

PDLC

product development life cycle

PDLC

- Stands for: **Product Development Life Cycle**
- It is the stages that large computer companies use to make a big computer program.
- For example, a game like Counter Strike will have hundreds of programmers working for about 2 years on the code.
- How do so many people work together effectively? **Structure and pre-planning.**

Phases of PDLC

- There are 4 phases of the PDLC
- **A. Analysis:** the overall idea of the game is developed.
- **B. Design:** the detailed plan for the game is created.
- **C. Coding:** the program is coded and tested.
- **D. Reflection:** the program is sold and the sales performance is evaluated.



1. analysis



The PDLC
starts with a
problem.

For many, this is
as simple as:
“What is a new
way we can
make heaps of
money?”





2012



Hold Focus Groups

Interview People



Game High Concept

unique

- USP noch undef.
- Plustererkennung
- Konvention → Neuer
- Einfach zugänglich
- "Süchtig machend"

- Wie Wiedererkennung /
Beschreibbarkeit

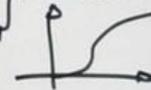
- Art Design ^{problem} muss
- Belasting übersteigend
- Material hochwertig
- Touch-Behandlung
- Langzeitmotivation?
 - ⇒ Games
 - ⇒ Social Media
 - ⇒ Vergleich
- Aufgabenschwierigkeit
(aufwändig zu einfach?)

good

- Alle Altersklassen
- "Süchtig"
- Konzept aussaunbar

- hoher Komplexitätsgrad
- Schwierigkeitsgradskurve ungewöhnlich

bad



A high concept document is primarily a sales tool. Think of it as a résumé for a video game.

The point of a résumé is to quickly convey a job applicant's qualifications and try to get him an interview with the hiring manager.

The point of a high concept document is to try to get a meeting with a producer, the chance to “pitch” the game.

Ink High Concept Document

The pen is truly mightier than the sword.

Venue

Ink is a full length turn-based Japanese style RPG designed for current generation game consoles such as the Playstation 3 and Xbox 360.

Features

- A large dynamic world to explore.
- A deep twisting plot which intertwines two stories into one.
- Hours of quality voice acting.
- Write to change the world, solve puzzles, power-up characters, and turn battles in your favor.
- Strategically manage ink.
- Learn and unleash powerful combination attacks.
- In-game text written in third-person novel style.
- Read the in-game novel to review events and uncover secret information.

FORTNITE



High Concept: Fortnite is a mass online brawl where 100 players leap out of a flying bus on to a small island and then fight each other until only one is left.

DUMB WAYS to DIE



DUMB WAYS to DIE

START



PLAY GAME



Defend the private parts

FLICK THE PIRANHAS AWAY



Clean up
SCRUB THE SCREEN
TO WIPE THE PUKE



Swat
TAP TO HIT
THE WASPS



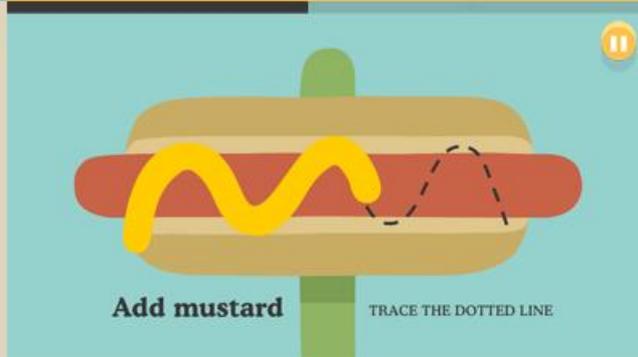
Run!

TAP AS FAST
AS YOU CAN



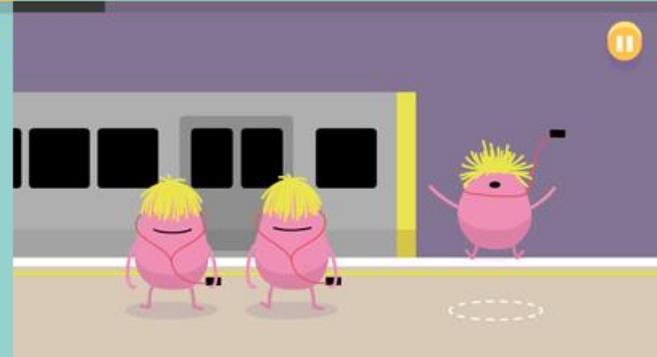
485

LEVEL COMPLETE 100
BECAUSE YOU'RE SPECIAL 4



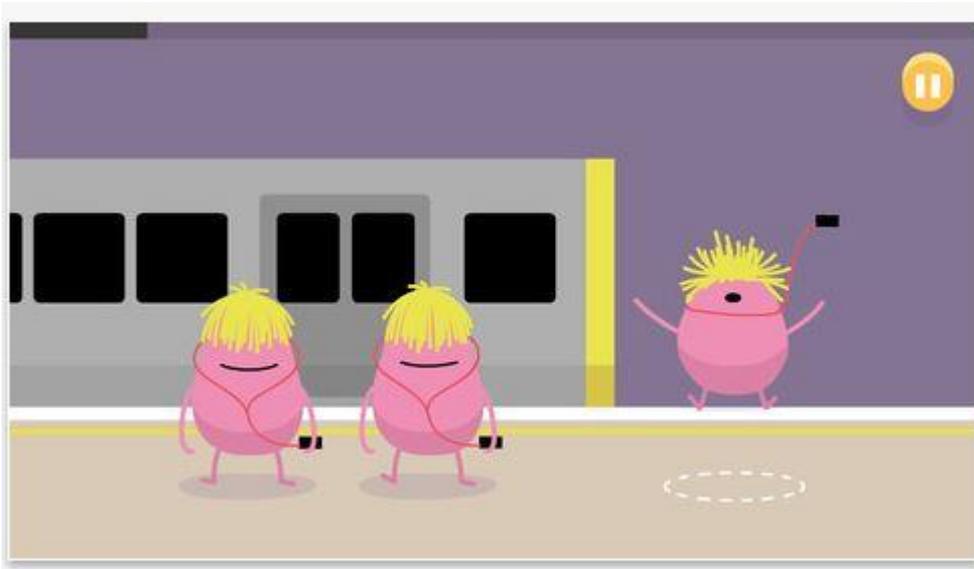
Add mustard

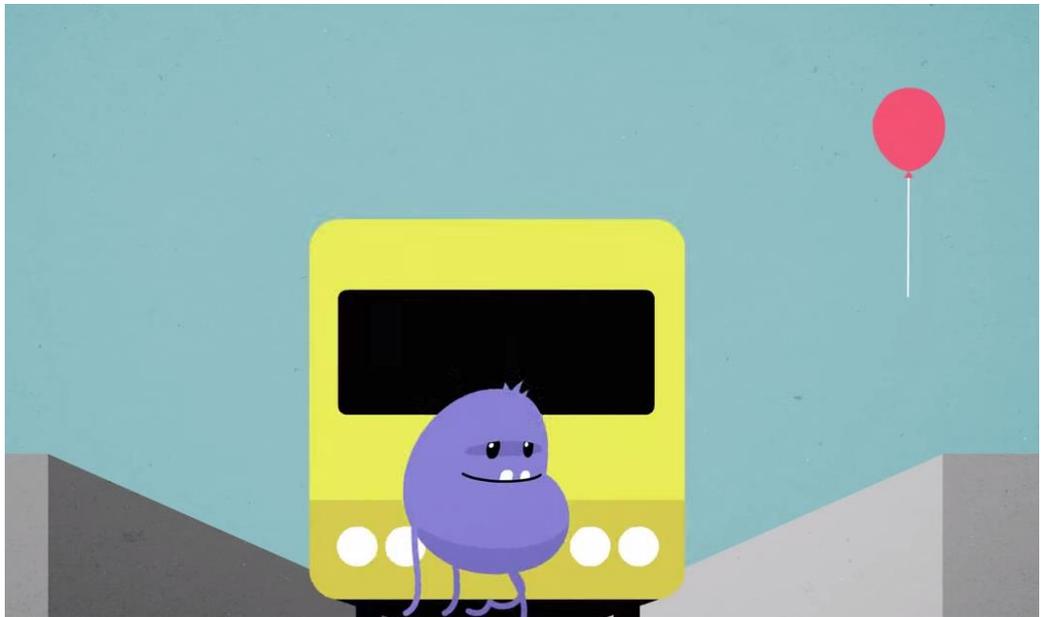
TRACE THE DOTTED LINE



Run!

TAP AS FAST
AS YOU CAN



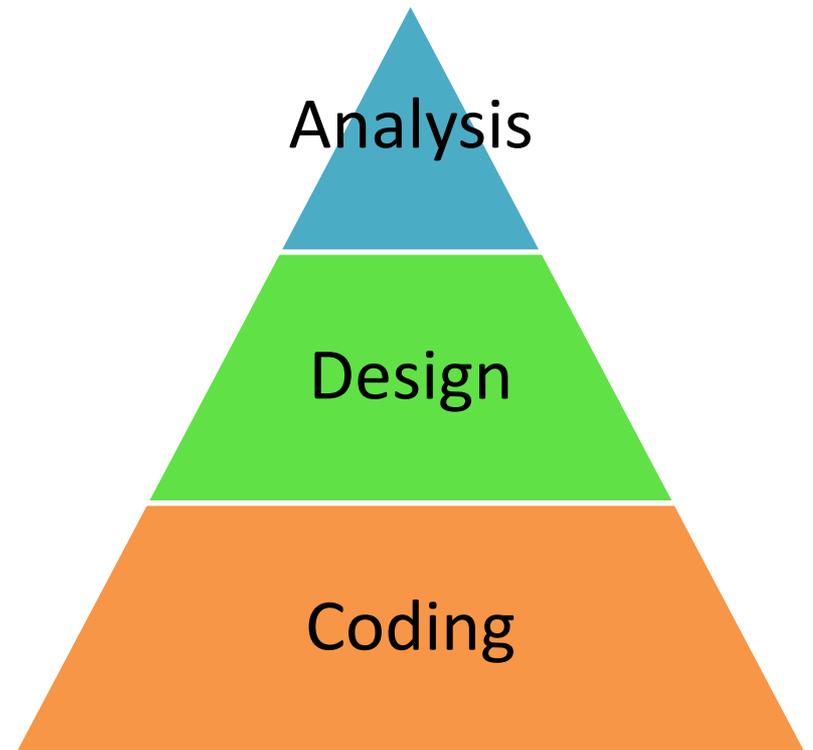


Dumb Ways to Die

- *An example of an innovative **Analysis Phase***
- In Melbourne, there were many near-miss accidents with trains. Public service announcements had no effect.
- In their analysis phase, Metro Trains decided to create a silly app with train accidents hidden inside it.
- Results? Huge success.
 - 30% reduction in near-miss accidents.
 - \$50 million in advertising for a few thousand dollars.

