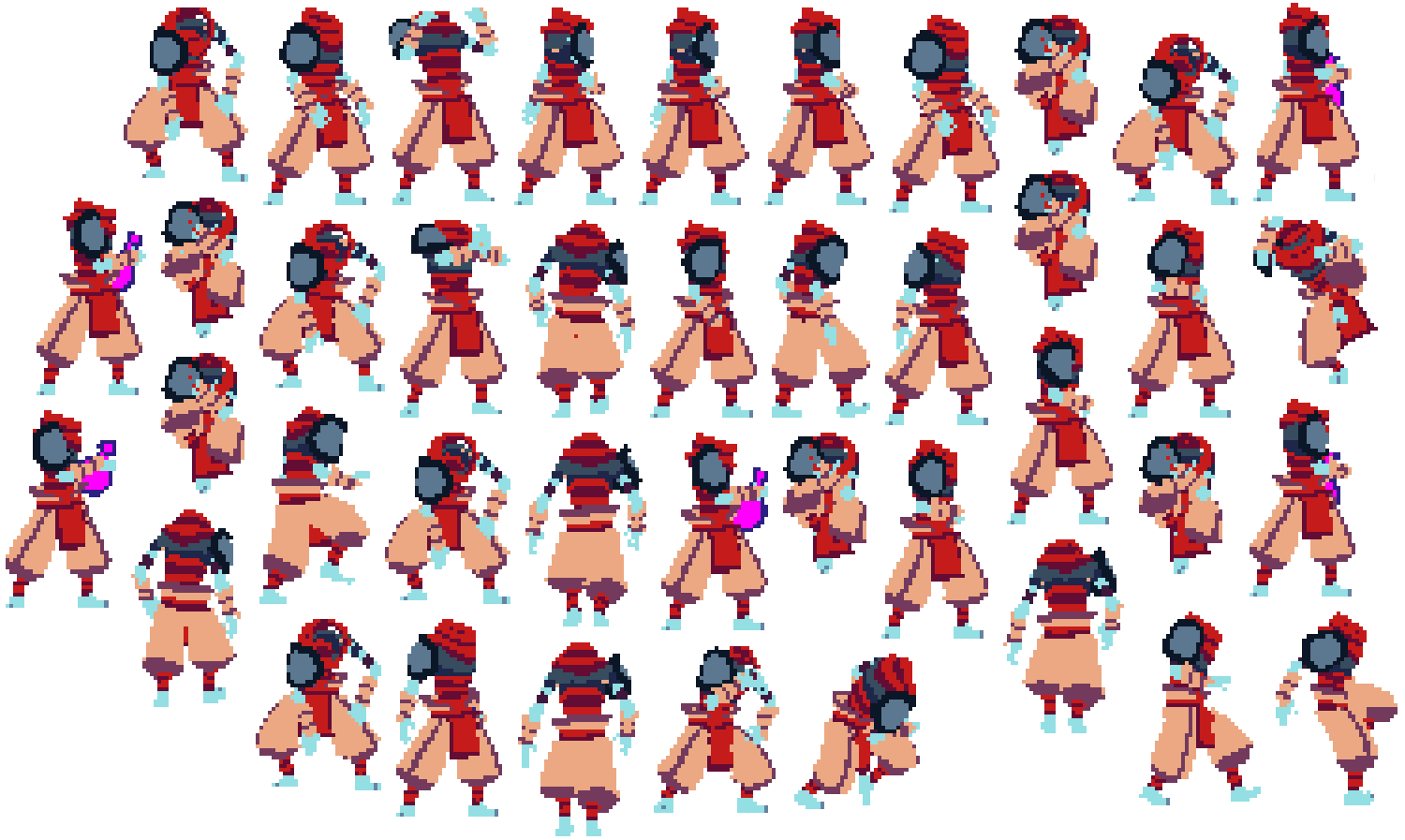

PROMENADE OF THE CONDEMNED
Time was, you could still hear the occasional bird singing outside. Now there's nothing but the caw of the crows.
Current time: 1m 47s
Loading...

