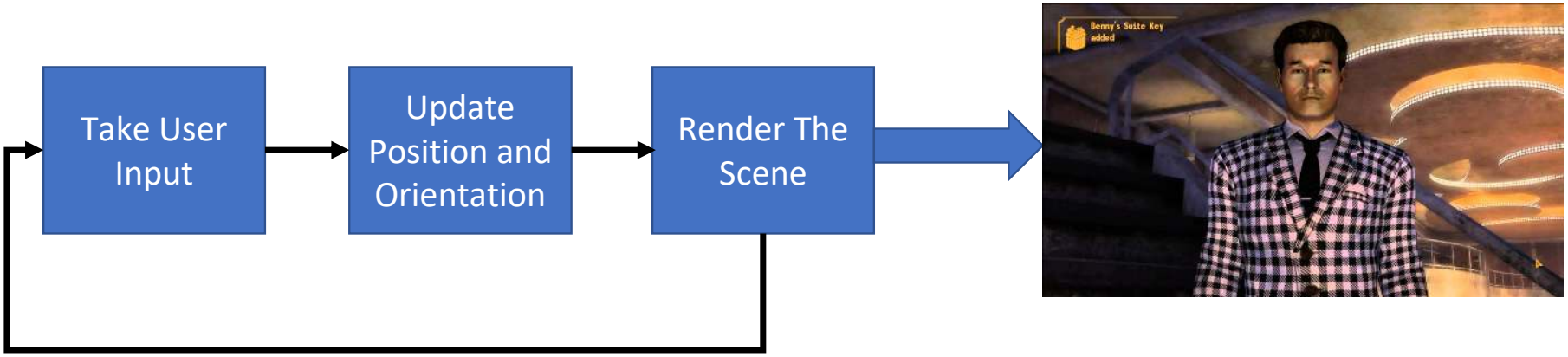
Game Programming

Our Road Map

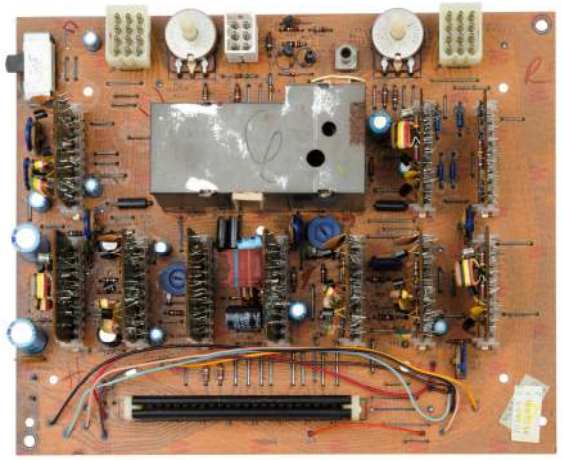
- How Game Works
- History Tour
- Todays Game Market
- Game Programming Jobs
- Game Development Tools

