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Pong

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      For other uses, see Pong (disambiguation).

Pong (marketed as ***PONG***) is one of the earliest arcade video games and the very first sports arcade video game. It is a tennis sports game featuring simple two-dimensional graphics. While other arcade video games such as *Computer Space* came before it, *Pong* was one of the first video games to reach mainstream popularity. The aim is to defeat an opponent in a simulated table-tennis game by earning a higher score. The game was originally manufactured by Atari Incorporated (Atari), which released it in 1972. Allan Alcorn created *Pong* as a training exercise assigned to him by Atari co-founder Nolan Bushnell. Bushnell based the idea on an electronic ping-pong game included in the Magnavox Odyssey, which later resulted in a lawsuit against Atari. Surprised by the quality of Alcorn's work, Bushnell and Atari co-founder Ted Dabney decided to manufacture the game.

Pong quickly became a success and is the first commercially successful arcade video game machine, which helped to establish the video game industry along with the first home console, the Magnavox Odyssey. Soon after its release, several companies began producing games that copied *Pong*'s gameplay, and eventually released new types of games. As a result, Atari encouraged its staff to produce

Pong

An upright cabinet of *Pong* signed by Pong creator Allan Alcorn.

Developer(s)	Atari Inc.
Publisher(s)	Atari Inc.
Designer(s)	Allan Alcorn
Series	*Pong*
Platform(s)	Arcade
Release date(s)	November 29, 1972[1]

several sequels that built upon the original's gameplay by adding new features. During the 1975 Christmas season, Atari released a home version of *Pong* exclusively through Sears retail stores. It was also a commercial success and led to numerous copies. The game has been remade on numerous home and portable platforms following its release. *Pong* has been referenced and parodied in multiple television shows and video games, and has been a part of several video game and cultural exhibitions.

Cabinet	Upright
CPU	Discrete
Sound	Monaural (Mono)
Display	Vertical orientation, black-and-white raster display, standard resolution

Contents

Gameplay

Pong is a two-dimensional sports game that simulates table tennis. The player controls an in-game paddle by moving it vertically across the left side of the screen, and can compete against either a computer-controlled opponent or another player controlling a second paddle on the opposing side. Players use the paddles to hit a ball back and forth. The aim is for each player to reach eleven points before the opponent; points are earned when one fails to return the ball to the other.[2][3][4]

Development and history

See also: Origin of Atari Inc.

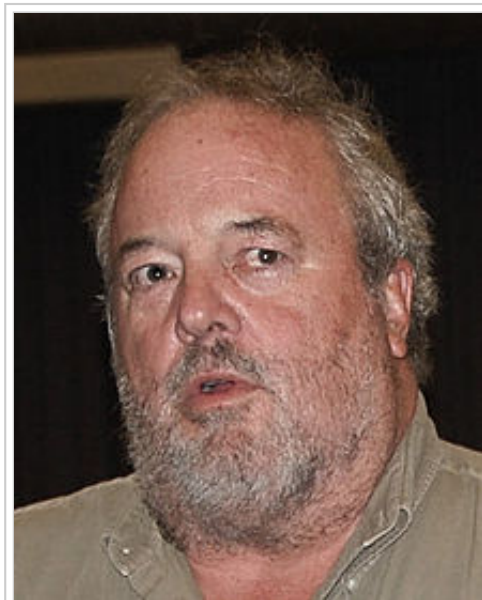*Pong* was the first game developed by Atari Inc. (incorporated in June 1972 by Nolan Bushnell and Ted Dabney).[5][6] After producing *Computer Space*, Bushnell decided to form a company to produce more games by licensing ideas to other companies. The first contract was with Bally Manufacturing Corporation for a driving game.[4][7] Soon after the founding, Bushnell hired Allan Alcorn because of his experience with electrical engineering and computer science; Bushnell and Dabney also had previously worked with him at Ampex. Prior to working at Atari, Alcorn had no experience with video games.[8] To acclimate Alcorn to creating games, Bushnell gave him a project secretly meant to be a warm-up exercise.[8][9] Bushnell told Alcorn that he had a contract with General Electric for a product, and asked Alcorn to create a simple game with one moving spot, two paddles, and digits for score keeping.[8] In 2011, Bushnell stated that the game was inspired by previous versions of electronic tennis he had played before; Bushnell played a version on a PDP-1 computer in 1964 while attending college.[10] However, Alcorn has claimed it was in direct response to Bushnell's viewing of the Magnavox Odyssey's Tennis game.[8] In May 1972, Bushnell had visited the Magnavox Profit Caravan in Burlingame, California where he played the Magnavox Odyssey demonstration, specifically the table tennis game.[11][12] Though he thought the game lacked quality, seeing it prompted Bushnell to assign the project to Alcorn.[10]

The two paddles return the ball back and forth. The score is kept by the numbers (0 and 1) at the top of the screen.