*“You don’t know what you don’t know!”*

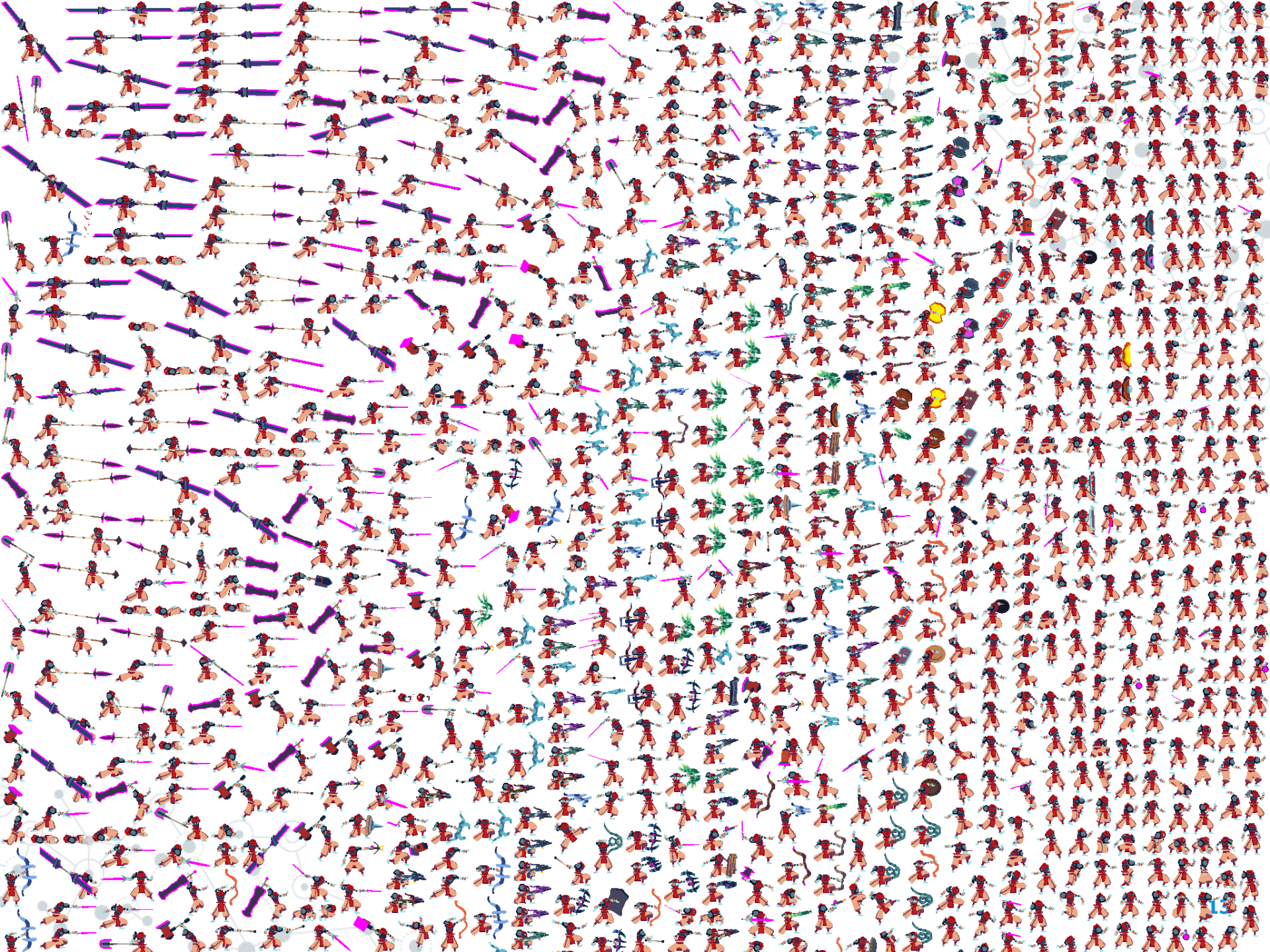
**— Yannick Gerber**
**( and so many others)**