How A Game Work



Video Games History – First Generation

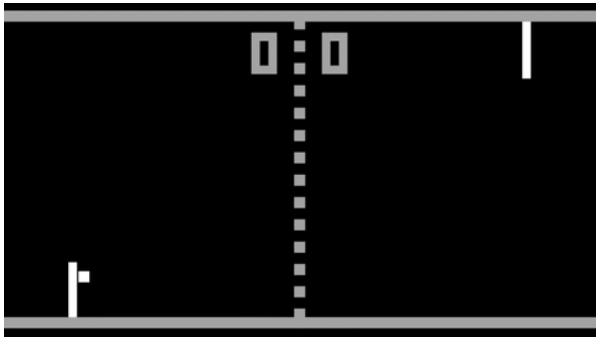
- Magnavox Odyssey



350,000 SOLD World Wide

Video Games History – First Generation

- Pong Machines



Second Generation Consoles

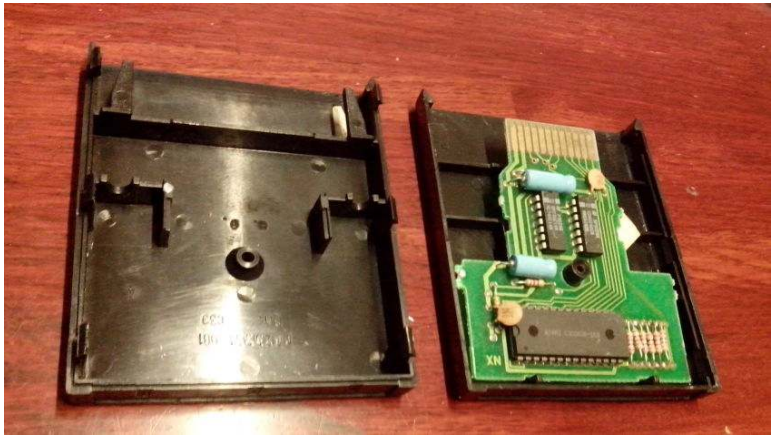
- Atari 2600

CPU

128 bytes RAM

1.19 Mhz MOS 6507

Game Cardriges



Atari 2600 Games

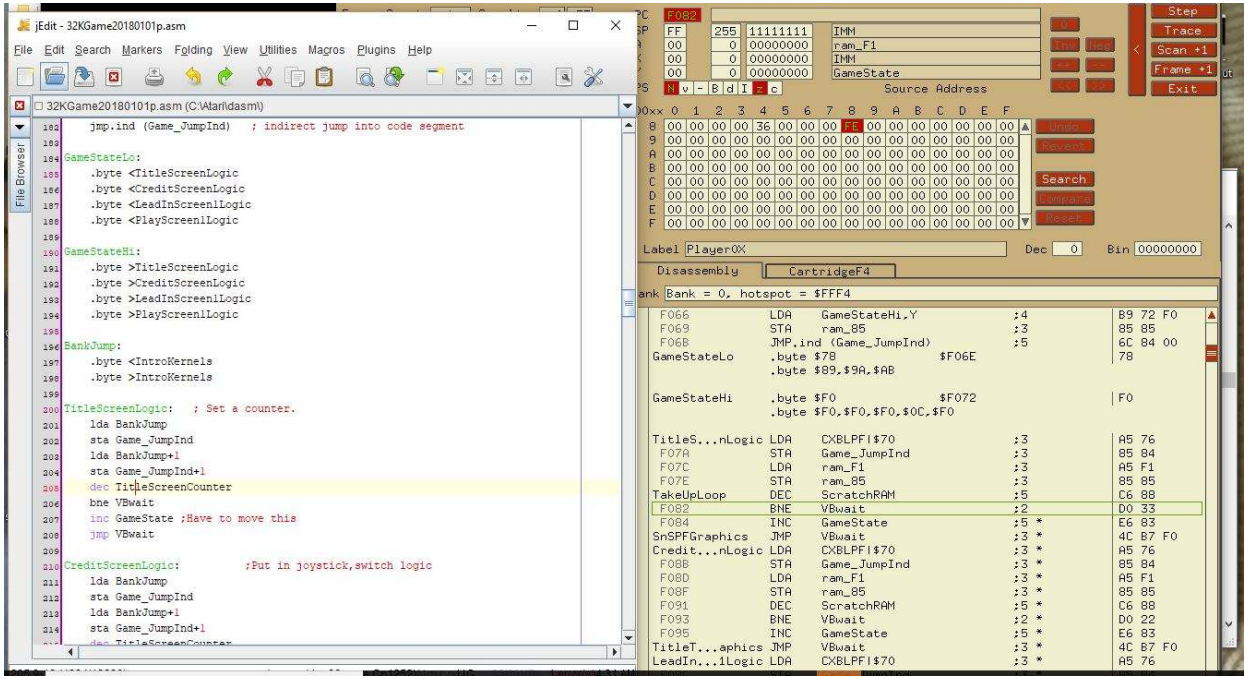
Pitfall
First Platformer

E.T.
Worst Game Ever

Space Invader
It's just a game

Development Tools

- 6502 Assemly Language



Game Computers

Commodore 64

Mos 6502 1 Mhz CPU

Zx Spectrum

Z801 3.5 Mhz CPU

Amstrad CPC464

Z801 3.5 Mhz CPU

Commodore 64 (1982)

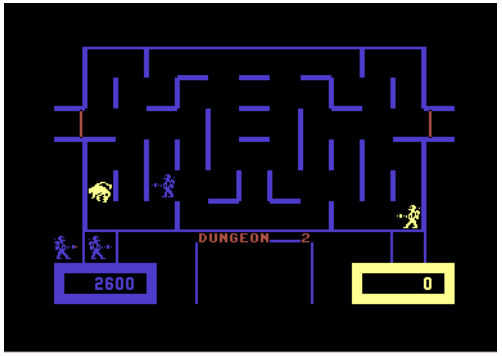
- About 17 Million units Sold
- Most popular computer of all time.