Analysis Jobs

- Analyst



Analysis Phase Summary

1

- *End result:* Overall idea for the game is decided
- Includes:
 1. Define the problem
 2. Brainstorming
 3. Interviews
 4. High concept statements
 5. Pitch the concept
 6. User focus groups
 7. Develop a specifications list
- *Jobs?* Analyst, CEO

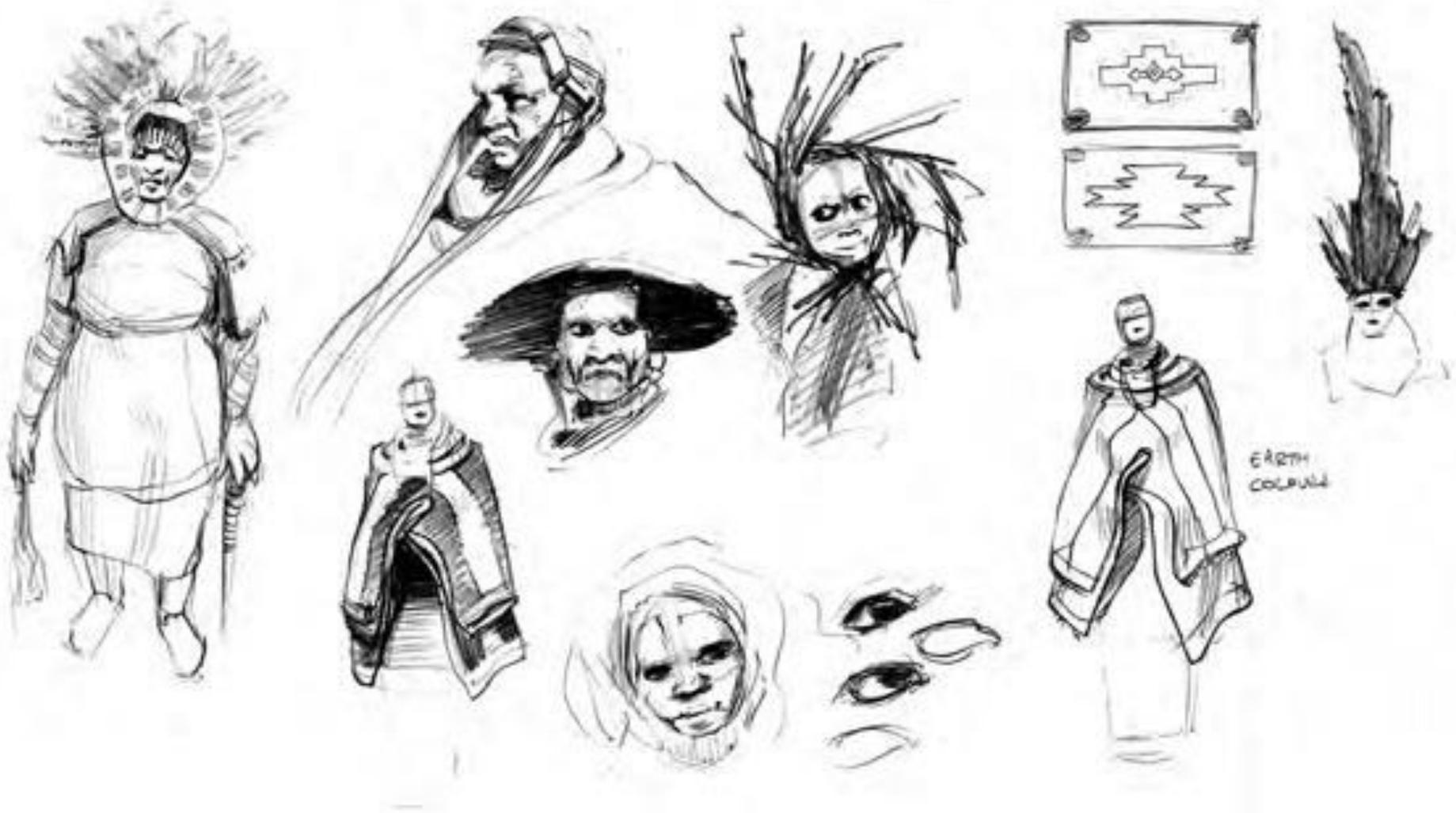


2 . design

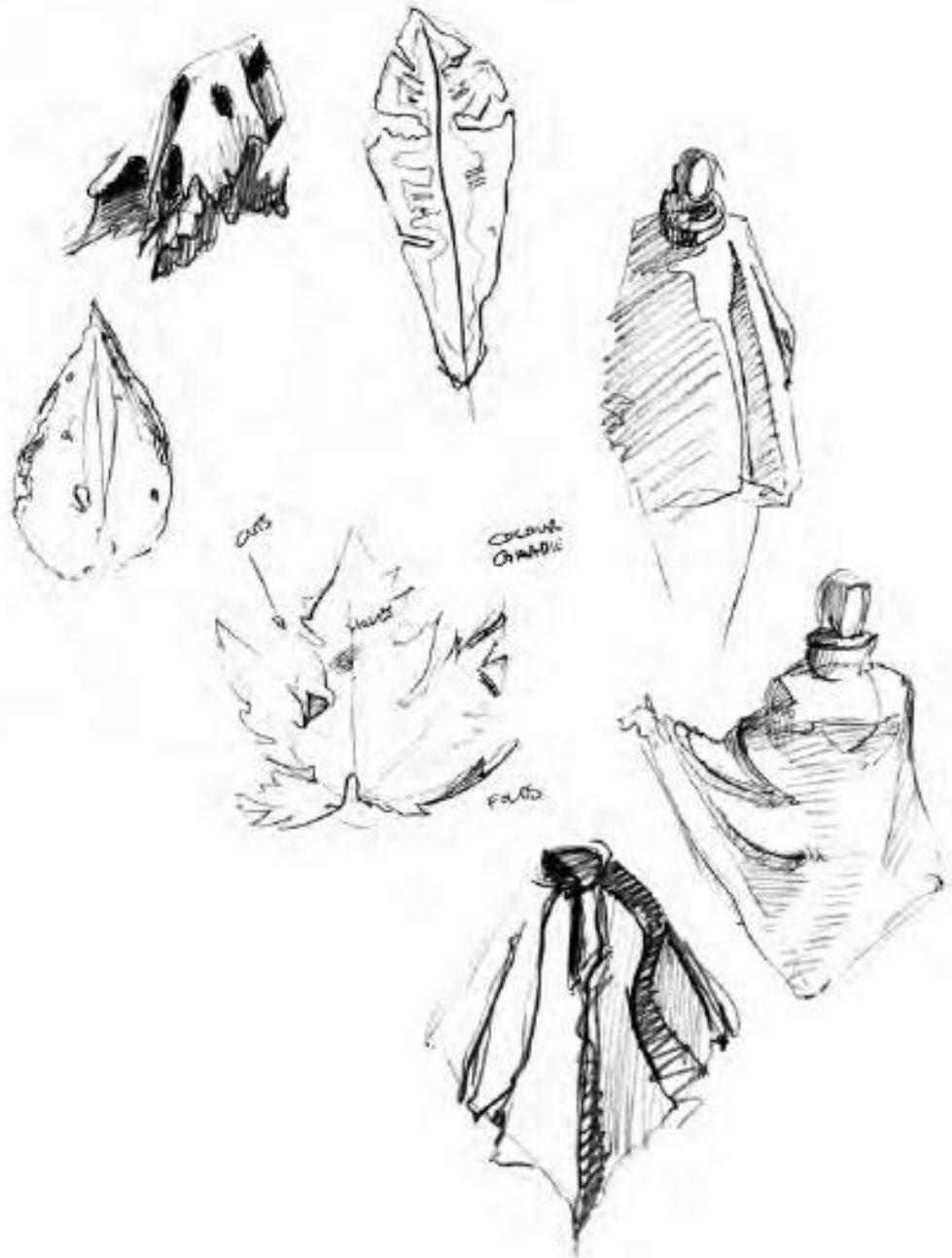
Spring



a. Character design



When it comes to your characters' clothing, think about the resources and textiles available in their environment. In this example, the nature references in the character concept led to research of African tribal groups, although you might choose different ethnic or geographic avenues of research.



Visual metaphors for the keyword delicate were found in "dry, dying leaves," some of which resembled a poncho, which was then likewise researched.

Steadily begin combining the personified abstract shape with elements of your research, starting with very simple lines and shapes.

Here you can see how the base shape of a simple leaf is combined with various research sketches including Ndebele tribal clothing, dead leaves, faces from ancient Chinese sculpture, and a poncho.





L2

OUTFITS

EDIT STYLE

R2



EPIC | OUTFIT

All Skins!

Epic skull trooper outfit.



