

# Videogame development team

Videogames Technology  
Asignatura transversal

Departamento de Automática

## Objectives

- Understand the roles in game development
- First contact with the main game development problems
- Understand game design
- Introduce basic vocabulary

## Bibliography

1. Desarrollo de Videojuegos, Arquitectura del Motor de Videojuegos. UCLM.
2. Tynan Sylvester. Designing Games. O'Reilly
3. Wikipedia

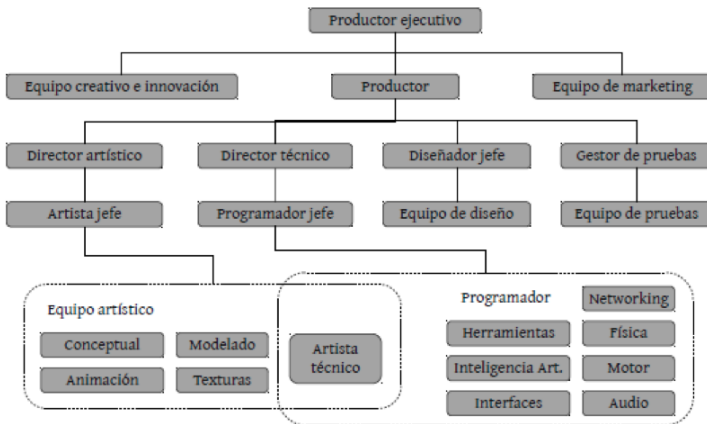
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# Overview (I)

- Videogame development is highly multidisciplinary
- From a computing perspective
  - Hardware, peripherals, ...
  - Videogames software engineering, usability, gameplay, graphical computing, AI, ...
- From a non-computing perspective
  - Creative team: Artists, graphical designers, creatives, musicians, level designers, ...
  - Marketing and management
- Three big teams
  - Marketing: Game sales
  - Creative and innovation: Conceptualisation of new games
  - Production: Game implementation

## Overview (II)



Source: Desarrollo de Videojuegos, Arquitectura del Motor de Videojuegos. UCLM.

(More info)

# Design team (I)

They design the videogame structure

- Story, sequence of chapters, game mechanics, goals, characters, write dialogs, hint system, etc

Key concept: **Level designer**, coordinated with the engineering team

- Designers have programming tasks: NPC behavior
- They use high-level script languages

Script language: Interpreted language that is not compiled

- General languages: LUA, Python, Ruby
- Specific languages: LSL, AngelScript, GameMonkey, Io, Pawn, Squerrel, etc

Tools for level design

- Ad-hoc tools
- Integrated in the game engine (Unreal, Unity, etc)
- Specialized tools: Tiled

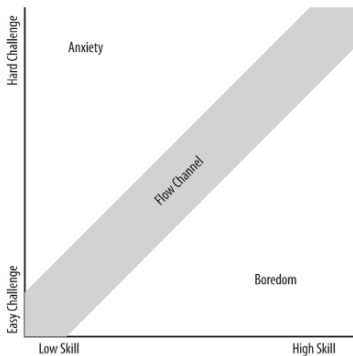
(Video 1) (Video 2)

# Design team (II)

## Emotional triggers

Games should evoke emotions

- Learning
- Character arcs
- Challenge
- Social interaction
- Acquisition
- Spectacle
- Beauty
- Environment
- Newfangled technology
- Primal threats
- Sexual signals



Tynan Sylvester. Designing Games. O'Reilly

# Design team (III)

## Designing characters

### Main character and antagonist

- Goals
- Motivation
- Psicology
- History
- Skills
- Weapons
- Uniqueness

### Level bosses

- Characteristics

### NPCs

- Ally
- Enemy
- Neutral



# Design team (IV)

## Narrative: Three acts

### Traditional three-act structure

- Act I: Setup (introducción)
- Act II: Confrontation (nudo)
- Act III: Resolution (desenlace)

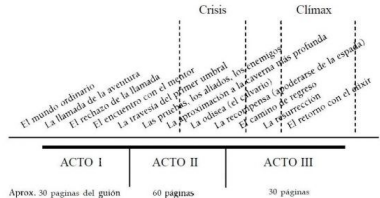
# Design team (V)

## Narrative: The hero's journey

### EL VIAJE DEL HÉROE



### El modelo del viaje del héroe



(Source)

(Video)

# Design team (VI)

## Design document

Game design document (or **GDD**)