Tape Drive

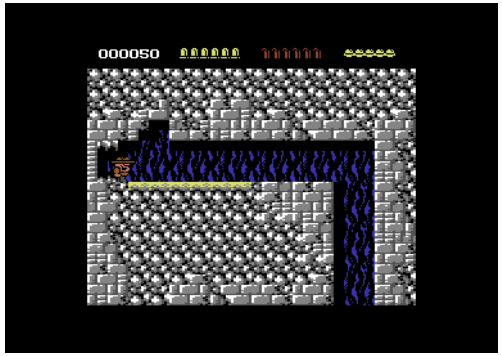
Serial Port

Games

International Karate



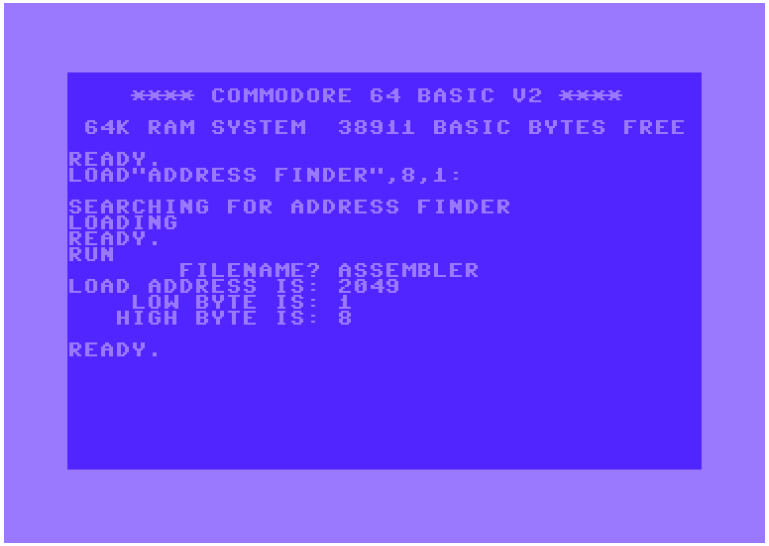
Wizard of Wor

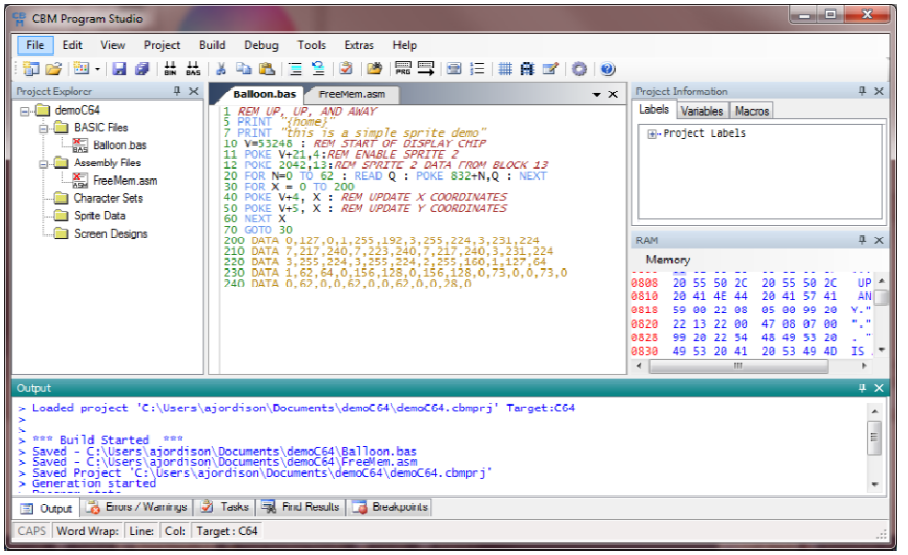


Rick Dangeous

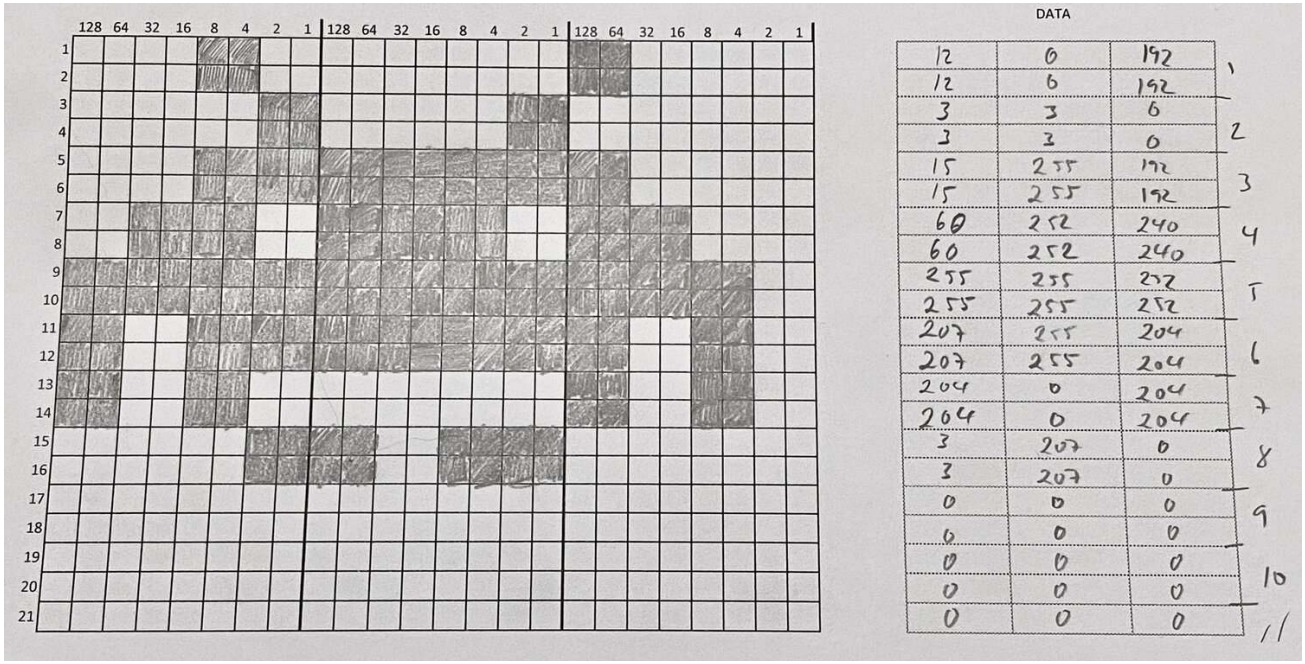
Development Tools

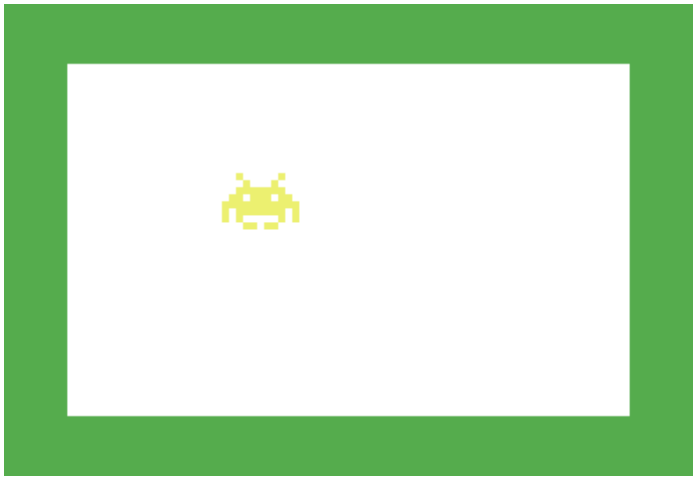
- Basic Language
- 6502 Assembly Language





Designing Sprites





Third Generation Consoles

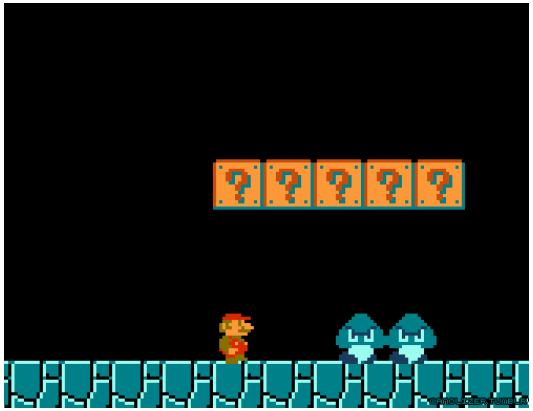
Nintendo Entertainment System (NES)

