History of Digital Games

Aka. way too little time for covering the topic in detail
Pics mostly from Wikimedia Commons

Outline

A somewhat chronological look into digital games, including:

- Technological developments
- Notable examples
- Playing some games too
- Little discussions

Followed by:

- History of the Finnish game industry
- Game preservation

Question

What games do *you* play?

Prehistory

Digital games preceded by (electro)mechanical ones: slot machines, pinball machines, amusement parks and so on

Advent of computing

Digital computing has its roots in the 1940s and the 2nd world war

Alan Turing's Bombe (1940), still electromechanical

Konrad Zuse's Z-series of machines (late 1930s onwards)

Colossus Mk 1 (1943), already based on vacuum tubes

Technological milestones

Transistor, 1947

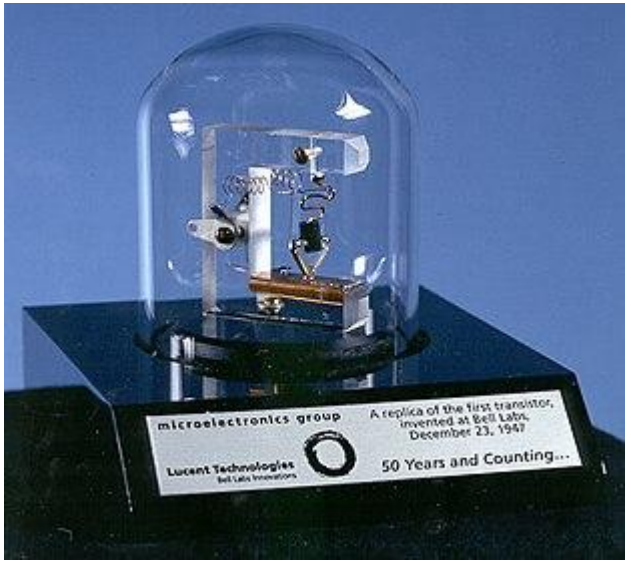
Integrated circuit, 1958

Sketchpad, 1961

Microprocessor, 1971

Microcomputers, 1970s

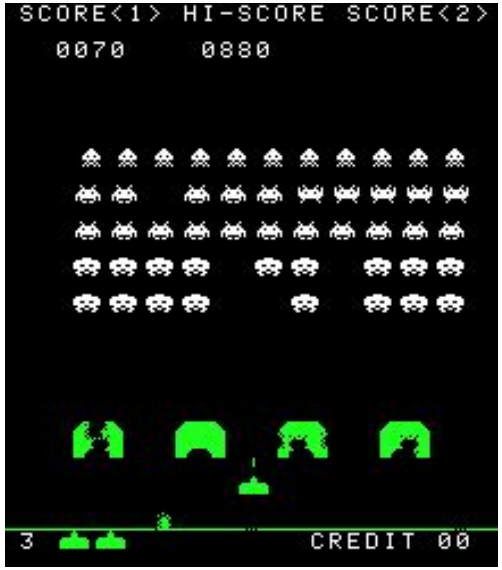
Cold war, space race, SAGE



Two pioneering works

Tennis for Two (1958) and Spacewar! (1962)

Arcades



Pong (1972), Space Invaders (1978), Pac-Man (1980)

Let's try Pong

https://www.ponggame.org/

Question: Why was this unlike someone playing Pong in 1972?