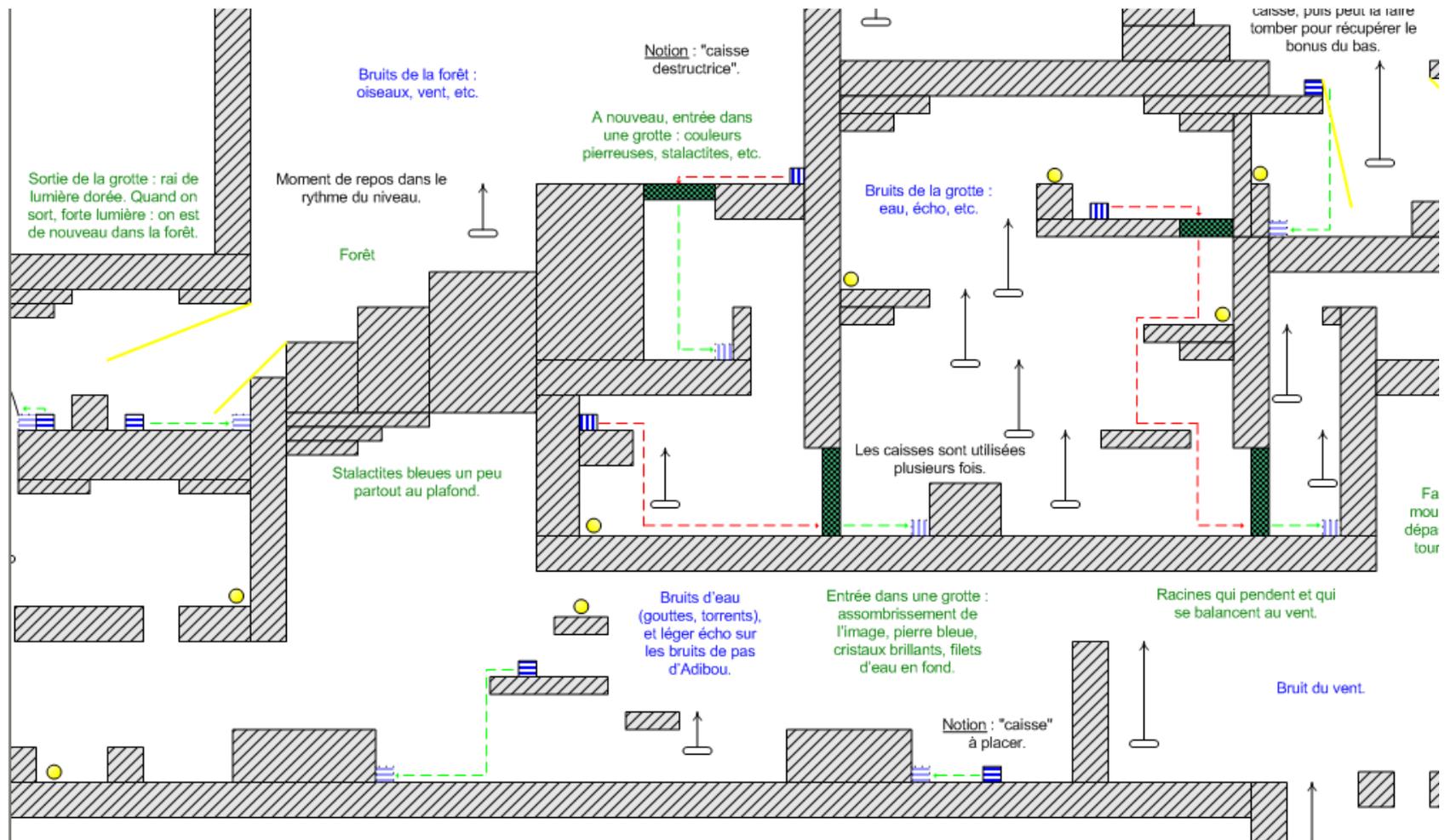
SAVE AND EXIT





Game Designers have a lot of choice in them.

b. Level design

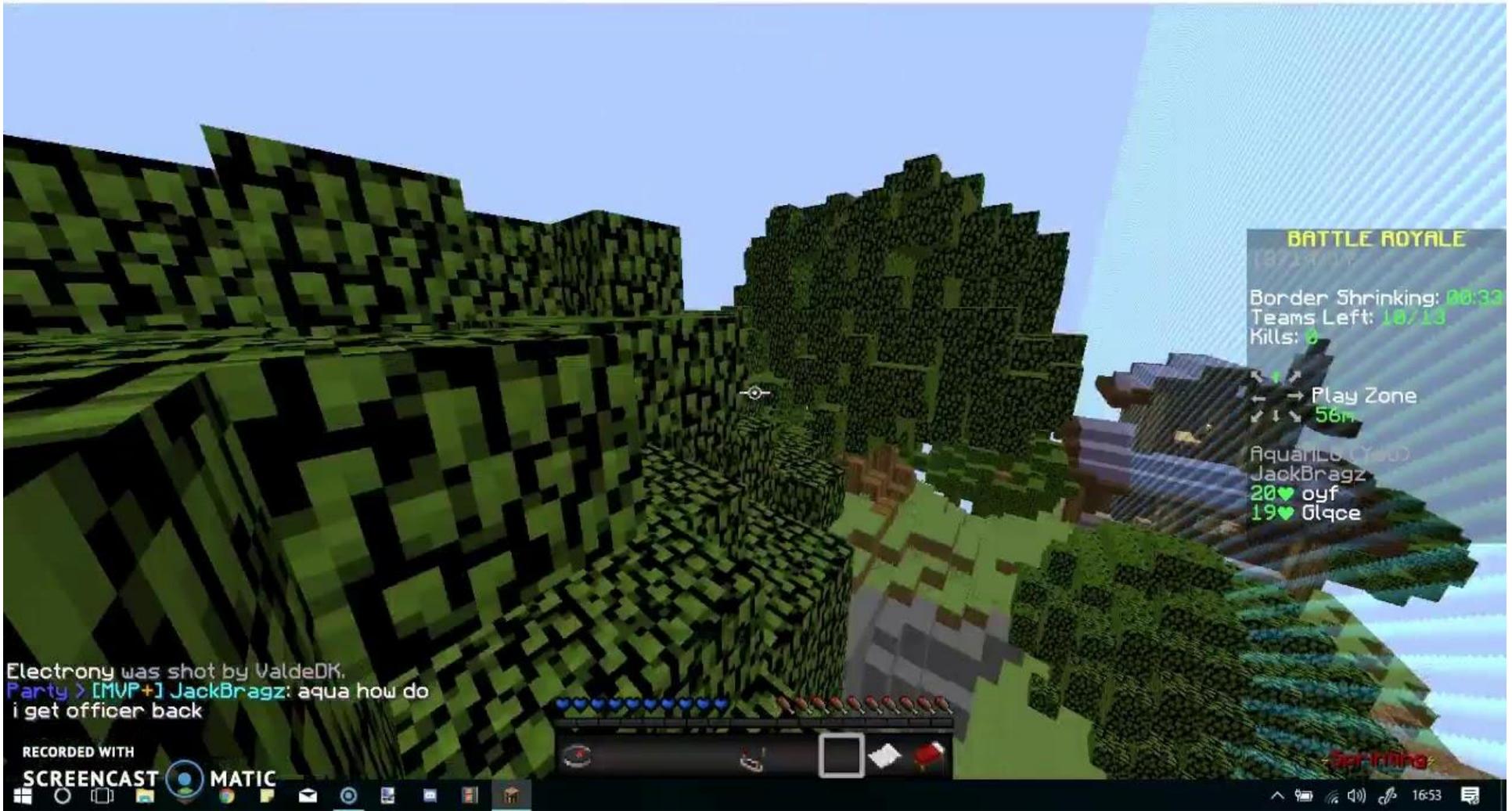








C. prototype



BATTLE ROYALE
 18/21/00:00
 Border Shrinking: 00:33
 Teams Left: 10/13
 Kills: 0

Play Zone
 56m

AquarIL6 (You)
 JackBragz
 20♥ oyf
 19♥ Olqce

Electrony was shot by ValdeDK.
 Party > [MVP+] JackBragz: aqua how do
 i get officer back

RECORDED WITH
SCREENCAST MATIC

d. storyline





Character and Story I...



The Balancing Act



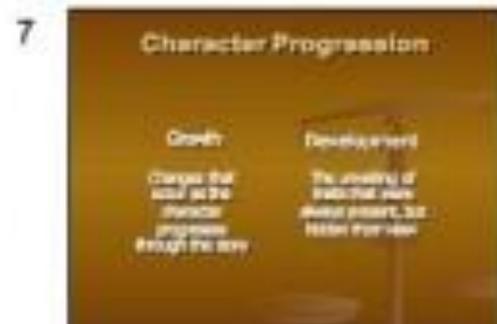
Respect Drama



*Author of Hamlet



Respect Your Charact...