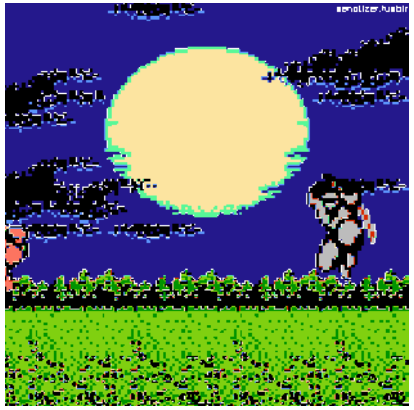
61.91 Million Sold

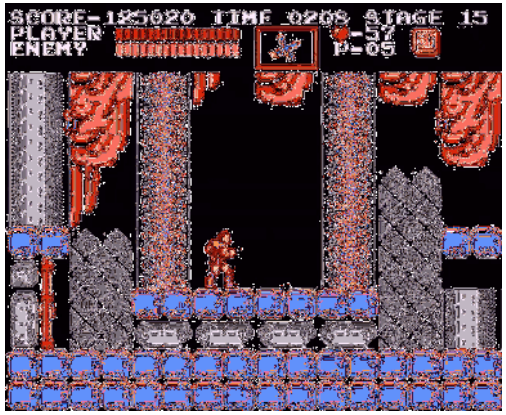
Sega Master System

10-13 Million Sold

Games



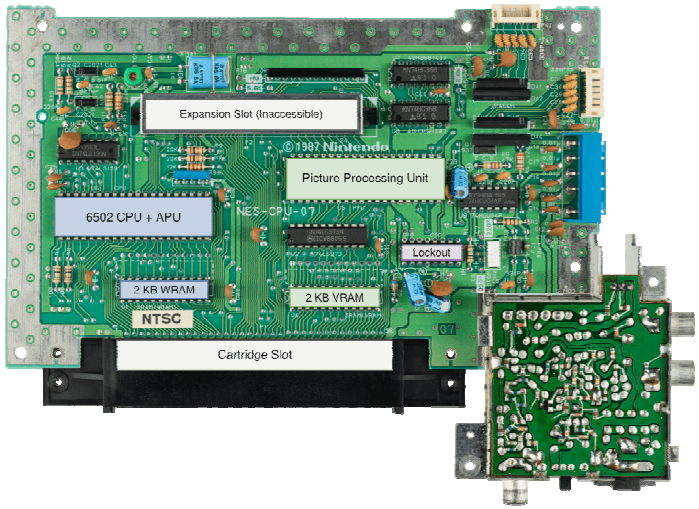



SCORE-125020 TIME 0205 STAGE 15
PLAYER
ENEMY
♥-37
P-05


X1
X0
X3
B
A
-LIFE-

Hardware

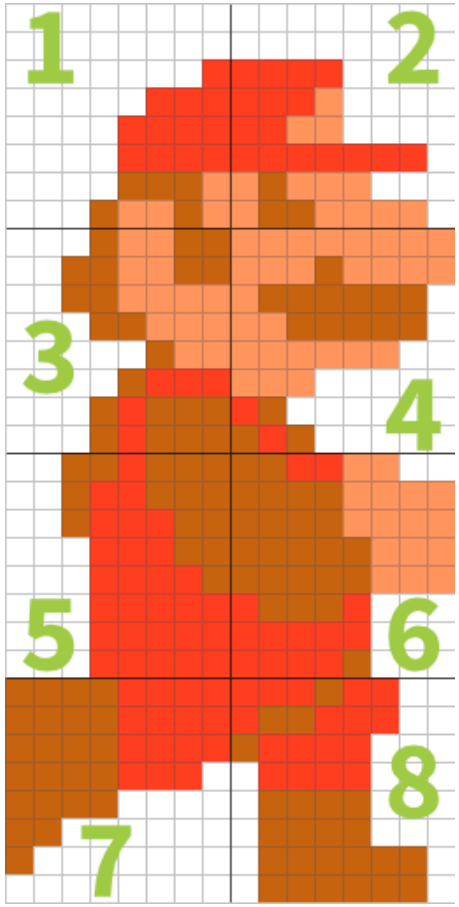
- MOS 6502 1.79 Mhz CPU (Ricoh 2A03)
- 4KB RAM
- PPU(Picture Processing Unit)
- APU (Audio Processing Unit)



