

Introduction to videogames

Videogames Technology
Asignatura transversal

Departamento de Automática

Objectives

- Contextualize game development
- Introduce basic vocabulary

Bibliography

1. Desarrollo de Videojuegos, Arquitectura del Motor de Videojuegos. UCLM.

Table of Contents

1. Introduction
2. Motivation
3. Definition
4. Videogames development
5. Industry
6. History

Motivation

Why videogames?

- They involve all the Computer Science disciplines
- Exciting problems from an intellectual perspective
- Benchmark for AI
- Career opportunities
- They are fun!

Definition (I)

Vallejo

A videogame is a graphical application in real-time with an interaction between the user and the game

Real-time: **In this context**, it means the need of generating a frame rate

Interaction: Joystick, keyboard, mouse, body, ...

Definition (II)

Alternative definitions:

- A play activity with rules that involves conflict (I. Scheiber)
- A game has ``ends and means": an objective, an outcome, and a set of rules to get there (D. Parlett)
- A game is an activity involving player decisions, seeking objectives within a ``limiting context" (i.e. rules) (C. Abt)

Highly recommended reading: Raph Koster. A Theory of Fun. O'Really, 2nd edition. 2014.

Definition (III)

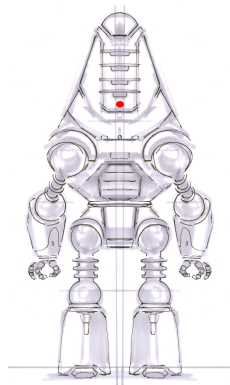
A personal perspective

Videogame = Video + game

Definition (IV)

Elements to take into account

- Story (Characters, goals, dialogs, etc)
- Graphics (3D models, animations, videos, etc)
- Sound (Music, sound effects, voice, etc)
- Logic (Game rules, programming, etc)
- Interface (HUD, user interface, etc)
- **Gameplay** and playability



Videogames development (I)

Topics involved in videogames development

- Personal computers
- Microprocessors development
- Peripherals (specific for videogames)
- 3D technology
- Internet
- Videogames engine development
- Physics engines
- Graphical engines
- Software engineering
- Artificial Intelligence (AI)

Videogames development (II)

Recent elements involved in videogames development:

- Human-machine interfaces
- Social networks
- Mobile technologies
- Tablets

Industry (I)

Industry involves

- Development, distribution, marketing and sales
- This involves software and hardware as well

Videogames generates more business than pictures and music

- 57,6 billion euros in 2009, 91 in 2016
 - 41 mobile gaming, 34 PCs, 19 free-to-play
- Average videogame cost: 7.4 - 9.7M €
 - Consolited franchises

Industry (II)

- PCs decrease as consoles increase sales
- From mid 80's consoles are the main platform
- Best revenues are in software
 - Hardware sold at a loss



Overview of Videogames

History

We can distinguish the following chronology

1. Videogames pre-history: Analogic hardware
2. 80's: 8 bit (Spectrum, Amstrad, ...)
3. 90's: 16 bit (Amiga, Atari, Game Boy, ...)
4. 2000 to now: High performance hardware

Check out these videos:

- (Video past)
- (Video future)
- (Video suggested)