Character Progression



Slide 9



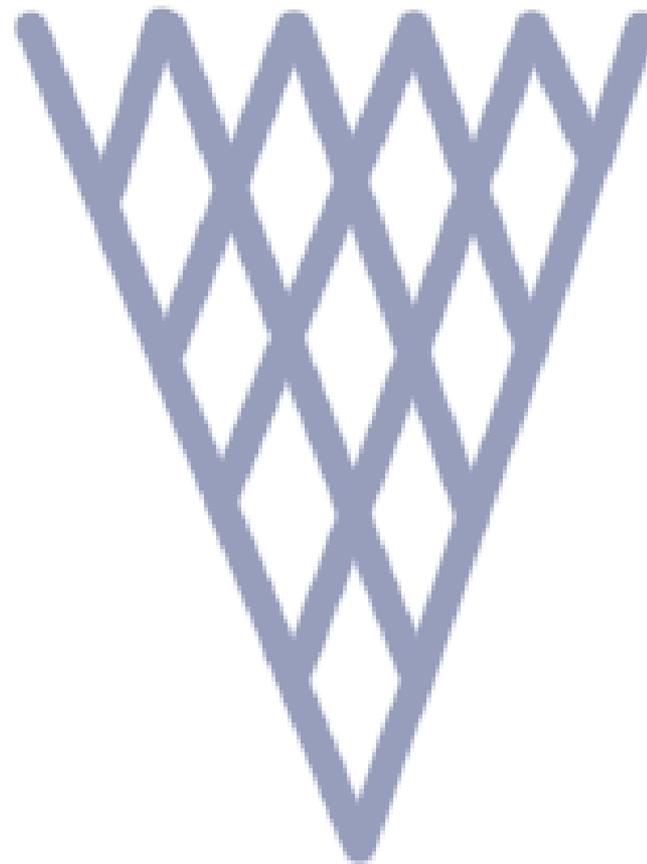
Stereotypes



Respect Your Stories



Linear Story



Interactive Story



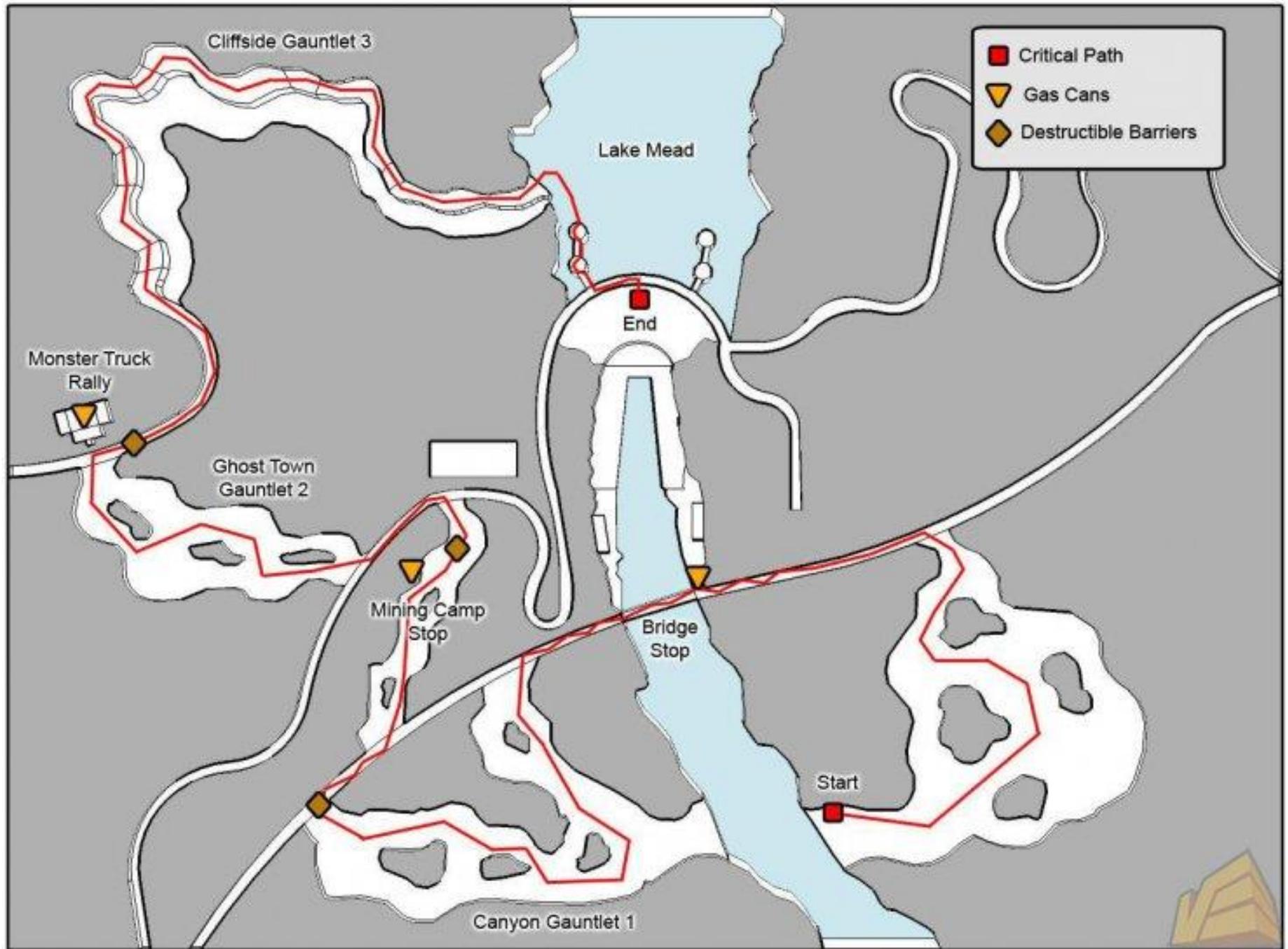
The Overseer

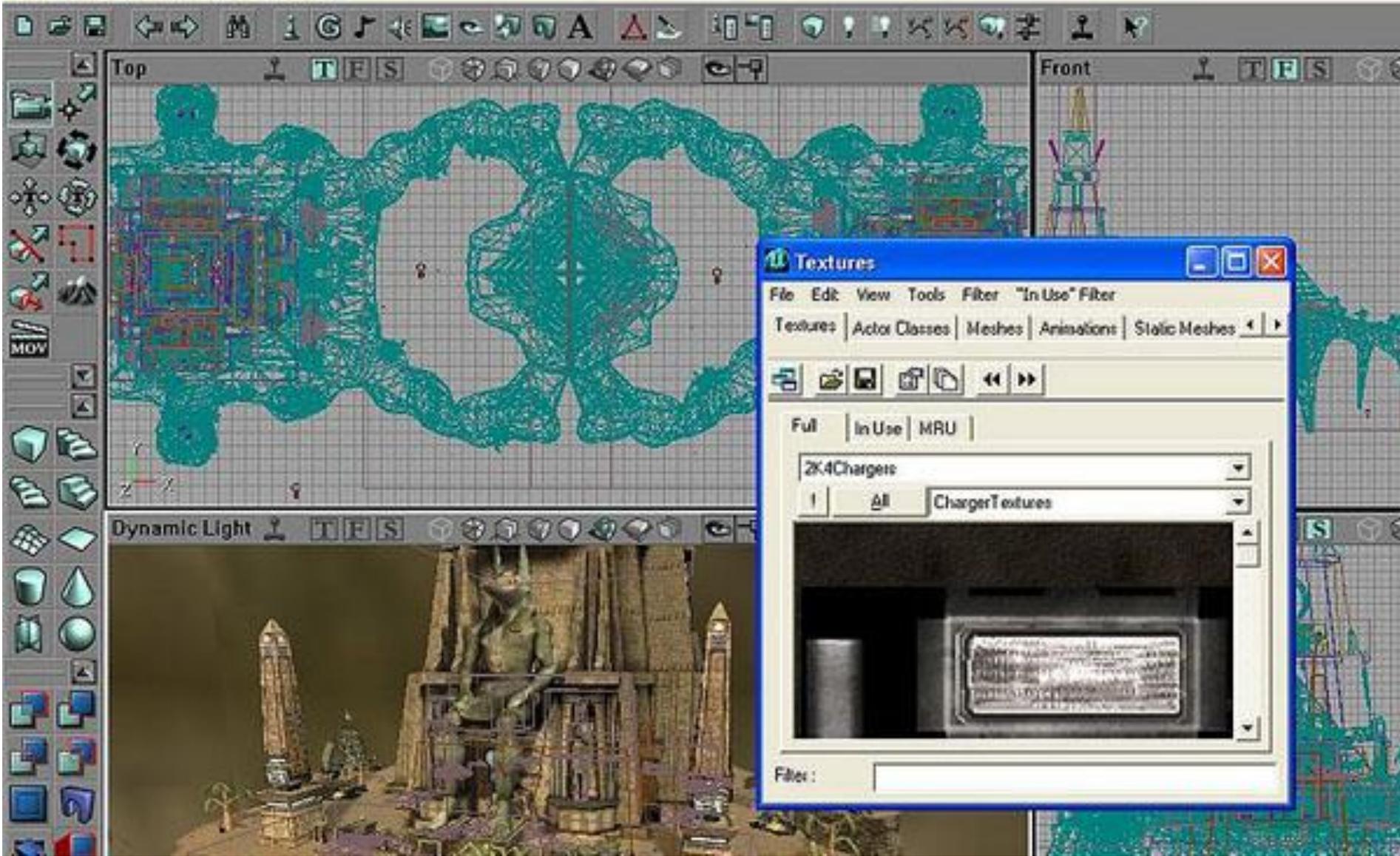
Just give me the keys to your office and your password.
Then I'll be going.

If you ever lay a hand on Anata again, I'll make you
regret it.

I'm here to kill you. Jonas was my friend.

e. detailed levels





Textures

File Edit View Tools Filter "In Use" Filter

Textures | Actor Classes | Meshes | Animations | Static Meshes

Full | In Use | MRU

2K4Chargers

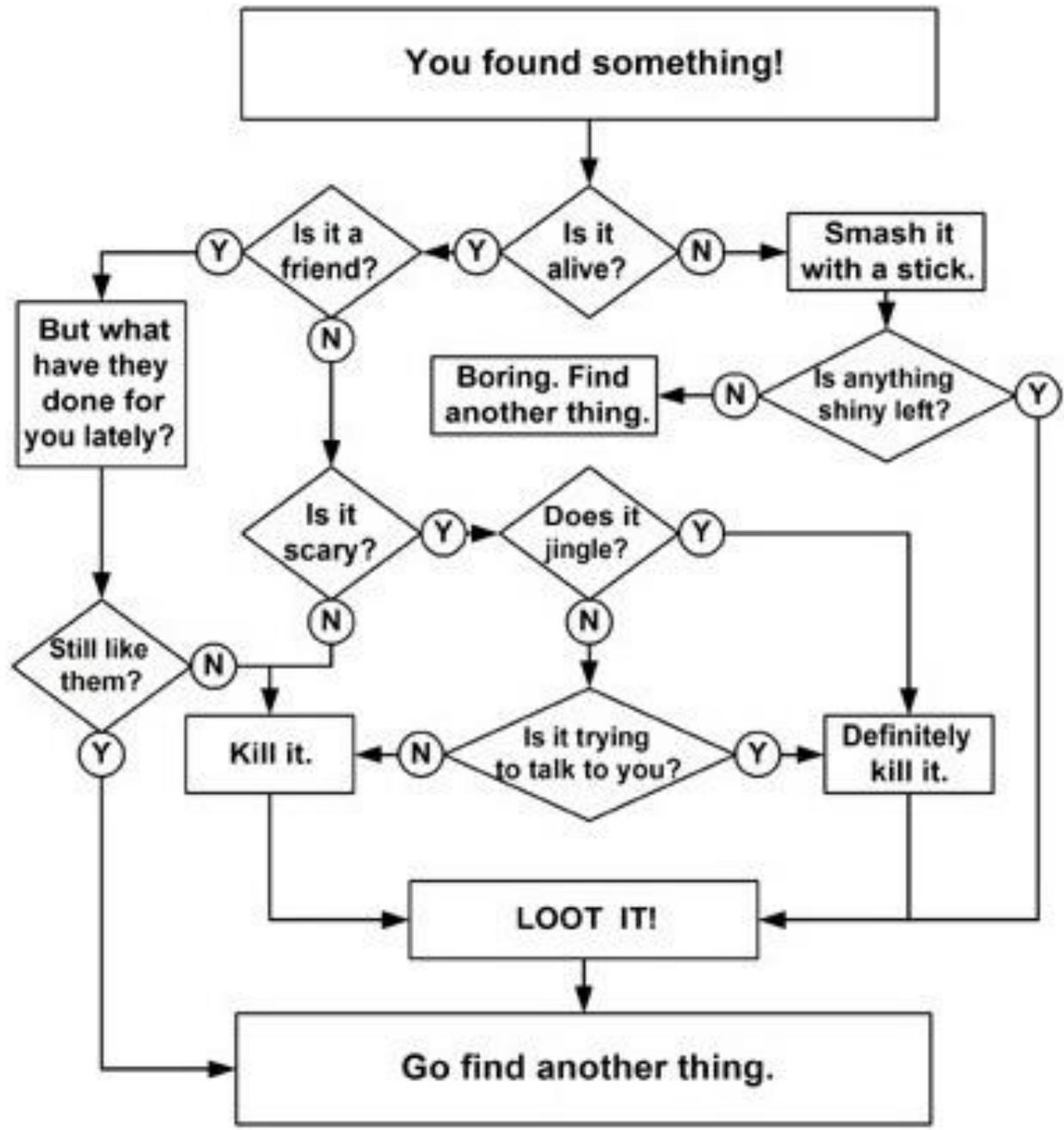
All | ChargerTextures



Filter:



