

# East Coast Games - Game Development Glossary

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## 2D Game

A game that only has X and Y coordinates for its objects and characters like Tetris and Pac-Man.

## 2.5D Game

A game that has X, Y and Z for it's coordinates but only a small amount of Z coordinates. An example would be Doom or Wolfenstein [3D](#). These games had three possible Z coordinates for every X and Y coordinate pair. The Z coordinates would be for the floor, ceiling, and an object or player. Because there was only one Z coordinate for every X and Y pair that could hold an object or character, no objects or players could be above or below each other. This also meant that no two objects or characters could have the same X and Y coordinate. (See also [2D](#))

## 3D Game

A game whose objects and characters can have an X, Y and Z coordinate. Computers were not able to run reliable 3D games until the 100 MHz barrier was broken. Consoles were not able to run reliable 3D games until the Nintendo 64 was released. Before the 3D game developers had to make [2D](#) and [2.5D](#) games. An early 3D game example is the original Quake.

## 3D Model

[3D game](#) artists need to make 3D art. To do this they employ tools like 3D studio max. Before 3D games, developers used [sprites](#) to imitate 3D objects and players.

## 3D Shooter

This is a genre of [3D action](#) games where the object is to shoot other characters. (See also [FPS](#))

## A

### A\*

A\* is a [game artificial intelligence](#) algorithm used to determine the fastest way for a computer player to get from one point to another.

### AAA Games

AAA title is a popular game.

### Action Game

This is a genre of game were players uses their eye and hand coordination to win. [Sports games](#) and [3D shooter](#) games are types of action games.

### Alpha

An alpha version of a game is a version where you can play through a level of the game from start to finish. (See also [Beta](#))

### Artificial Intelligence

(See [Game AI](#))

### AutoPlay

A 32-bit Windows feature that allows software developers to automatically launch programs when a CD is inserted into the CD drive.

## B

### Beta

A beta version of a game is complete except for last minute tweaks, tuning and bug fixes. (See also [Alpha](#))

### Blit

A blit is a memory copy operation from a [surface](#) to the video card.

## C

### C

A procedural compiled programming language developed by Dennis Ritchie at Bell Labs. It was originally called B.

### C++

A compiled programming language developed by Bjourne Stroustrup at Bell Labs that is an enhanced version of [C](#). Its programs tend to be slightly slower than [C](#) and about 15% larger than [C](#) but the code is object-oriented.

### Circular Buffer

A circular buffer is used to store sounds in memory to be output to the sound card and speaker(s). [Static buffers](#) and [streaming buffers](#) are two examples of circular buffers.

### Client/Server

In these games, the players connect to one server where they download the game world from and upload update to. As long as the server is owned by a trusted party and isn't hacked, it is very hard for players to cheat.

### Color Key

A color key is used to separate one color from an image like how an actor or weatherman is separated from a blue screen. The separated image can then have the color replaced with the visible game world.

## D

### Dead Reckoning

This is a formula to determine where other players and objects are by calculating their positions based on the velocity and last location received. This information will be replaced when other players change velocity and send their new velocity.

### Dreamcast

The Dreamcast is the last of [Sega](#)'s home entertainment systems. From now on [Sega](#) will be a third-party software developer. They hope to grow larger than [EA](#), who is currently the largest third party game developer, to become the largest third party game developer. The Dreamcast competed with [Nintendo 64](#) and the [Sony Playstation](#).

### DirectX

DirectX is an [SDK](#) by Microsoft that is used to quickly access hardware.

## E

### E3

(See [Electronic Entertainment Expo](#))

### Electronic Arts

Electronic Arts (EA) is the world's largest third party game developer.

### Electronic Entertainment Expo

A yearly exposition of the newest games, consoles, and tools for electronic entertainment.

### Emergence

A valid game strategy that was not expected by the game designers.

### Emulator

Emulators are programs used to emulate games that were made for other game systems or computers.

### Engine

An engine is the code that makes a game run. An engine can be used for multiple games by using different art and data sets. The Quake 3 engine is a great example that was not only used by the game Quake 3 Arena but also by Star Trek Elite Forces and Alice. A good engine can often be licensed to other developers.

## F

### First Person Shooter

The first person shooter (FPS) is a genre of games where you see through the eyes of the protagonist. The games often have puzzles to solve but most of the [gameplay](#) is about killing opponents. (See also [3D Shooter](#))

### Fox

To cancel a game due to legal issues relating to possible infringement of intellectual property by the game developers. The term is derived from 20th Century Fox Corporation causing a game mod to be cancelled.

## G

### Game Artificial Intelligence

Game artificial intelligence or AI is logic used to determine a computer players decisions. (See also [A\\*](#), [Team AI](#), [LOD AI](#))

### Game Boy

The Nintendo Game Boy was Nintendo's first hand-held game system. The system had a back and white screen. At the time it was released handheld game systems could only play one game so the Game Boy quickly became popular because it could be used to play any game built on the Game Boy cartridge.