Video game consoles

Magnavox Odyssey (1972), Fairchild Channel F (1976), Atari VCS (1977)

Pitfall (1982) on the Atari VCS

Video Game Crash

1983 recession of the videogame industry

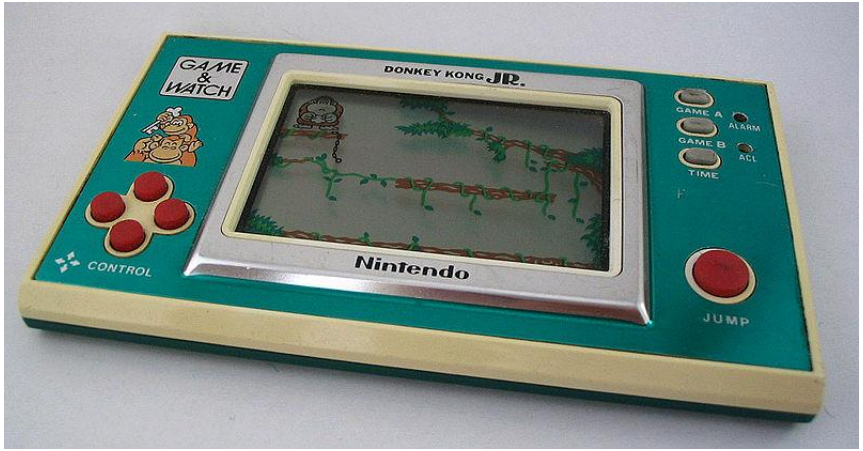
Competing systems, home computers

Saturated market, overproduction

Low-quality games, "shovelware"

Bankruptcies, cutdowns, plummeting market value

Handheld electronic games (late 1970s to early 1980s)



Small & affordable games, most notably Nintendo's Game & Watch series – compare to their later Game Boy consoles!

Let's try an electronic handheld!

Double Dribble by Konami

https://archive.org/details/hh_kdribble

Press 1 three times and then the arrow keys

"8-bit" home computers

Started appearing in the late 1970s

Based on microcomputer technology of the time

Game-capable

Typical specs of the early 1980s' machines: 64 kilobytes of memory 1–4 MHz processor, 16 colors, tapes or floppy disks for storage

Tens of companies competing for the market

Part of a larger trend: VHS, Walkman, pocket calculators, toys

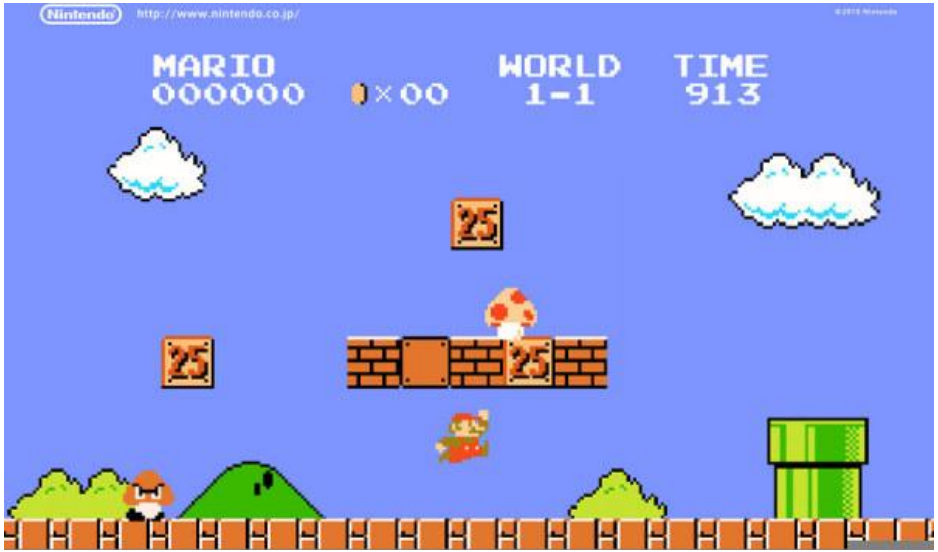
Some home computers

Sinclair ZX Spectrum (1982), Commodore 64 (1982), Amstrad CPC (1984)

1980s game consoles

Nintendo Entertainment System (1983) and Sega Master System (1985)

You probably recognize this



IBM PC (1981)

High market share in business and particularly the USA.
Initially not videogame-capable, but at least expandable.