f. flowcharts





 **BUS**

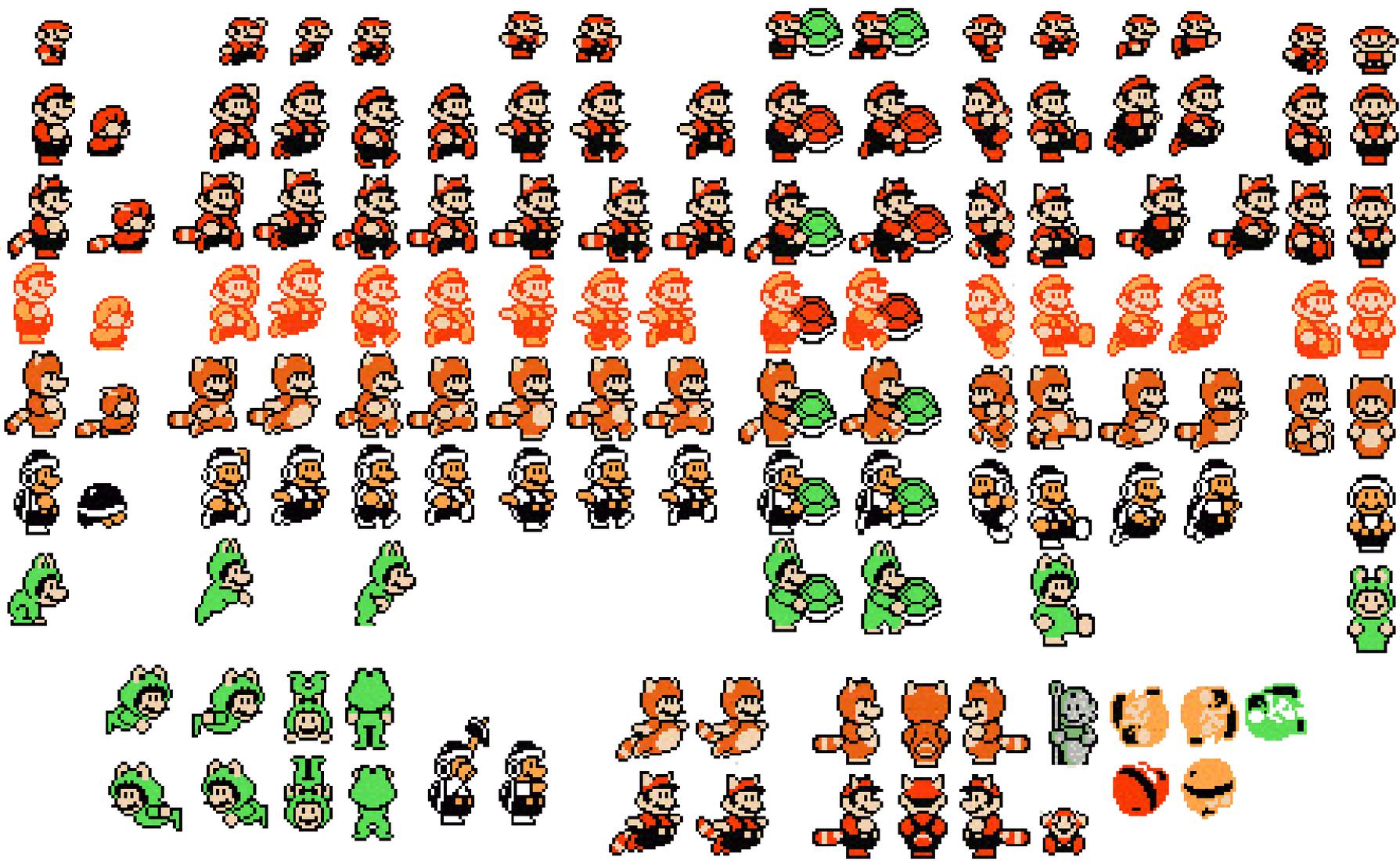
LOOT 

 **BATTLE**

BUILD 

 **VICTORY**

g. sprite creation





h. art and music



THE **GREATEST
VIDEO
GAME
MUSIC**

PLAYED BY
LONDON PHILHARMONIC ORCHESTRA

Let's analyse
some key
design
choices.





Yeti Shop



Charme
de vie



Acheter

Charme de
rayures



Acheter

Charme du
temps gelé

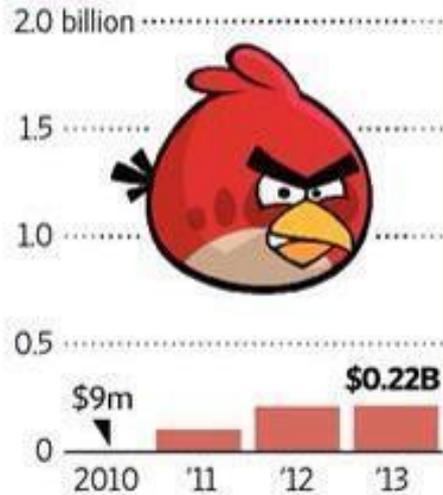


Flying Low

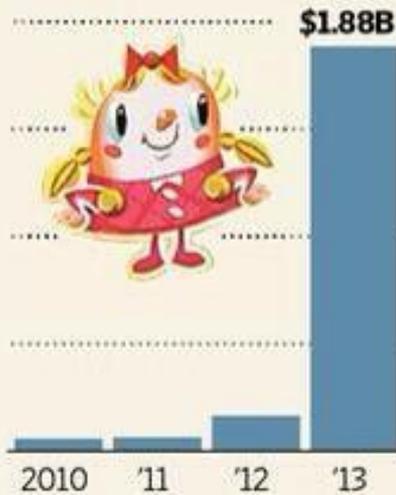
Angry Birds maker Rovio reported growth rates that are sluggish compared to Nordic gaming peers

Revenue of select mobile-game companies

Rovio



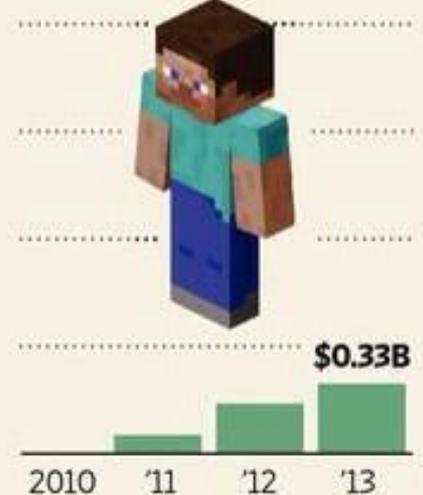
King



Supercell*



Mojang*



*Supercell and Mojang didn't generate revenue in 2010, the year they were founded.

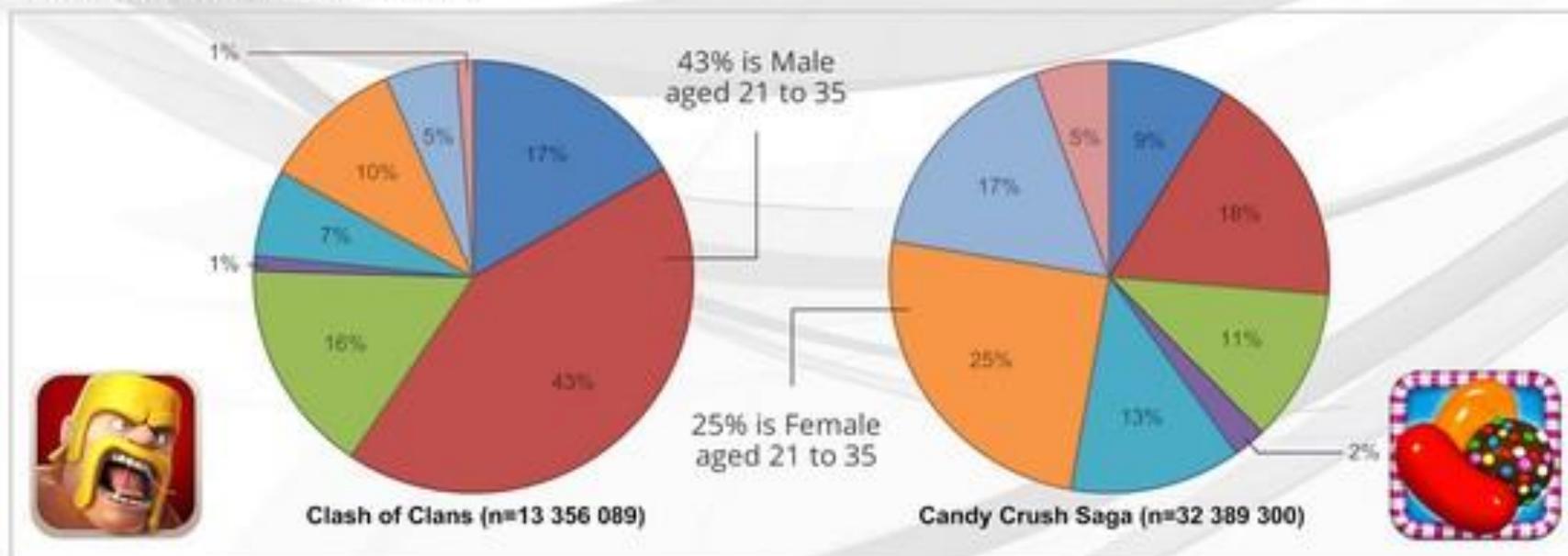
Source and photos: the companies

The Wall Street Journal

Clash of Clans vs Candy Crush | Age/Gender Spilt

Age - Gender

United Kingdom, United States, Germany, France,
Netherlands, Belgium, Poland, Turkey