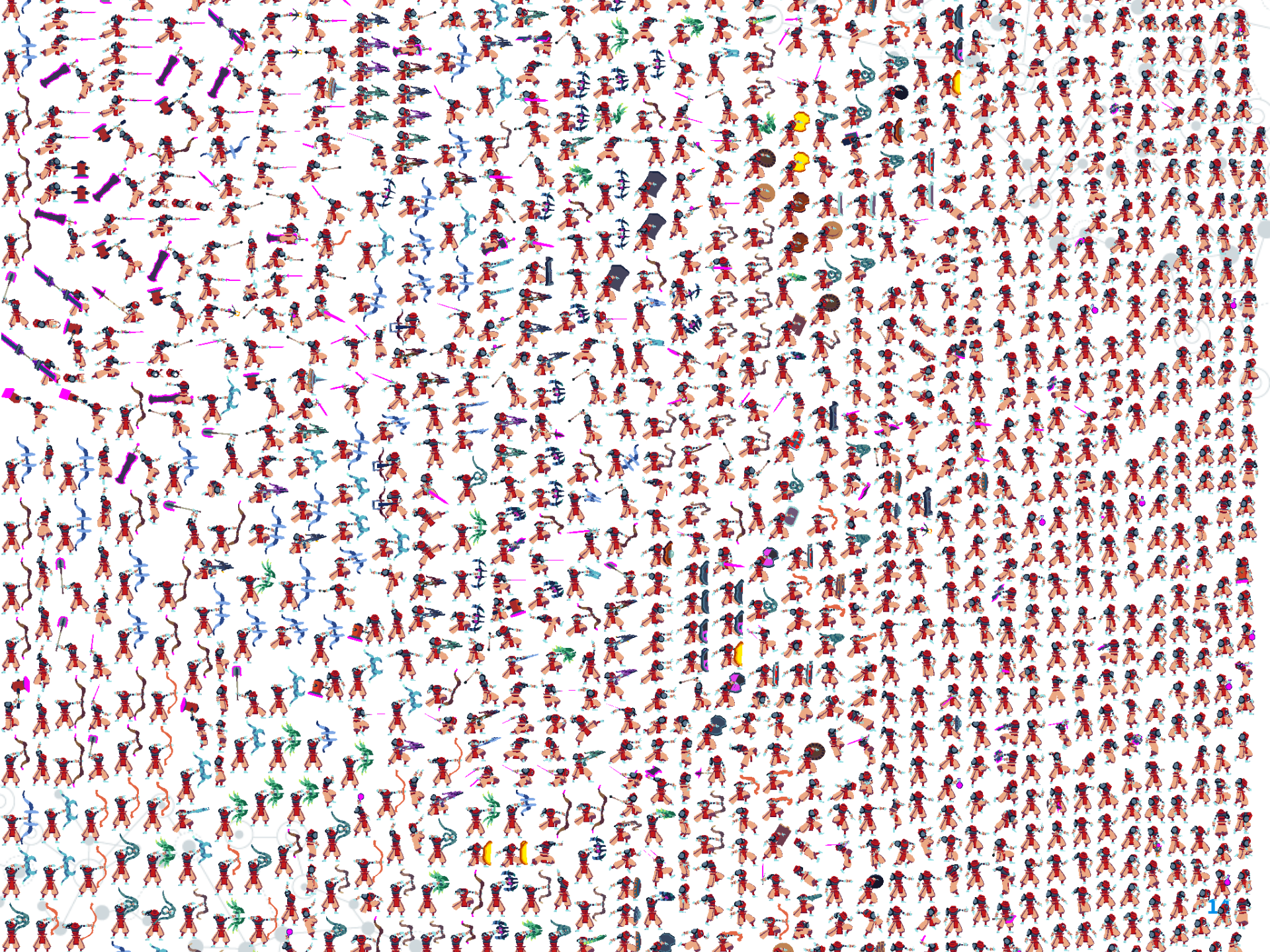
# Animations

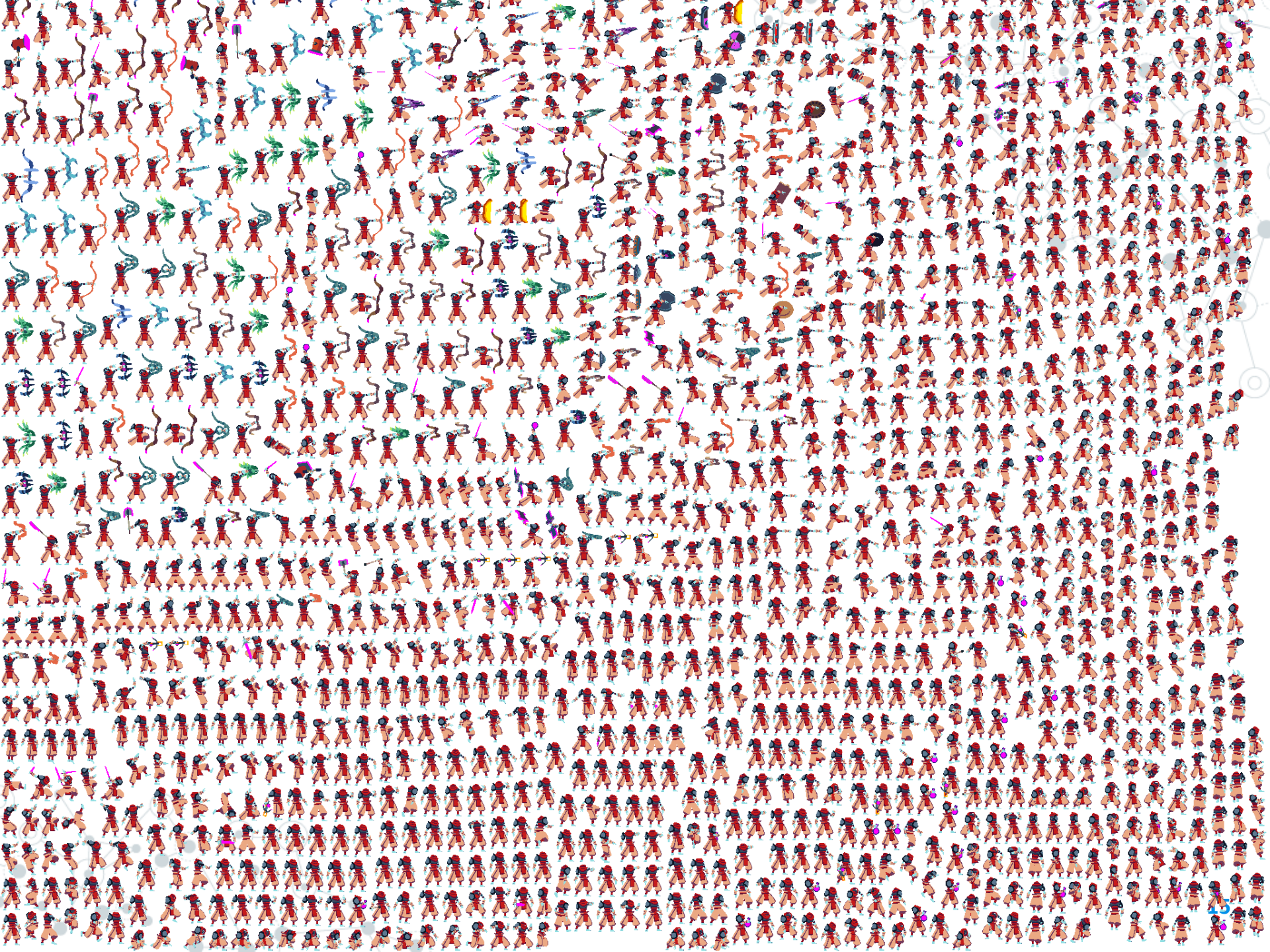