Improved "16-bit" home computers

Home computer companies were not sitting idle

Improved so-called 16-bit machines with more colors, more processing power (7–8 MHz) and memory (512 kilobytes or more)

Sinclair QL (1984), Atari ST (1984), Commodore Amiga (1985), Commodore Amiga 500 (1987)

Mouse and GUI became standard, inspired by the Macintosh

Better consoles too

Sega Mega Drive (1988), Nintendo SNES (1990)

Again: more colors, more speed, more memory, better audio

Games still sold on cartridges

CD-ROMs around the corner

Laserdisc and CD-ROM games

Laserdisc originally meant for movies, 12" optical disks

Used also for video-based games, such as Dragon's Lair (1983)

Impressive video footage, but very limited interaction

Echoed in the 1990s, when home computers started getting CD-ROM drives

Not just 2D

Castle of Wolfenstein (1992) – 3D games much older than this

3D acceleration enters homes

3D graphics initially done in software by clever programming

Virtual Reality hype, 3D workstations

Game consoles: Atari Jaguar (1993), Sony PlayStation (1994), Nintendo 64 (1996), Sega Dreamcast (1998)

PC Accelerator cards of the late 1990s: 3dfx Voodoo, Nvidia Riva TNT, ATI Rage

Internet gaming

Networked games are nothing new

Initially text-based, such as MUD games (1980-)

Some 1980s computer and console games allowed for link play using a serial cable or a modem connection

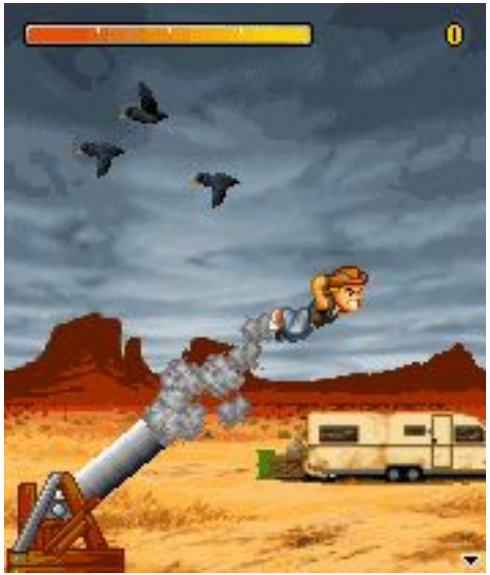
The growing popularity of the World Wide Web from the mid-1990s

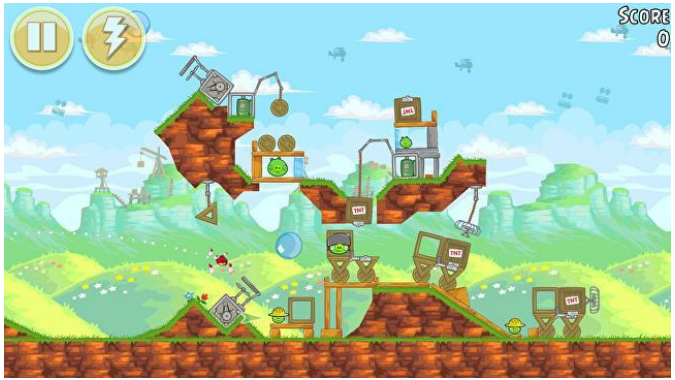
ARPANET dates back as far as 1969

Question

When did you first ever use the Internet?

Mobile phones for gaming





Mobile phone games: built-in, J2ME (Java) and iOS

Now

Approaching today's phenomena, such as:

- PlayStation series, Xbox series, Nintendo Wii and Switch
- Smartphones
- Gaming PCs
- Massive amounts of processing power, memory and storage, broadband Internet
- Massively multiplayer online games
- Online stores, digital distribution, "games as service"

Coming up next

A closer look at the Finnish game industry and the challenges of game preservation efforts