Top Selling Games

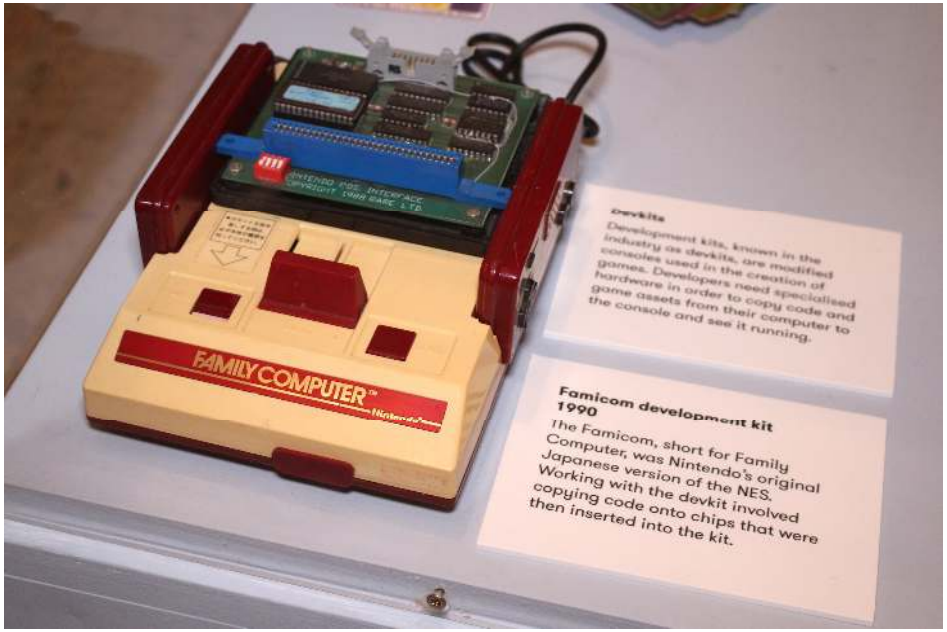
	Game	Developer(s)[a]	Publisher(s)[a]	Release date[b]	Sales	Ref
1	*Super Mario Bros.* †	Nintendo R&D4	Nintendo	September 13, 1985	40,240,000	[1]
2	*Duck Hunt* †	Nintendo R&D1	Nintendo	April 21, 1984	28,310,000	[2]
3	*Super Mario Bros. 3* †	Nintendo R&D4	Nintendo	October 23, 1988	18,000,000	[3]
4	*Tetris*	Nintendo R&D1	Nintendo	November 1989	8,000,000	[4]
5	*Super Mario Bros. 2* (international version)	Nintendo R&D4	Nintendo	October 9, 1988	7,460,000	[3]
6	*The Legend of Zelda*	Nintendo R&D4	Nintendo	February 21, 1986	6,510,000	[5]
7	*Dr. Mario*	Nintendo R&D1	Nintendo	July 27, 1990	4,850,000	[6]
8	*Zelda II: The Adventure of Link*	Nintendo R&D4	Nintendo	January 14, 1987	4,380,000	[5]
9	*Excitebike*	Nintendo R&D1	Nintendo	November 30, 1984	4,160,000	[2]
10	*Golf*	Nintendo R&D1	Nintendo	May 1, 1984	4,010,000	[2]
11	*Teenage Mutant Ninja Turtles* †	Konami	JP: Konami NA: Ultra Games	May 12, 1989	4,000,000	[7]
12	*Dragon Quest III*	Chunsoft	Enix	February 10, 1988	3,895,000	[8]
13	*Kung Fu*	Nintendo R&D1	Nintendo	October 18, 1985	3,500,000	[2]
14	*Baseball*	Nintendo R&D1	Nintendo	December 7, 1983	3,200,000	[9]
15	*Dragon Quest IV*	Chunsoft	Enix	February 11, 1990	3,180,000	[8]
16	*World Class Track Meet* †	TRY Co.	Nintendo	December 23, 1986	3,080,000	[2]
17	*Punch-Out!!*	Nintendo R&D3	Nintendo	September 18, 1987	3,000,000	[10]
18	*Metroid*	Nintendo R&D1[c]	Nintendo	August 6, 1986	2,730,000	[2]
19	*Super Mario Bros. 2* (Japanese version)	Nintendo R&D4	Nintendo	June 3, 1986	2,650,000	[2]