### Game Boy Advanced

Game Boy Advanced (GBA) is being released in the US in 2001. This is Nintendo's newest handheld system. It has color and has as much power as the [Super Nintendo](#). Many [Super Nintendo](#) games are being [ported](#) to the Game Boy Advanced.

### Game Boy Color

The Game Boy Color (GBC) is the first color handheld game system that Nintendo created. Many custom versions were sold that featured characters like Link on them. This system is the same as the original [Game Boy](#) except that the games are in color. Games from the original [Game Boy](#) can be played on the system in color because [Game Boy](#) developers all used the same shading methods.

### GameCube

This is Nintendo's latest game system. [GBA](#) systems can actually be used as controllers for the GameCube allowing the players to have a private screen.

### Game Designer

Game designers tend to have the hardest to define role. They work with the [level designers](#) but aren't in charge of the levels. They mostly work on tuning the game in general. They work on parts of the game that are the same across all levels.

### Game Developer

A person who develops games.

### Game Development Conference

A yearly conference where developers meet to learn and share knowledge about game development.

### Gameplay

The important and hopefully entertaining interactions between a player and the game world.

### Gamer

A person who plays games.

### GDC

(See [Game Development Conference](#))

## H

### Hardware

Hardware is the physical parts to a computer or console. CD-ROMs, hard-drives and monitors are all examples of hardware.

## I

## **Installers**

Installers are programs that setup and copy game data onto a player's computer. Because consoles are run off CD's and cartridges, they don't need installers.

## **J**

### **Java**

An interpreted object-oriented programming language that is based off [C/C++](#) syntax. It's generally slower than compiled languages but the code can be run on any computer with a Java interpreter.

### **JavaScript**

A scripting language that is mostly used for web development. Natural Disaster is being developed in JavaScript.

### **Joystick**

A [hardware](#) input device used to operate games.

## **L**

### **Level Designer**

A level designer is a designer who specifically works on levels or maps. Although the theme of each level and map is taken from the game design document the level designer still has a ton of work to do to make a great level. (See also [Game Designer](#))

### **Level Editor**

A level editor is used by level designers and artists to create levels for games. Most level editors are to complicated and user-unfriendly to release to the public but some like Quake's WorldCraft and StarCraft's map editor have allowed gamers to make their own custom map. A level designer for a [FPS](#) generally needs expertise in [3D modeling](#) and architecture.

### **Level of Detail Artificial Intelligence**

Level of Detail (LOD) [AI](#) changes it's algorithms based on the level of detail needed. An example would be a driving game like the Getaway. Players can drive through several square miles of London. In the game, only a small part of the game world is viewable to the player so all the rest can have simple AI. The simple AI being random chooses on ways to turn. In the area that the player can see the AI will need the computer players to watch their speed, driving signals and other behavior so that it seems realistic.

### **Linearity**

The sequential order of events or levels. Linearity is directly related to interactivity. A movie is linear, it has a begining a middle and an end. Generally a movie is only viewed in it's linear order. This makes it non-interactive. In most games a story is intended and some linearity is needed. For example, in StarCraft you can't play the protoss levels unless you have beaten the human levels. This allows plot to be added to the game. (See Also [Non-linearity](#))

### **Lobbies**

Lobbies are places where players can meet to start and create game sessions. Battle.net and Microsoft's Gaming Zone are examples of lobbies.

## **M**

### **Metagaming**

Metagaming is a part of the game that adds replay value but does not effect the object of the game. An example of metagaming is a chat system that is incorporated into the game. See the game is Yahoo Chess. If you make friends on Yahoo Chess, you'll want to return to see them again.

### **MIP-Mapping**

A MIP-Map is a file with multiple images of the same object. These images are different sizes. The different sizes are used to reduce the amount of memory used if the object was far away by using the smallest image of the object that would be as small or larger then how the image should look in the game.

### **Mutex**

A programming tool used to prevent the launch of multiple copies of the same game.

## N

### Network Game

A multi-player game that is played over a computer network.

### Nintendo

The original Nintendo was one of the first and most popular home entertainment systems. It featured classic games like the original Zelda and Super Mario Brothers.

### Nintendo 64

The Nintendo 64 was the system that came before the [GameCube](#) but after [SNES](#). It was a 32-bit home gaming system with two processors. This was Nintendo's last home entertainment system to use cartridges.

### Non-Linearity

[Linearity](#) is sequential action. A movie is linear. Non-linearity designs allow players to face levels or challenges in any order.

## O

### OpenGL

OpenGL is a graphics [SDK](#) for PCs and Macs used to develop 3D games like Quake.

### Overlay

An image can be overlaid over other images. An overlay image will not change often and will be placed over the game view. An example of an overlay is a resource count and health information that is displayed at the top, bottom, or side of the screen over the game world.

## P

### Peer to Peer

A multiplayer network game where all computers store a copy of the game world. An example is Warcraft. These computers in a peer to peer game can prevent cheating if they detect that one computer's game world is very different from the other computers' game worlds.