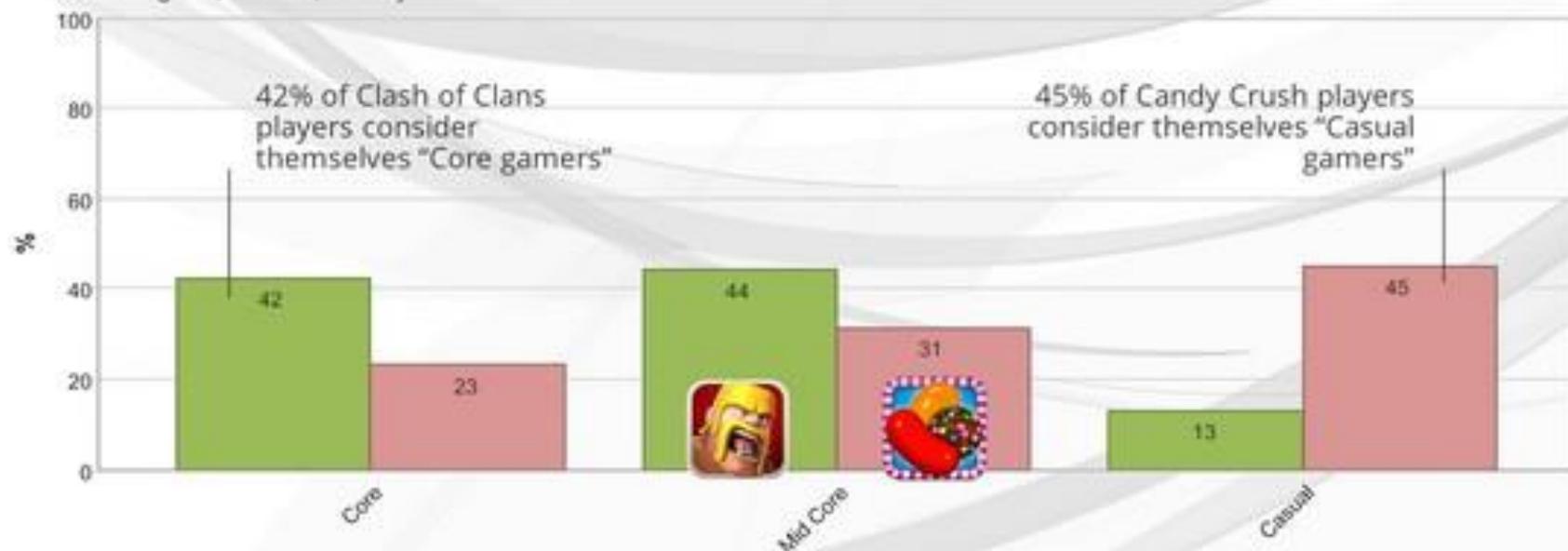
Clash of Clans vs Candy Crush | Core, Casual, Mid-Core Gamers

Gamers Segmentation

United Kingdom, United States, Germany, France, Netherlands, Belgium, Poland, Turkey

Gamers Segmentation - Clash of Clans (n=13 356 089)

Gamers Segmentation - Candy Crush Saga (n=32 389 300)



Graph exported directly from the Newzoo Data Explorer | Data of March 2013

Candy Crush

- *An example of an innovative **Design Phase***
- The artwork and characters were targeted at an untapped market: women and professionals.
- King software also decided to use the freemium model (free to play, pay to level up quickly) to generate revenue.
- These two design decisions were very successful: in 2013, Candy Crush made about \$1 M per day.

What is so successful
about Fortnite's
design?



Fortnite took standard design elements and put them together VERY well.

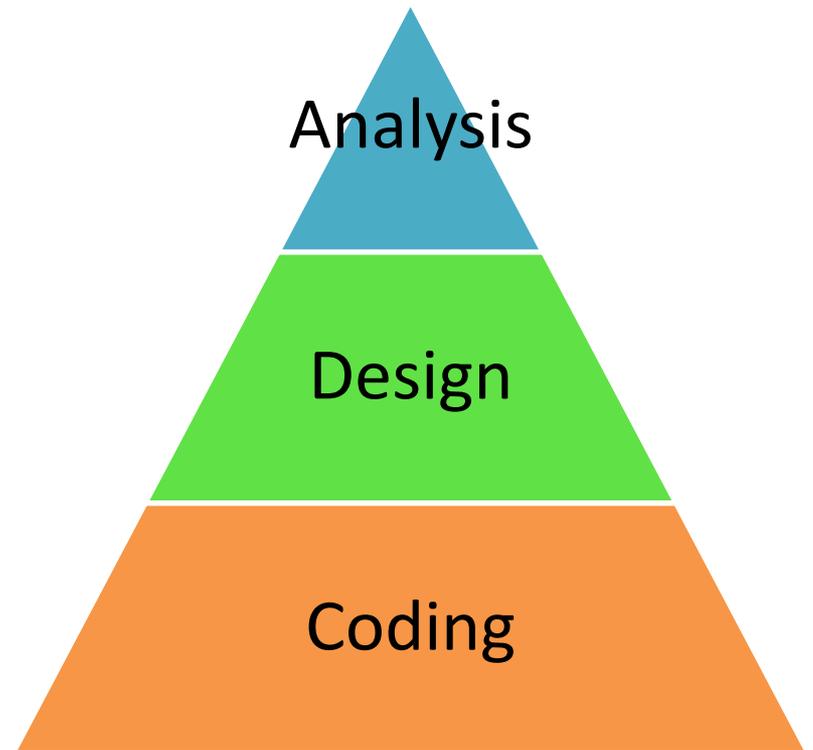
Many players, collaboration, sandbox, third person shooter, skins (freemium), storyline, multiple genders, multicultural...

Also, the release of different “seasons” has kept the game fresh.



Design Jobs

- Code Designer
- Writer
- Artist
- Graphic Designer
- Composer (Music)



Design Phase

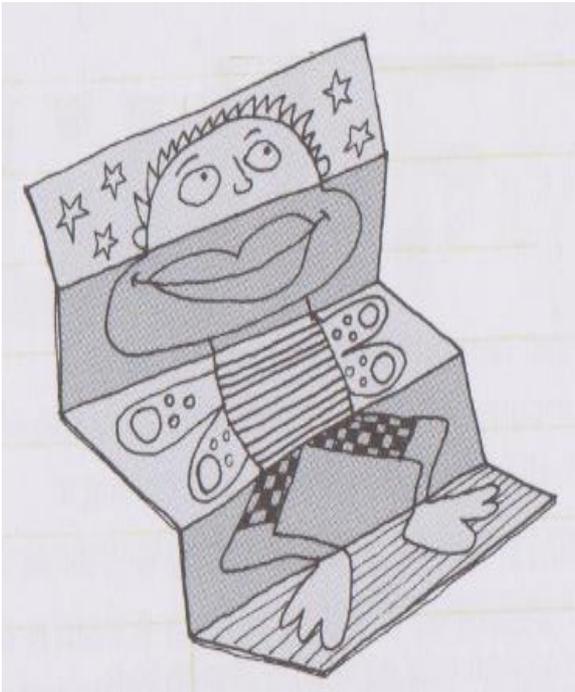
2

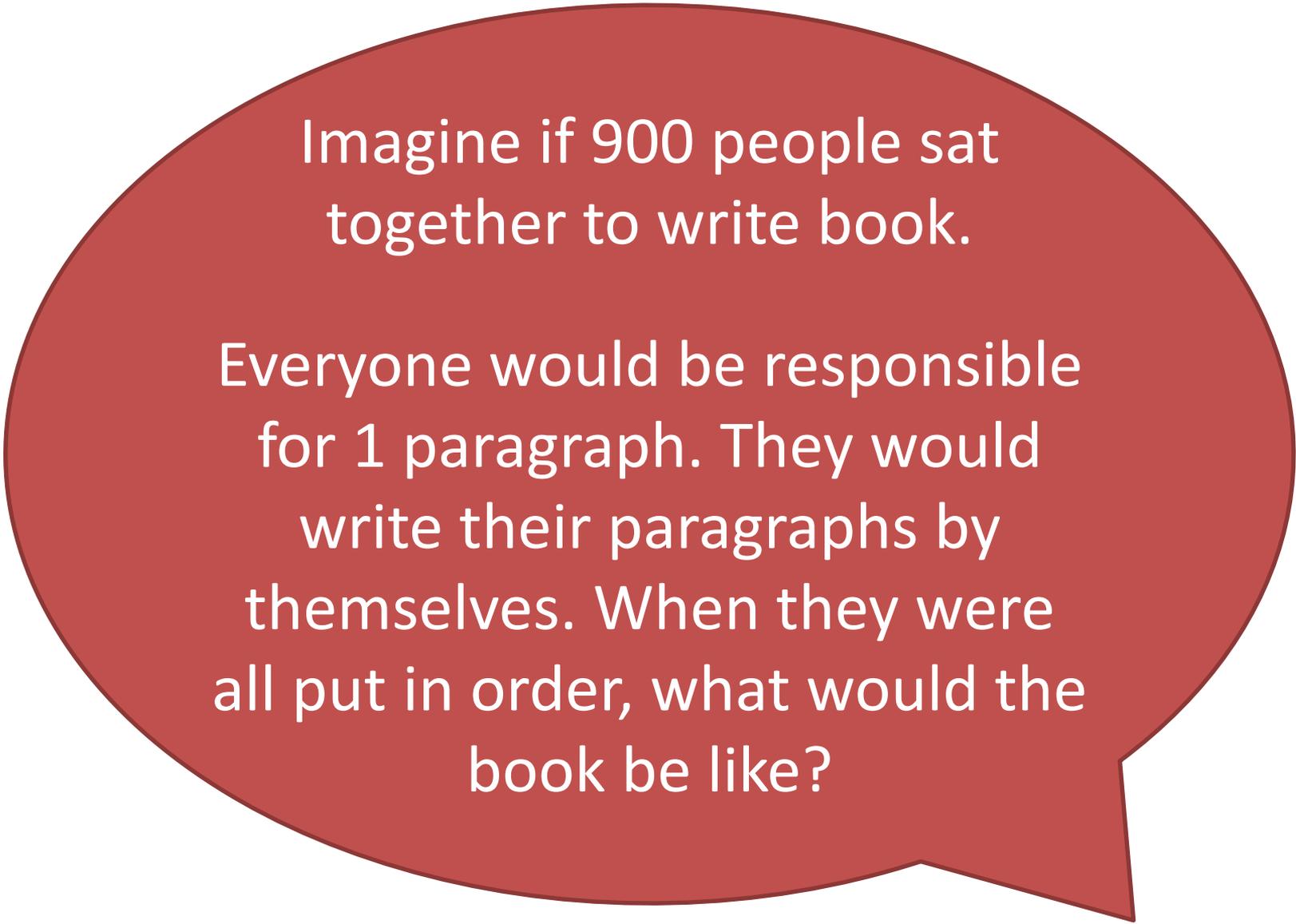
- *End result:* Detailed plans for the game
- Includes:
 1. Flow charts, Structure Chart
 2. Memory Diagrams
 3. Detailed character designs
 4. Music composition & recording
 5. Artwork
 6. Writing story line
 7. Design prototypes
 8. Level design
- *Jobs?* Writer, Musician, Graphic Designer, Artist, Code Designer, Voice Artist



3 .create

Exquisite Corpse



A red speech bubble with a white outline, containing two paragraphs of white text. The bubble is positioned in the center of the page.