= production time



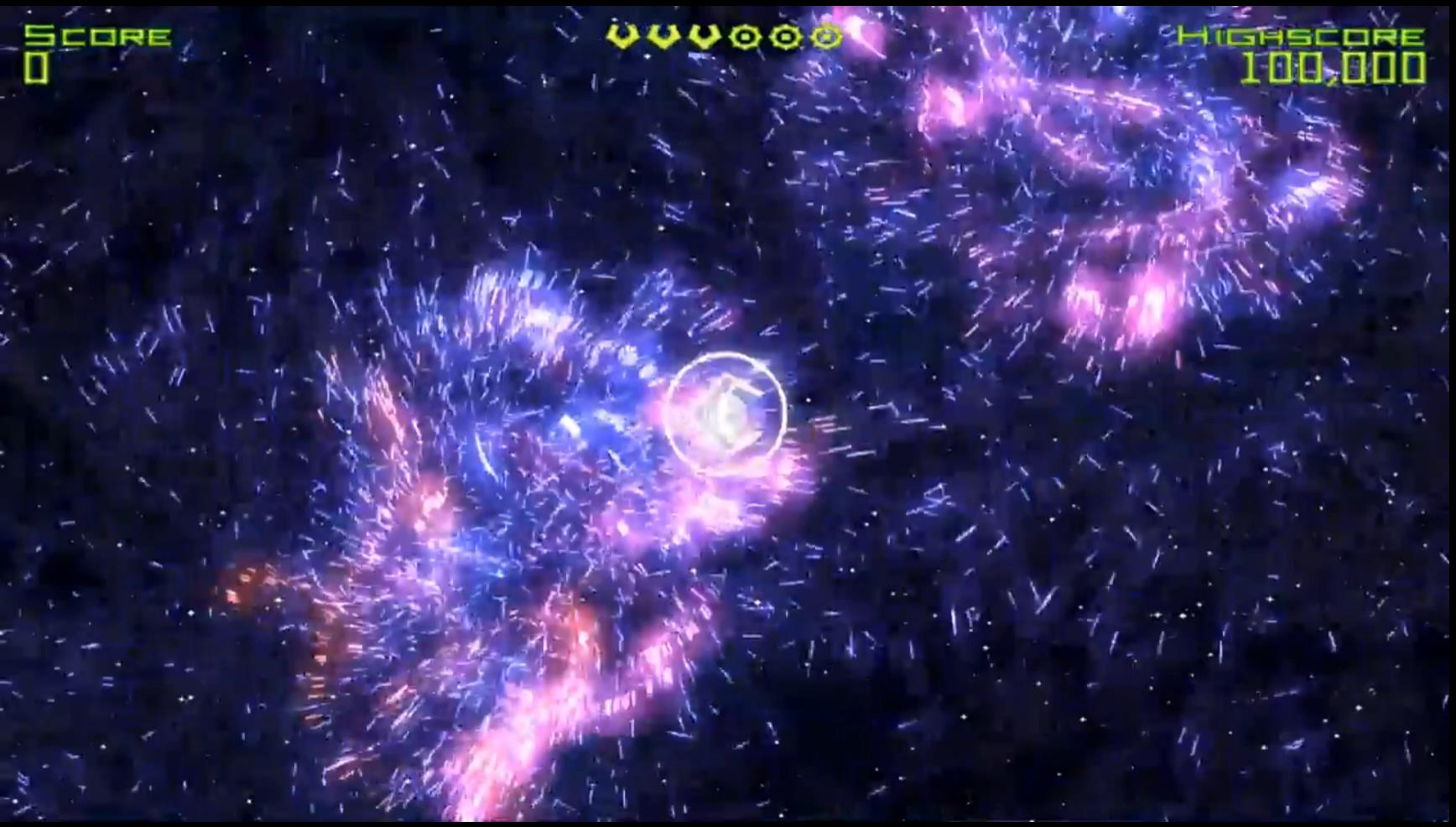
Sprite sheet (no head)