Nes Sprites



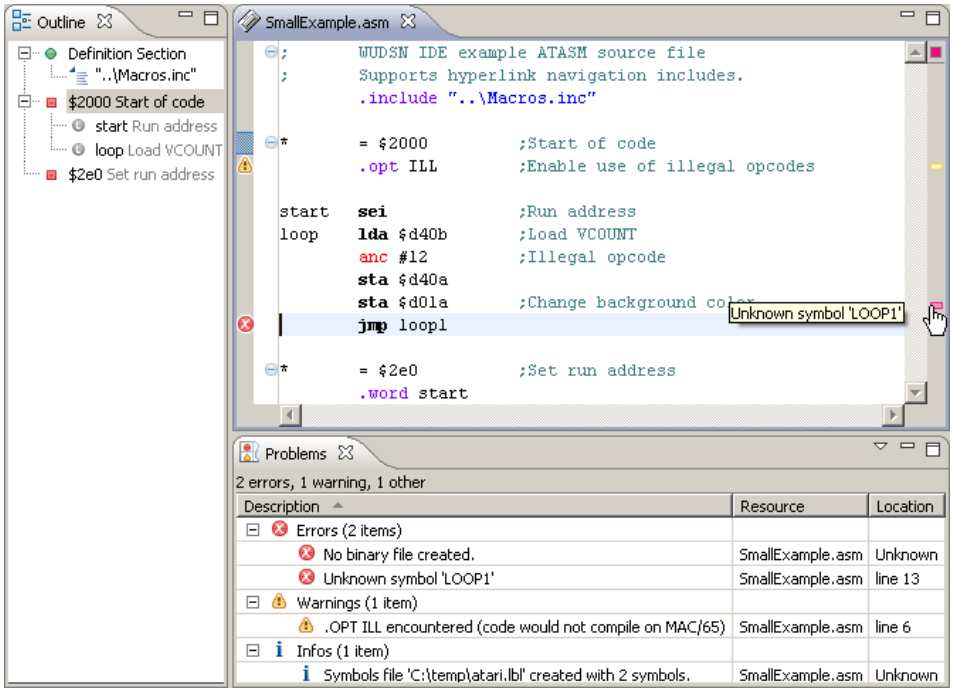
Controllers

Development Tools



Development Tools

- 6502 Assembly Language

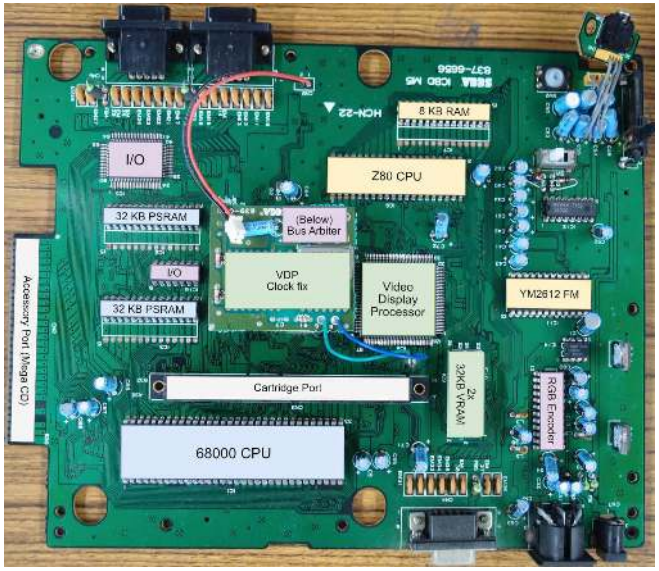


Forth Generation 16-Bit

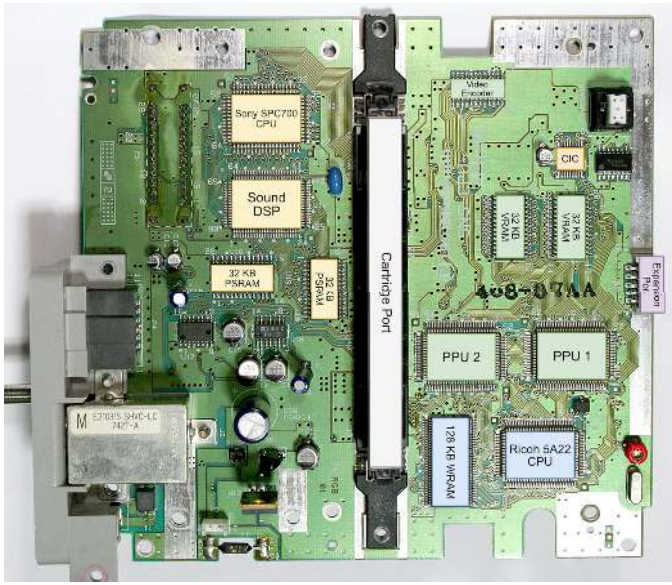
Sega Mega Drive
1988

Super Nintendo
1991

Hardware



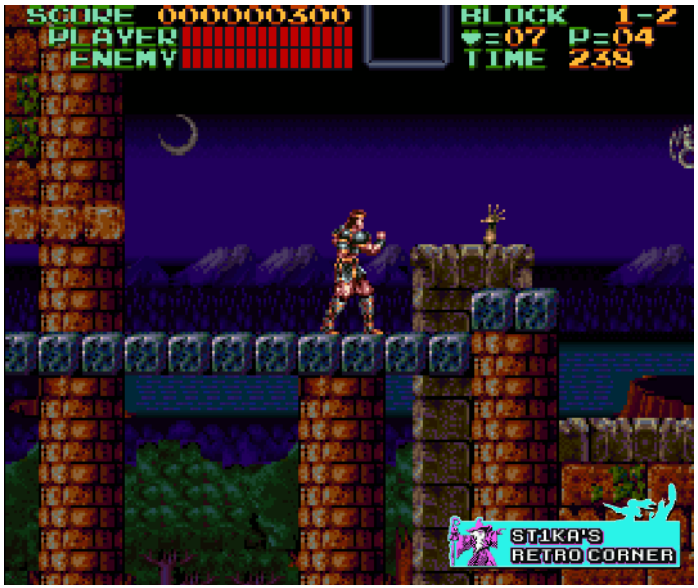
Sega Mega Drive



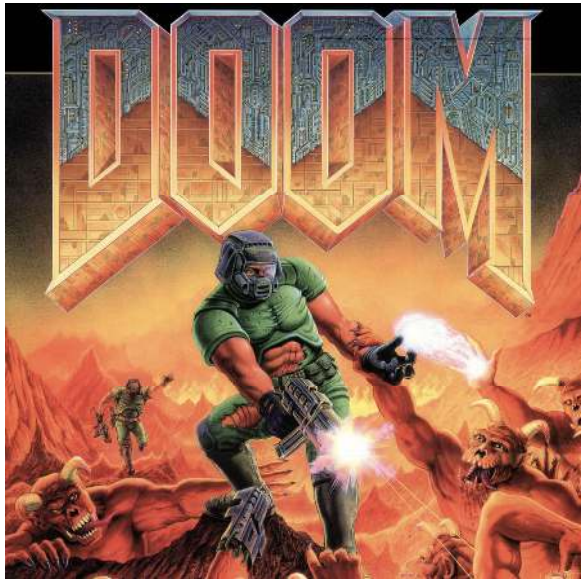
Super Nintendo