- Describes how the game is going to be
- Part of the creative process
- Used to gather funds

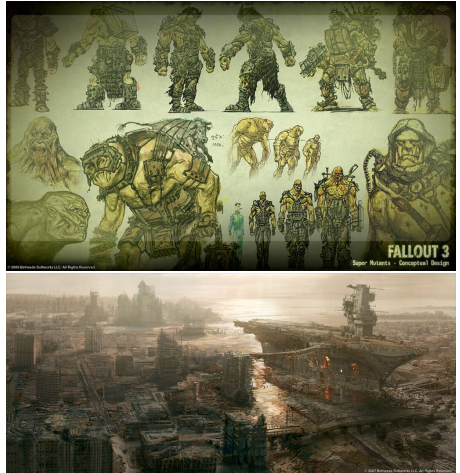
Contains

- The story
- Characters description
- Sequence of levels
- Game mechanics
- Physics descriptions
- Conceptual art

(Maniac Mansion design document) (Maniac Mansion on-line)

# Artistic team

- It creates the game art
- Roles in the artistic team
  - (Conceptual artists)
  - (Modellers)
  - (Texture artists)
  - Illumination
  - Animators
  - Sound designers
  - Actors
  - (Motion capture actors)



# Artistic team

## Tools

### 2D design

Photoshop, Gimp, Illustrator, ...

### 3D design

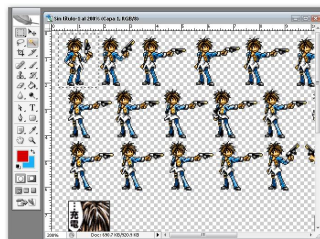
Blender, Maya, 3D Studio Max, Lightwave, Modo, ...

### Video editors

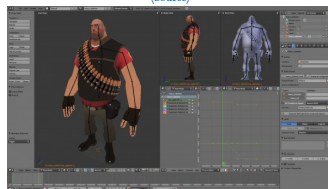
Cinelerra

### Sound editors

Audacity



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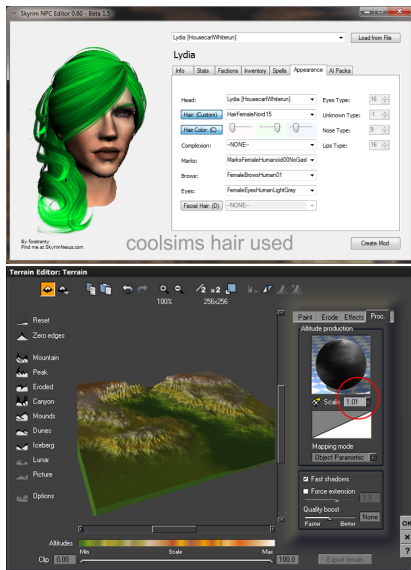
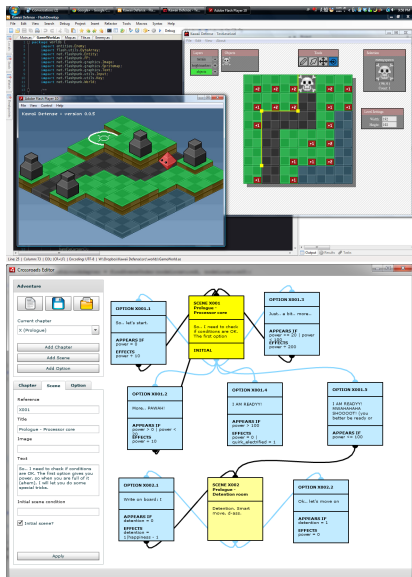


(Source)

# Engineering team (I)

- It designs and implements software
- Kernel programmers: Game kernel and components
  - Physics, AI, graphics, sound, gameplay, scripting, UI, input processing, networking
- Tools programmers: Support tools for other teams
  - Level editors
  - Dialog editors
  - 3D modelling
  - NPC editors and testers
  - Landscape generators, etc
- Development tools may be published

# Engineering team (II)



# Engineering team

## Quality team

- Also known as testing, beta testing, quality control, ...
- Testers look for bugs
  - Technical bugs
  - Entertainment issues
- Testing involves:
  - Features, compatibility, localization
  - Active search of bugs
  - (Fallout 4) (Fallout 4)
- When a bug is found, testers must document it
  - Bug tracking software: Redmine, Jira, Bugzilla, ...
  - These tools are also used for task management
  - (Github Issues)

(More info)