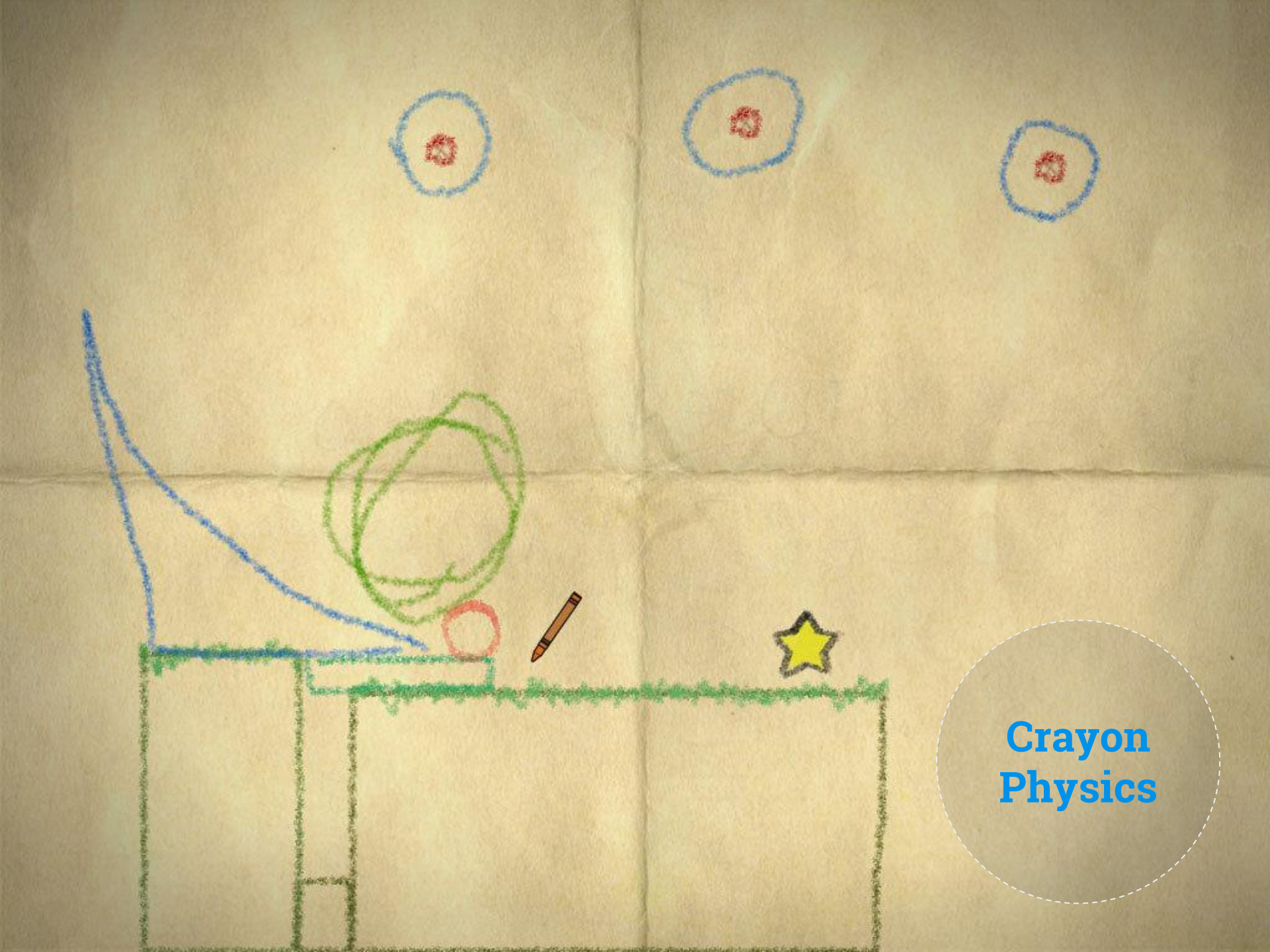
Be reasonable

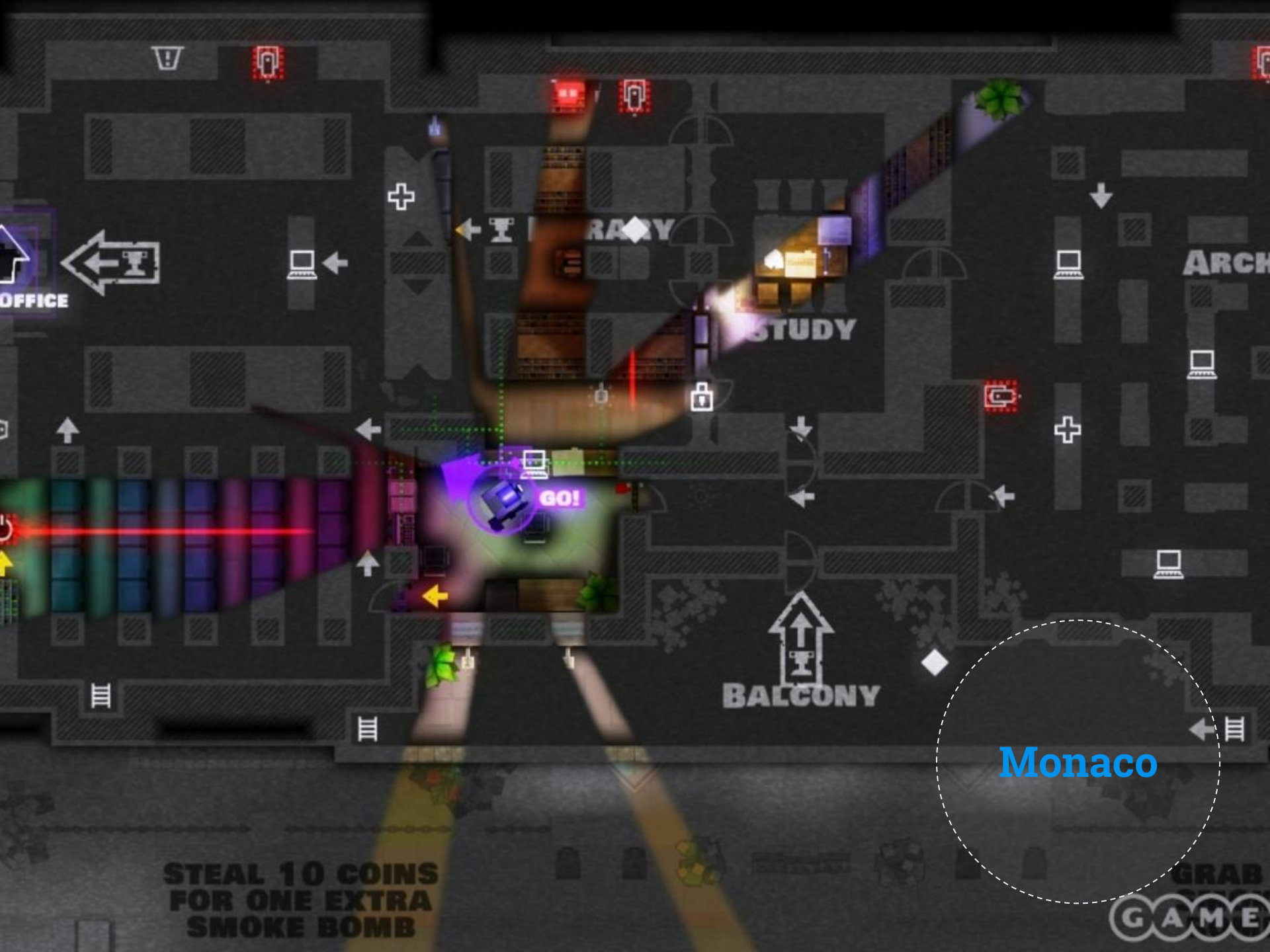

SCORE
0
HIGHSCORE
100,000

# Making a Stylish game != producing a lot of asset

- Baba is you
- Crayons physics
- Prison Architect
- World of goo
- Monaco


Baba is
you


Crayon
Physics


OFFICE
STUDY
GO!
BALCONY
Monaco
STEAL 10 COINS
FOR ONE EXTRA
SMOKE BOMB


!
World of goo
0 of 25


Prison
Architect

## Scope towards what you can do

- Scope Reasonably
  - You have 12 weeks, Team of 4
- Focus on your Team strength
  - Remember, we expect CODE not art
- Be more ambitious in GAM200 – 250
  - 28 weeks, 2 semesters, +BAGD and BFAs

2.

# Pitch

Week 03

# Pitch: Goals

- Explain the game
  - Gameplay
  - Amount/type of asset to produce
  - Tech Challenges
- Prove that you can make the game
  - Technically
  - Assets to produce

GDC Talk: 30 Thins I hate about your game pitch: https://www.youtube.com/watch?v=4LTtr45y7P0

## Pitch: 5 to 6 Min presentation

- Game Design
  - Sketches
  - Existing game References
- Art style
  - Mockups
  - Existing game References
- Technical Challenges
  - First step toward solutions
- Overall Production Plan
  - When will you deliver main features

GDC Talk: 30 Thins I hate about your game pitch: https://www.youtube.com/watch?v=4LTtr45y7P0

# 3.
# Production Plan

Production 101

*“By failing to prepare, you are preparing to fail”*

— **Benjamin Franklin**
(and Yannick Gerber sometimes)

## Create a Backlog

- List everything you know you need
  - Code tasks ( Renderer, animations, gameplay, physics,  system, UI … )
  - Sprites ( main character, props, background, UI …)
  - Animations ( every transitions, hits, movement, skills usage… )
  - Sounds ( sfx, music, ui sfx… )