### Platformer

This is a genre of games that was made famous by Super Mario Brothers. In a platformer a player must jump throughout the game to kill monsters and to travel through the level.

### Playstation

The original Sony Playstation was Sony's first home entertainment system. It was a large competitor of the [Nintendo 64](#). Unlike most Nintendo Games, Playstation games often featured violence. Playstation games were on CDs instead of cartridges.

### Playstation 2

The Playstation 2 (PS2) is Sony's latest home entertainment system. The games are on DVDs instead of CDs. Sony was able to release the PS2 before Nintendo could release the [GameCube](#).

### Polycount

The number of polygons in a [3D model](#). The higher the polycount is the more memory and processing power is needed to display it. Artists and level designers have to make sure they don't create a polycount that's too high for the target machine to run.

### Port

To port a game is to take it from its original system, modify its code, and art assets to be played on another system. Many games from [EA](#) like Tony Hawk are ported to multiple systems.

## Q

### QuickBASIC

A version of BASIC developed by Microsoft's Bill Gates and Paul Allen. QBASIC stands for Quick Beginners All-purpose Instruction Code.

## R

### **Rasterization**

The creation of a 3D image.

### **Real-Time Strategy Games**

This is genre of game first seen in Dune 2. Real-Time Strategy (RTS) games are strategy games that don't use turns. Two or more players can attack, defend or build simultaneously. (See also [Turn-Based strategy games](#))

### **Role-Playing Game**

This is a genre of game that has been around since the beginning of computer gaming. In these games, a player will use their character to defeat quests. These games are comparable to dungeons and dragons. All of the Final Fantasy games and Myst are examples of popular RPG games.

## S

### **SEGA**

The developers of the [Sega Dreamcast](#), Sega Genesis and Sega Saturn consoles. SEGA decided in 2001 to stop making consoles and instead just make games as a third-party. Their games include Sonic the Hedgehog and Crazy Taxi.

### **Side-Scrolling Game**

A [2D](#) game that most of the movement through a level is done by moving your character left or right. The original Super Mario brothers and Sonic the hedgehog games are both side-scrollers.

### **SNES**

Super Nintendo Entertainment System. (See Super Nintendo)

### **Sony**

The inventors of the [Playstation](#) series of consoles. They also develop several games including EverQuest.

### **Sports Games**

A genre of game that imitates a sport. The first sports game was Pong. Today there are games that imitate football, hockey, basketball, racing, and soccer, skate boarding, skiing, and boating and several other sports.

### **Sprite**

Several 2D graphics images of one object or character for each of it's possible positions and states. The game engine displays the correct image based on the object's or character's position.

### **Software Development Kit**

A software development kit or SDK is a tool that programmers use to develop games without having to write hardware or hardware emulation code from scratch. Instead they can use function calls to the SDK library of pre-defined hardware and hardware emulation code. [DirectX](#) and [OpenGL](#) are both popular SDKs that game programmers use.

### **Static Buffer**

A static buffer is a [circular buffer](#) that will hold a sound effect, like thunder.

### **Streaming Buffer**

A [circular buffer](#) that only holds a small portion of a music file. These are generally used to store background music. As the buffered sound is output, it is then replaced with the music to be played.

### **Super Nintendo**

The Super Nintendo Entertainment System (SNES) came between the original [Nintendo](#) and the [Nintendo 64](#).

### **Surface**

A surface is a place in memory to draw a screen before [blitting](#). To avoid [tearing](#) finish a surface before you [blit](#) it.

## T

### **TCP/IP**

TCP/IP stands for Transfer Control Protocol and Internet Protocol. It is used to send data across LANs, WANs, the Internet, and dial-up connections. TCP/IP guarantees delivery of all packets in their entirety in the order they sent. Because of all the error checking it does and because small packets sent after large packets will make it to the destination first [UDP](#) is often used for network games.

### **Team Artificial Intelligence**

This is [AI](#) that allows a computer player to play nice with its computer or human teammates.

### **Tearing**

Tearing occurs when a [surface](#) is [blit](#) before it has been completed. This causes objects or parts of objects to be visible on the screen in multiple places at once.

### **Turn-based Strategy Games**

These are strategy games where people take turns, like chess and unlike [RTS games](#).

## **U**

### **UDP**

UDP stands for User Datagram Protocol. UDP is faster than [TCP/IP](#) because there is no error checking but packets are often lost, sent out of order and not sent in their entirety. Since computers are so fast in comparison to networks, it's usually best to have your game do all the error checking.

## **V**

### **Vertex**

A [3D](#) location where two or more lines meet.

## **W**

### **Web game**

A game played on a web page. These are usually made in HTML, Java, JavaScript, Flash, Shockwave, or Visual BASIC.

## **X**

### **X-Box**

A console created by Microsoft.

## **Z**

### **Z-Buffering**

This is a technique to determine which objects are closest to the camera so that the closest object with a Z coordinate will not be overwritten by one behind it.

 Amazon Honor System