Atari engineer Allan Alcorn designed and built *Pong* as a training exercise.

Alcorn first examined Bushnell's schematics for *Computer Space*, but found them to be illegible. He went on to create his own designs based on his knowledge of transistor–transistor logic and Bushnell's game. Feeling the basic game was too boring, Alcorn added features to give the game more appeal. He divided the paddle into eight segments to change the ball's angle of return. For example, the center segments return the ball a 90° angle in relation to the paddle, while the outer segments return the ball at smaller angles. He also made the ball accelerate the longer it remained in play; missing the ball reset the speed.[4] Another feature was that the in-game paddles were unable to reach the top of screen. This was caused by a simple circuit that had an inherent defect. Instead of dedicating time to fixing the defect, Alcorn decided it gave the game more difficulty and helped limit the time the game could be played; he imagined two skilled players being able to play forever otherwise.[8]

Three months into development, Bushnell told Alcorn he wanted the game to feature realistic sound effects and a roaring crowd.[8][13] Dabney wanted the game to "boo" and "hiss" when a player lost a round. Alcorn had limited space available for the necessary electronics and was unaware of how to create such sounds with digital circuits. After inspecting the sync generator, he discovered that it could generate different tones and used those for the game's sound effects.[4][8] To construct the prototype, Alcorn purchased a $75 Hitachi black-and-white television set from a local store, placed it into a 4-foot (1.2 m) wooden cabinet, and soldered the wires into boards to create the necessary circuitry. The prototype impressed Bushnell and Dabney so much that they felt it could be a profitable product and decided to test its marketability.[4]

In August 1972, Bushnell and Alcorn installed the *Pong* prototype at a local bar, Andy Capp's Tavern. They selected the bar because of their good working relation with the bar's manager, Bill Gattis;[14] Atari supplied pinball machines to Gattis.[6] Bushnell and Alcorn placed the prototype on one of the tables near the other entertainment machines: a jukebox, pinball machines, and *Computer Space*. The game was well received the first night and its popularity continued to grow over the next one and a half weeks. Bushnell then went on a business trip to Chicago to demonstrate *Pong* to executives at Bally and Midway Manufacturing;[14] he intended to use *Pong* to fulfill his contract with Bally, rather than the driving game.[4][5] A few days later,

the prototype began exhibiting technical issues and Gattis contacted Alcorn to fix it. Upon inspecting the machine, Alcorn discovered that the problem was the coin mechanism was overflowing with quarters.[14]

After hearing about the game's success, Bushnell decided there would be more profit for Atari to manufacture the game rather than license it, but the interest of Bally and Midway had already been piqued.[5][14] Bushnell decided to inform each of the two groups that the other was uninterested—Bushnell told the Bally executives that the Midway executives did not want it and vice versa—to preserve the relationships for future dealings. Upon hearing Bushnell's comment, the two groups declined his offer.[14] Bushnell had difficulty finding financial backing for *Pong*; banks viewed it as a variant of pinball, which at the time the general public associated with the Mafia. Atari eventually obtained a line of credit from Wells Fargo that it used to expand its facilities to house an assembly line.[15] The company announced *Pong* on 29 November 1972.[16] Management sought assembly workers at the local unemployment office, but was unable to keep up with demand. The first arcade cabinets produced were assembled very slowly, about ten machines a day, many of which failed quality testing. Atari eventually streamlined the process and began producing the game in greater quantities.[15] By 1973, they began shipping *Pong* to other countries with the aid of foreign partners.[17]

Home version

After the success of *Pong*, Bushnell pushed his employees to create new products.[5][18] In 1974, Atari engineer Harold Lee proposed a home version of *Pong* that would connect to a television: *Home Pong*. The system began development under the codename *Darlene*, named after an attractive female employee at Atari. Alcorn worked with Lee to develop the designs and prototype, and based them on the same digital technology used in their arcade games. The two worked in shifts to save time and money; Lee worked on the design's logic during the day, while Alcorn debugged the designs in the

Atari's *Home Pong* console, released through Sears in 1975

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