  - …
- Be as Exhaustive as possible
  - Without going too micro
  - You will need to guess
  - Assign a “Block”  for unclear features

J36

## CHARACTERS

| | Art | | | Animation | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3D Model | Texture | Rigging | Idle | Walking | Running | Melee Slash | Spinning Attack | Ball Attack | Pickup prop | Powerup Pickup | Push | Throw Boomeran | Throw Prop | Stun |
| Link | yes | yes | yes | yes | yes | yes | yes | yes | no | yes | yes | yes | yes | yes | yes |
| Zelda | yes | yes | yes | yes | yes | no | no | no | no | no | no | no | no | no | no |
| Uncle | yes | yes | yes | yes | yes | no | no | no | no | no | no | no | no | no | no |
| Blue Soldier | yes | yes | yes | yes | yes | yes | yes | no | no | no | no | no | no | no | yes |
| Green Soldier | no | yes | yes | yes | yes | yes | yes | no | no | no | no | no | no | no | yes |
| Gray Soldier | no | yes | yes | yes | yes | yes | yes | no | no | no | no | no | no | no | yes |
| Ball & Chain Troope | yes | yes | yes | yes | yes | no | no | no | yes | no | no | no | no | no | yes |

## WORLD

Props

| Characters | House | Outdoor | Underground | Castle | Pickups | Breakable | Interactible |
|---|---|---|---|---|---|---|---|
| shortsword | Wood floor | Grass Floor | Stone Floor | Castle floor | Rupies | Pots | Chest |
| Longsword | Wood Wall | Trees | Stone Wall | Castle Wall | Key | Bush | Big Chest |
| Shield | Bed | Bushes | Water | Big torch | Mana pots | Stone | Torch |
| Big Shield | Table + chairs | Water | Torch | Statues | | Big Stone | Doors (keys) |
| Ball & chain | | Bridge | Cells | Stairs | | | Door(Mechanic) |
| Boomerang | | Road | | | | | Pressure Plate |
| Lamp | | | | | | | |