SNES GAMES


MARIO
×27
TIME
357
1000


SCORE 000000300
PLAYER
ENEMY
BLOCK 1-2
♥=07 P=04
TIME 238
STIKA'S
RETRO CORNER

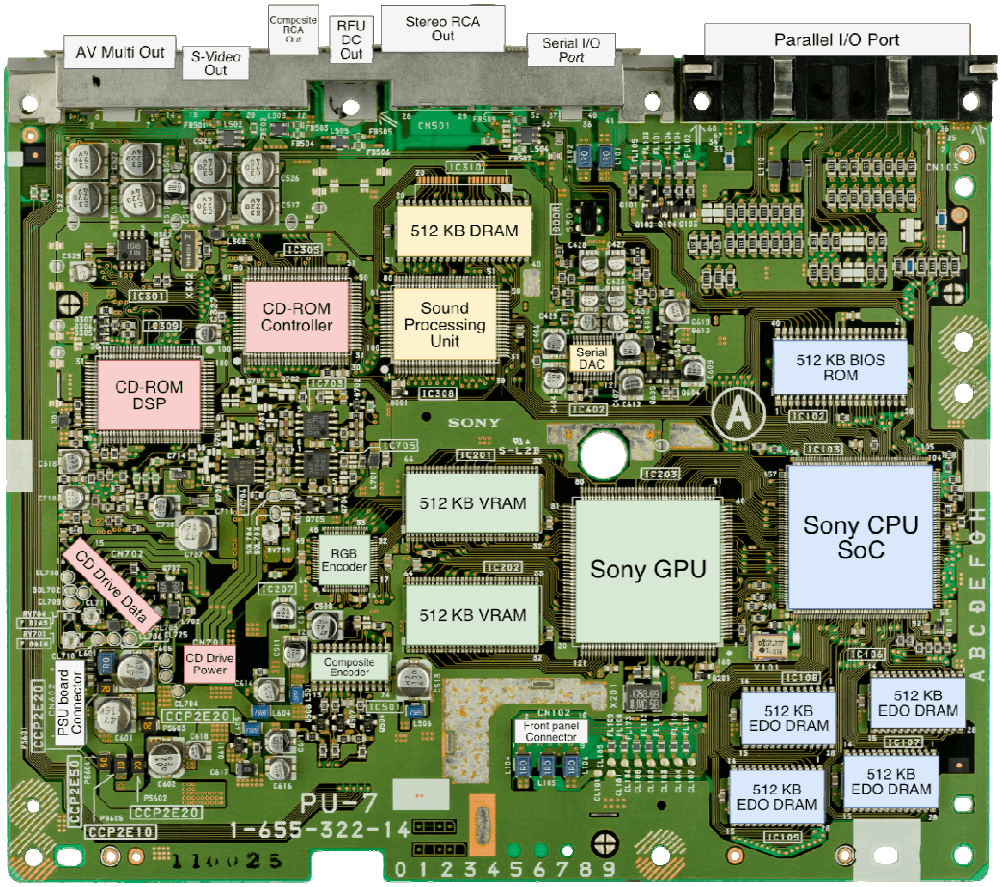
PC Enters The scene - 3D Games



Fifth Generation – 3D World

- Playstation
- Released in 1994
- 120 million units sold
- Games plays on CDs (Compact Discs)

3D Power House



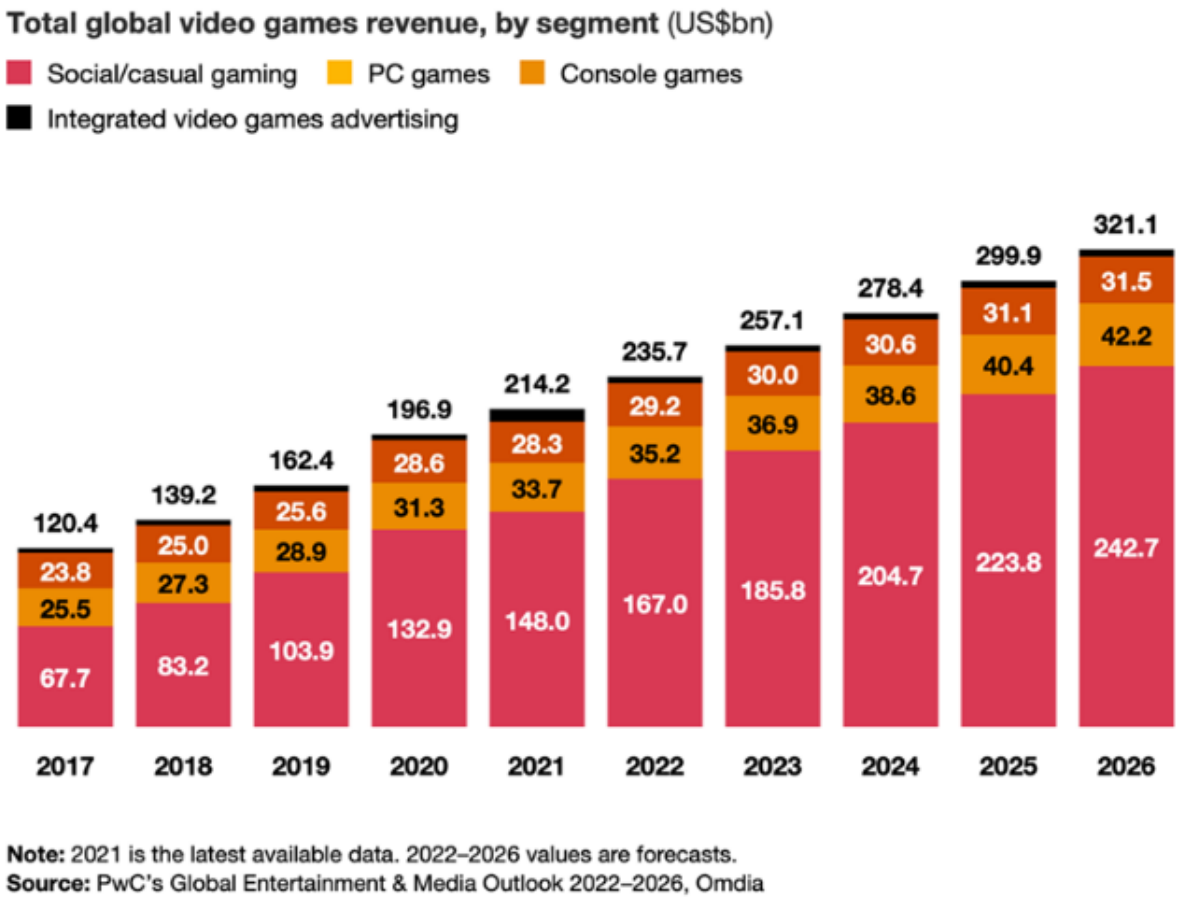
Games

Sixth Generation

PlayStation 2 (2000)