Imagine if 900 people sat
together to write book.

Everyone would be responsible
for 1 paragraph. They would
write their paragraphs by
themselves. When they were
all put in order, what would the
book be like?









$$L_r(\theta_r, \phi_r) = L_e(\theta_r, \phi_r) + \int_0^{2\pi} \int_0^\pi L_i(\theta_i, \phi_i) \rho_{bd}(\theta_i, \phi_i; \theta_r, \phi_r) |\cos \theta_i| \sin \theta_i \, d\theta_i \, d\phi_i \quad (1)$$

where:

θ is the polar angle measured from the surface normal

ϕ is the azimuthal angle measured about the surface normal

$L_e(\theta_r, \phi_r)$

is the emitted radiance (watts/steradian/meter² in SI units)

$L_r(\theta_r, \phi_r)$

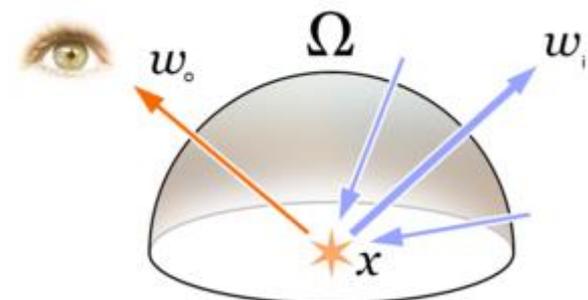
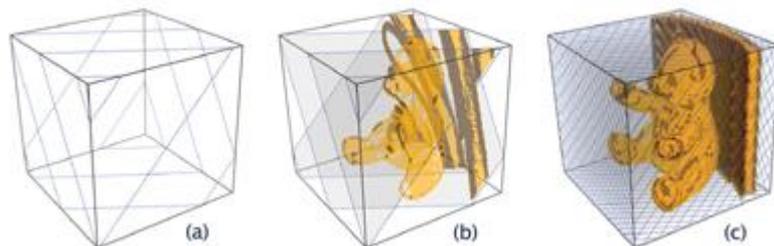
is the reflected radiance

$L_i(\theta_i, \phi_i)$

is the incident radiance

$\rho_{bd}(\theta_i, \phi_i; \theta_r, \phi_r)$

is the bidirectional reflectance-transmittance distribution function (steradian⁻¹)







Avatar (2009)

- *An example of an innovative **Coding Phase***
- The coding to create Avatar's rendering was so complex it took 900 coders several years to create it.
- This huge team required very detailed plans to allow them to each code a small piece and then fit all pieces together.
- This team was very successful.
 - Highest grossing movie to date.
 - Made \$1B in 19 days.
 - Also first movie to create photo-real CGI people.

