

Open Source Gaming - Free FUN!

Joseph Guarino
Owner/Sr. Consultant Evolutionary IT
www.evolutionaryit.com



Objectives

?



Objectives

FUN!



What is that!?

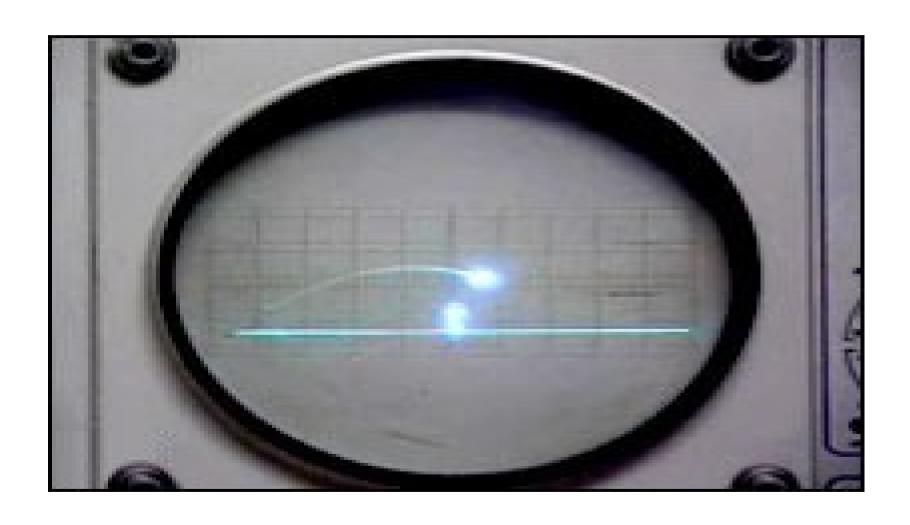
- 1. Something that brings us joy, laughter or amusement.
- 2. Something we need more of in our complex adult lives..
- 3. Video games!



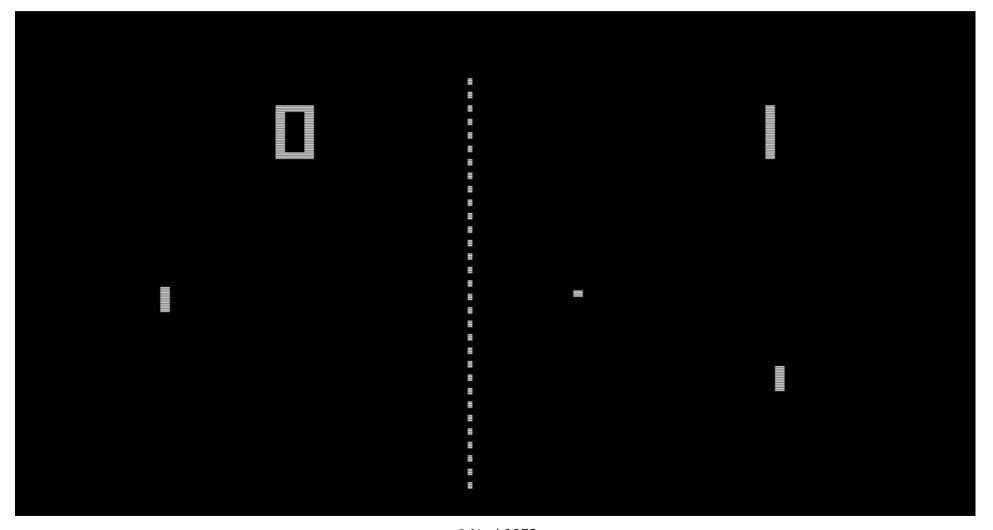
Let's Play!

Identify the game.