Level Design

| | | | | |
|---|---|---|---|---|
| | LD : 1 room | LD : 1 open world | LD : 10 Rooms | LD : 4 rooms |

## OTHERS

| Music | Menu Screen | HUD |
|---|---|---|
| House Music | Press Start | Main |
| Outdoor Music | Save Select | Inventory |
| Underground Music | Virtual keyboard | Map |
| Castle Music | | Death |

Start Page | 0 - Initial Notes | 1 - Content - Art | 1 - Content - Code | 20 - Backlog | 21 - Estimation | 22 - Priority | 2 - Backlog - Full | 3 - Project Stats

G25

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | | CODE | | | |
| 3 | | EPIC | Task | Notes | |
| 4 | | Character | Movement | | |
| 5 | | | Jump down | Jumping down from a platform | |
| 6 | | Combat | Sword Attack | | |
| 7 | | | Sword Charge | Charge + 360 attack | |
| 8 | | | Shield block | Blocking an attack / projectile with shield | |
| 9 | | | Health System + Damage + Death | Damage system, death sequence, respawn | |
| 10 | | Abilities | Mana | Use manage with Abilities / items, pickup potions to fill it up | |
| 11 | | | Lamp Usage | Lamp can light torch | |
| 12 | | | Props destruction | Bush | |
| 13 | | | Pickup and throw props | Pots, Stones, Hits and push back enemies when hit | |
| 14 | | | Interaction with Prop | Chest | |
| 15 | | | Push props | Statues | |
| 16 | | | Boomerang | brings pickups back, stuns enemies | |
| 17 | | | Consumables pickups | Mana, Rupies, Health, Keys, Super Key, Map | |
| 18 | | Camera | Fixed in a room | Default camera system | |
| 19 | | | Linear Interpolation | Moving between 2 waypoint | |
| 20 | | | Follow cam | | |
| 21 | | Enemy AI | AI Pathfinding | Grid based PathFinding System | |
| 22 | | | Soldier basic FSM | State machine for a Soldier, decision system | |
| 23 | | | Soldier Detection | Detection zone | |
| 24 | | | Soldier Attack | | |
| 25 | | | Soldier PushBack | With the handling of falling down a hole | |
| 26 | | | Soldier Stun | For the boomerang | |
| 27 | | | Soldier Block | Blocking an attack / projectile with shield | |
| 28 | | | Health System + Damage + Death | | |
| 29 | | | Ball & Chain Trooper Movement | | |
| 30 | | | Ball & Chain Trooper Ball Attack + Fight Pattern | | |
| 31 | | UI | HUD ( Mana, Active Ability, Health ) | | |
| 32 | | | Menu : Press Start | | |
| 33 | | | Menu : Save Selection | | |
| 34 | | | Menu : Virtual Keyboard | | |
| 35 | | | Menu : Dialog System | | |

# It's everyone's responsability

Creating a production plan is a team work

## Estimate Everything

- Regroup in Epics
  - Macro task to regroup multiple linked tasks
- For each tasks : estimate the time
  - Guess work, refined as you learn more
  - You will be wrong