a. first playable



b. alpha





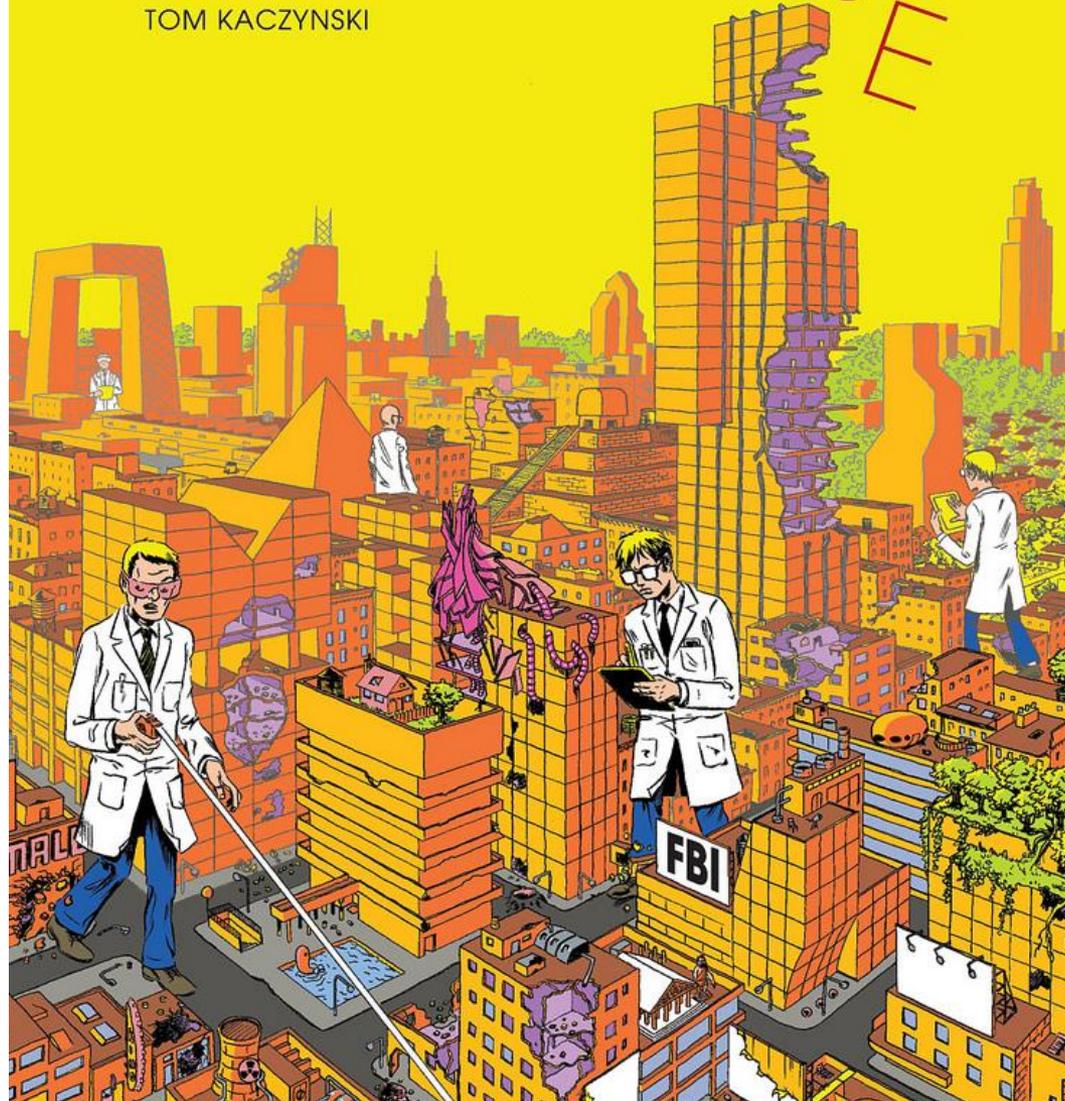
C. code freeze



d. beta

BETA TESTING THE APOCALYPSE

TOM KACZYNSKI



e. gold master

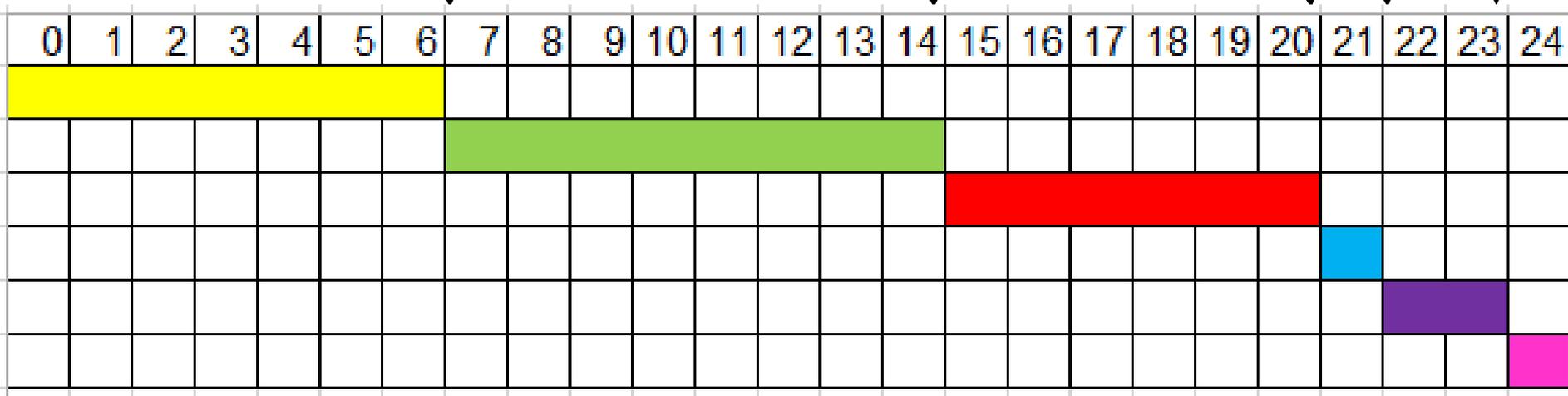
First Playable

Alpha

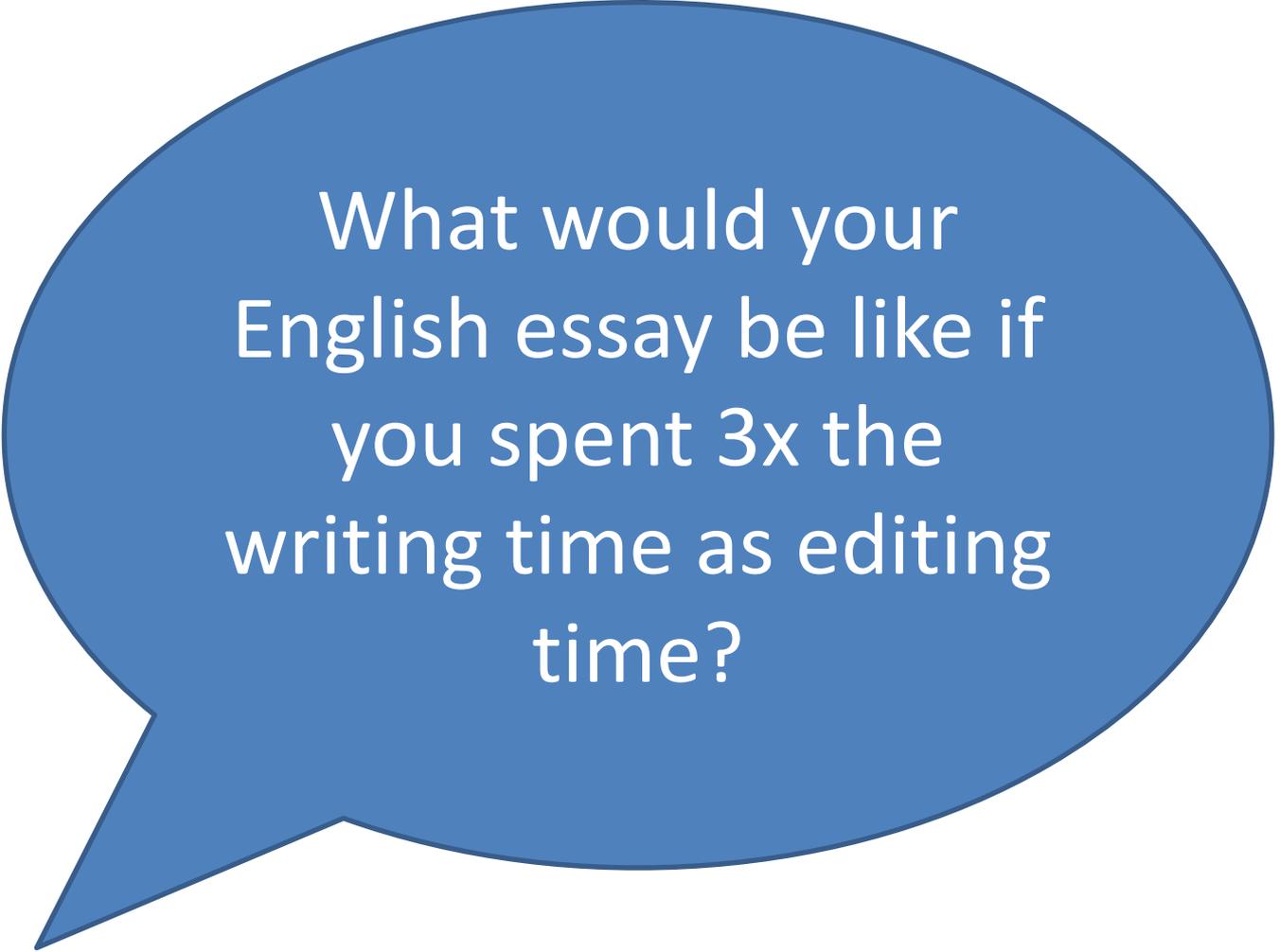
Code Freeze

Beta

Gold
Master



A game takes roughly 2 yrs in production. $\frac{3}{4}$ of that time is in testing.

A blue speech bubble with a white outline, pointing downwards and to the left. Inside the bubble, the text is written in white, sans-serif font.

What would your
English essay be like if
you spent 3x the
writing time as editing
time?

Code Jobs

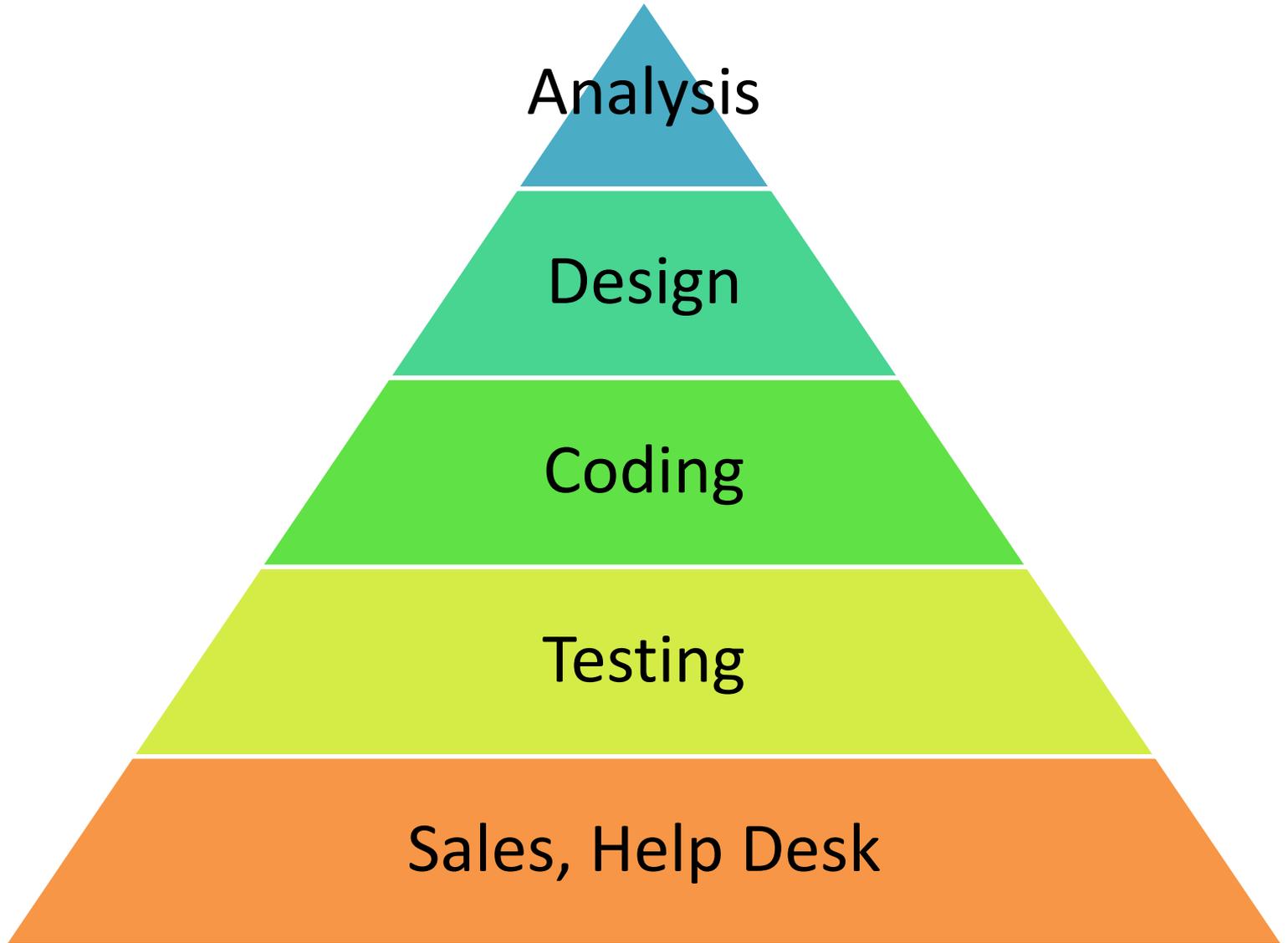
- Programmer
- Coder
- Documenter
- Voice Artist
- Musician
- Beta Tester
- Alpha Tester

Who makes the most money?

- A. Google programmer
- B. Google CEO
- C. Google software engineer (advanced programmer)
- D. Google QA tester
- E. Google founder & owner

Who makes the most money?

- E. Google founders & owners \$1
(however, Larry Page is #11th richest person with \$54.9 billion,
Sergey Brin is #13th with \$53.5 billion)
- D. Google QA tester \$70,000
- A. Google programmer \$126,000
- C. Google software engineer
(advanced programmer) \$600,000
- B. Google CEO \$197.1 million
(\$652,000 + stock options)



Analysis

Design

Coding

Testing

Sales, Help Desk

Coding Phase

3

- *End result:* The game is coded and tested.
- Includes:
 1. First Playable (basic code)
 2. Add comments
 3. Write ifs, loops, methods
 4. Alpha test (internal testers)
 5. Code Freeze (stop adding new)
 6. Beta test (external testers)
 7. Gold Master (complete game)
- *Jobs?* Programmer, Lead Programmer, Tester



4 .reflection

Advertise



NOTEBOOK

GRAND
THEFT
FEVER

GAMING

Kiss your free time goodbye – *Grand Theft Auto V* is approaching

There will be other games next year. Many of them will be good. Some will sell well and garner glowing reviews. But none will matter more than *Grand Theft Auto V*.

That was all a bit serious, wasn't it? But the fact is, *GTA* isn't a brand with yearly updates, it's one that its maker Rockstar puts time and care into. In the time between *GTA IV* and *GTA V* we'll have played five different *Call Of Duty* titles.

So, what news is there on this game (illustrated by our exclusive picture)? Well, it's set in and around Los Santos (Rockstar's take on LA and southern California), last seen in 2004's *GTA San Andreas*. The protagonist is an East Coast gangster who moved there for a fresh start. But, as in *The Godfather Part III* – just as he thought he was out, they pulled him back in. It would be a pretty boring game if they hadn't.

Grand Theft Auto V will be released spring 2013

EXCLUSIVE
PICTURE

WANT TO
SEE IT IN
ACTION?

Scan the page to watch the official trailer and enter to win a special *GTA V* collectors' item.

TURN TO PAGE 4 FOR
INFO ON USING
SLIPSCAN





Reviews



Grand Theft Auto 5, which launched on Tuesday, generated about \$800 million US in worldwide sales in the first day alone.

But GTA is more than just a lucrative franchise. Tech experts says it has changed people's perceptions of videogames and their audience, and had a transformational effect on the gaming industry itself.

"What Grand Theft Auto did was helped establish how sophisticated games could be — that they weren't just for teenage males," says Scott Steinberg, a strategic innovation consultant at TechSavvy Global.



Start Planning
the next version.

GTA 5 (2013)

- *An example of an innovative **Reflection Phase***
- Total development cost of \$265 million. \$128 million of that was marketing.
- Used old media (billboards, news) and new media (social, streaming) to market the game.
- Results? Very successful.
 - Fastest selling entertainment product to that date.
 - \$1B in 3 days

Reflection Jobs

- Sales Analyst
- Ad Writer
- Salesperson

Reflection Phase

4

- *End result:* Game has been marketed and sold.
- Includes:
 1. Marketing
 2. Sales
 3. Reflection
 4. Plan sequel
- *Jobs?* Sales Analyst, Advertiser