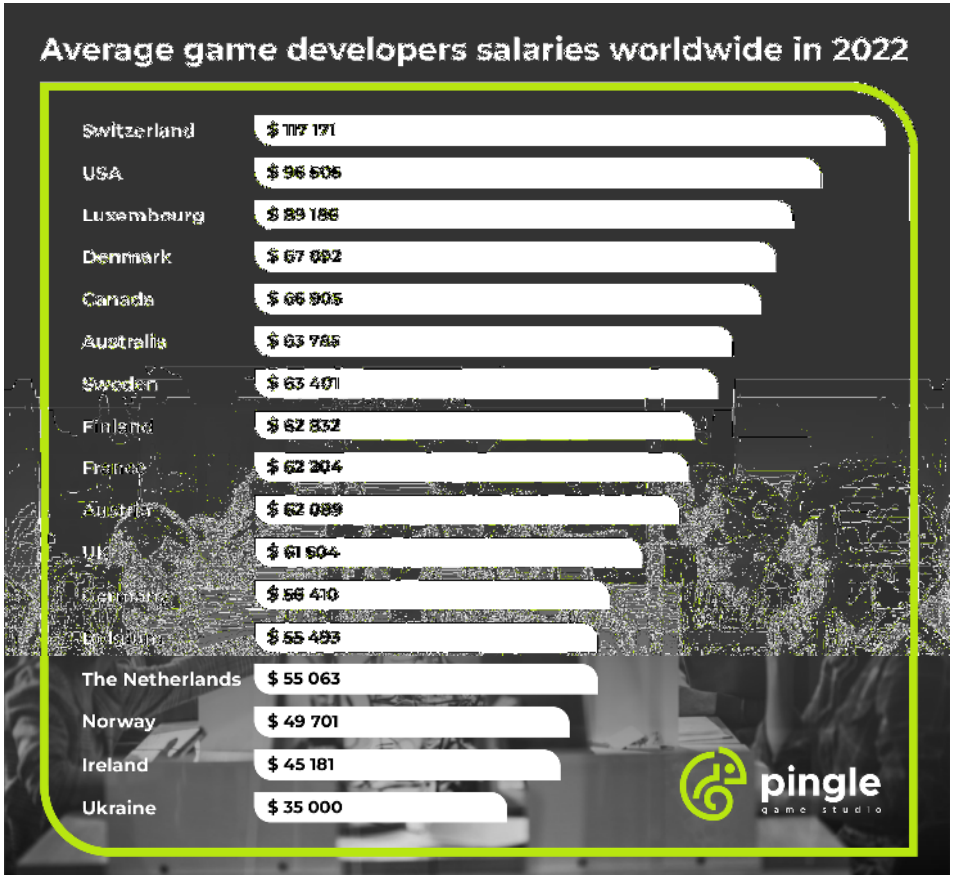
XBOX (2001)

Video Game Industry Keeps Growing



Note: 2021 is the latest available data. 2022–2026 values are forecasts.
Source: PwC's Global Entertainment & Media Outlook 2022–2026, Omdia

Game Developers Salaries

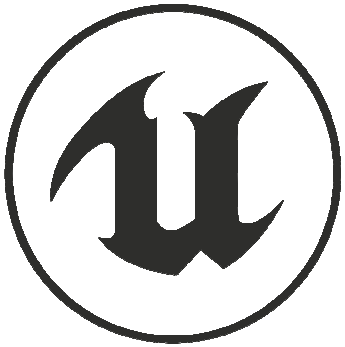


Types of Jobs

- Game Designer
- **Game Programmer**
- **AI Programmer**
- System Designer
- Level Designer
- Game Artist (Character – environment- asset etc.)

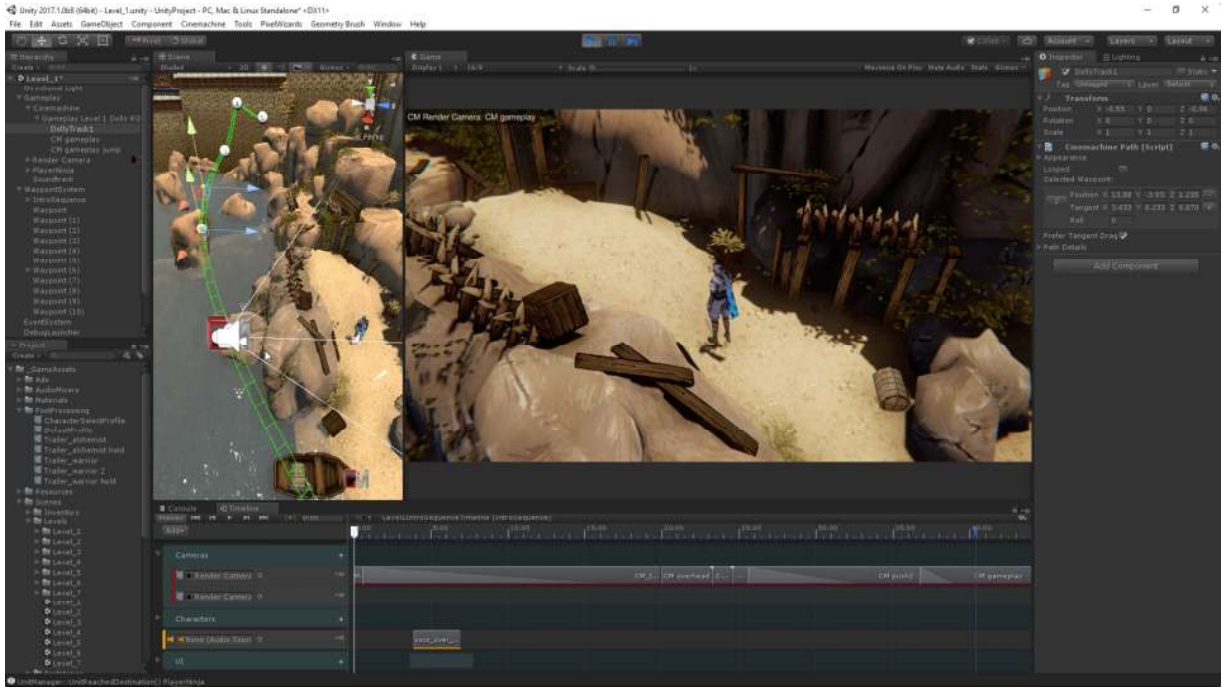
Development Tools

- Game Engines



Unity

- Free to use
- Easier to learn
- Support Multiple Platform



Unreal

- Free to use
- Little bit harder to use
- Support Multiple Platform
- Can handle Much More Complex Games