# BACKLOG

| Completion | Priority | EPIC | Task | Owner | Type | imati | ed M |
|---|---|---|---|---|---|---|---|
| Not Started | 2 - Could Have | Abilities | Mana | Daniel | Code | 4 | 4 |
| Not Started | 2 - Could Have | Abilities | Lamp Usage | Daniel | Code | 4 | 4 |
| Not Started | 1 - Should Have | Abilities | Props destruction | Daniel | Code | 8 | 2 |
| Not Started | 1 - Should Have | Abilities | Pickup and throw props | Daniel | Code | 16 | 3 |
| Not Started | 1 - Should Have | Abilities | Boomerang | Daniel | Code | 4 | 1 |
| Not Started | 0 - Must Have | Abilities | Interaction with Prop | Daniel | Code | 4 | 1 |
| Not Started | 2 - Could Have | Abilities | Push props | Evan | Code | 4 | |
| Not Started | 1 - Should Have | Abilities | Consumables pickups | Evan | Code | 4 | |
| Done | 0 - Must Have | Camera | Fixed in a room | Jay | Code | 4 | 1 |
| Not Started | 1 - Should Have | Camera | Linear Interpolation | Jay | Code | 4 | 2 |
| Not Started | 1 - Should Have | Camera | Follow cam | Jay | Code | 8 | 2 |
| Not Started | 2 - Could Have | Character | Animation : Push | Mun | Animation | 8 | |
| Not Started | 1 - Should Have | Character | Animation : Pickup Prop | Mun | Animation | 8 | |
| Not Started | 1 - Should Have | Character | Animation : Throw Prop | Mun | Animation | 8 | |
| Not Started | 1 - Should Have | Character | Animation : Hold Prop | Mun | Animation | 8 | |
| Not Started | 0 - Must Have | Character | Animation : Idle | Mun | Animation | 8 | 1 |
| Not Started | 0 - Must Have | Character | Animation : Walking | Mun | Animation | 8 | 3 |
| Not Started | 0 - Must Have | Character | Animation : Running | Mun | Animation | 16 | 2 |
| Not Started | 0 - Must Have | Character | Animation : Pickup PowerUp | Mun | Animation | 16 | |
| Not Started | 0 - Must Have | Character | Animation : Hero Death | Mun | Animation | 16 | 3 |
| Not Started | 0 - Must Have | Character | Animation : Enemy Death | Mun | Animation | 16 | 4 |
| Done | 0 - Must Have | Character | Movement | Yannick | Code | 8 | 1 |
| In Progress | 0 - Must Have | Character | 3D Model : Link | Yi-Xian | 3D Art | 16 | 1 |
| Not Started | 2 - Could Have | Character | Animation : Spinning Attack | Yi-Xian | Animation | 8 | |
| Not Started | 2 - Could Have | Character | Animation : Ball Attack | Yi-Xian | Animation | 8 | |
| Not Started | 2 - Could Have | Character | Animation : Throw Object ( boomerang ) | Yi-Xian | Animation | 8 | |
| Not Started | 2 - Could Have | Character | Animation : Stun | Yi-Xian | Animation | 8 | |
| Not Started | 1 - Should Have | Character | 3D Model : Ball & Chain trooper | Yi-Xian | 3D Art | 16 | |
| Not Started | 1 - Should Have | Character | Texture Map : Ball & Chain trooper | Yi-Xian | 3D Art | 4 | |
| Not Started | 0 - Must Have | Character | 3D Model : Zelda | Yi-Xian | 3D Art | 8 | |
| Not Started | 0 - Must Have | Character | 3D Model : Uncle | Yi-Xian | 3D Art | 8 | |
| Not Started | 0 - Must Have | Character | 3D Model : Soldier | Yi-Xian | 3D Art | 16 | 2 |

## Simple Mathematics

- Add some Setting :
  - Amount of work time / week per teammate
  - Size of the team

- Now, you can Calculate:
  - Is your project feasible ?
  - Who is overworked ?
  - Are we on schedule ?

## Total Workload

| Sum of Estimation (h) | Column L | | | |
|---|---|---|---|---|
| Members | Done | In Progress | Not Started | Grand Total |
| Daniel | | | 40 | 40 |
| Elson | | 4 | 112 | 116 |
| Evan | | 8 | 108 | 116 |
| Jay | 4 | 4 | 32 | 40 |
| Mun | | 4 | 216 | 220 |
| Pascal | 8 | 16 | 84 | 108 |
| Yannick | 8 | 4 | 264 | 276 |
| Yi-Xian | | 16 | 124 | 140 |
| **Grand Total** | **20** | **56** | **980** | **1056** |

## Total Workload by Milestone

| Sum of Estimation (h) | Column Labels | | | | | |
|---|---|---|---|---|---|---|
| Row Labels | 1 | 2 | 3 | 4 | - | Grand Total |
| Daniel | 8 | 8 | 16 | 8 | 0 | 40 |
| Elson | 8 | 16 | 16 | 16 | 60 | 116 |
| Evan | 16 | 16 | 32 | 0 | 52 | 116 |
| Jay | 16 | 16 | 8 | 0 | 0 | 40 |
| Mun | 16 | 16 | 24 | 16 | 148 | 220 |
| Pascal | 8 | 16 | 16 | 16 | 52 | 108 |
| Yannick | 16 | 16 | 16 | 16 | 212 | 276 |
| Yi-Xian | 16 | 16 | 16 | 12 | 80 | 140 |
| **Grand Total** | **104** | **120** | **144** | **84** | **604** | **1056** |

## Available Time

| | | |
|---|---|---|
| Length of project | 14 | *Weeks* |
| Average Availability : | 16 | *Hours / Week* |
| Size of Team | 7 | *Members* |
| | **1568** | *Total Available Hours* |

## Project stats

| | |
|---|---|
| Total VS Available Time : | 67.3% |
| Total Completion Rate: | 1.9% |

## Notes

- Update your plan as you learn more
  - Refine your estimations using finished tasks as reference
- “Block out” if you don’t know details
  - Pathfinding => 5 days ?
- Cut early
  - Don’t invest time in features you might cut
  - Use ROI to gauge features to cut (Return on investment)

## Notes

- Start with a MVP: Minimal Viable product
  - “Can I Ship this as is ?”
  - Add additional cool features one by one.
- Control Feature Creeping & Reboots
  - Just using time left vs time needed calculation
- Define tools that can help save time
  - Use ROI : time take to develop a tool vs time saved to produce assets

# 4.
# Closing notes

Team / Teamwork

## Teams

- Make sure you all understand the game
  - No time lost developing useless features/assets
- Make sure you all agree and are happy with the game
  - Enthusiasm helps teamwork
- No ? Change team !
  - Freely until before week 03 on Wednesday

## Team work is vital

- Teamwork & collaboration is vital
  - Coordinate: Schedule weekly / daily meetings
  - Communicate blockers, get help
- Good Team spirit makes it more fun
  - Go to movies, lunch
  - Play games together…

# Thanks!

## Any questions?