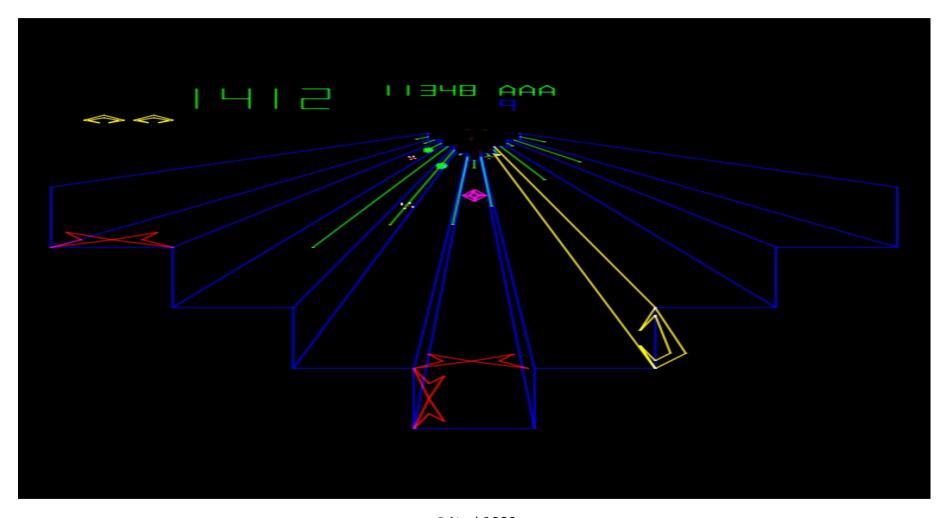






©Atari 1972





©Atari 1980





©Namco 1980









© ID Software 1993





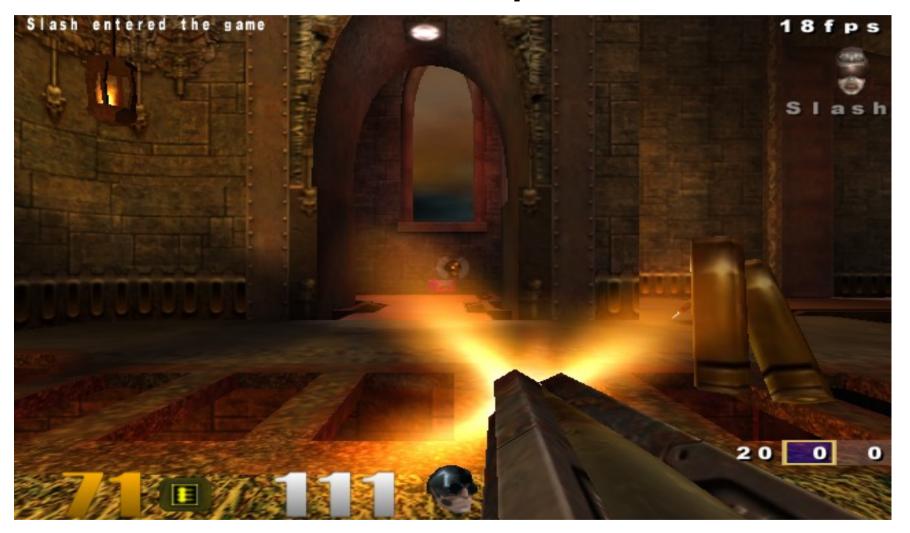
© Apogee 1996 BTW... I'm still waiting FOREVER!





©Jaleco 1998





© ID Software 1999





© Epic Games 2004





© Epic Games 2007



0k...

Now some real objectives...



Objectives

- What the heck is Open Source
- Top Open Source Games in nearly every genre
- FOSS server, security, networking and virtualization options
- FOSS game server example
- Industry overview and challenges
- Science and value of Gaming



Who am I?

- Joseph Guarino
- Working in IT for last 15 years: Systems,
 Network, Security Admin, Technical Marketing,
 Project Management, IT Management
- CEO/Sr. IT consultant with my own firm Evolutionary IT
- CISSP, LPIC, MCSE, PMP
- www.evolutionaryit.com



Defining FOSS

Just to clear the air and clarify as this is a fun, desktop focused presentation for everyone



What is FOSS/FLOSS?

- Free and Open Source Software
- Alternative term to describe software spectrum from free to open.
- FLOSS or Free/Libre/Open-Source Software.
- Libre is used to clarify the ambiguity of the word free in English.



What is FOSS?

- FOSS (Free and Open Source Software) is a software licensing model that allows anyone the liberty to use, extend and distribute the software as they see fit.
- FOSS is unique as well in that it produces innovation quickly by the very concept of open, cooperative, collaborative efforts.
- Commercial software is much more restrictive.



Types of FOSS

The licensing spectrum..



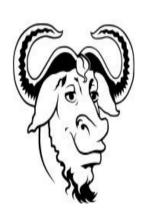
Many FOSS Licenses

- There are many FOSS licenses each which allow different rights and responsibilities
- Most popular are GNU General Public License, GNU Lesser General Public License, BSD License, Mozilla Public License, MIT License and the Apache License.
- OSI Licenses OSI Software Definition http://opensource.org/licenses/
- FSF Licenses Free Software Definition http://www.gnu.org/licenses/











What FOSS is NOT

- ≠ Freeware
- ≠ Shareware
- ≠ Public Domain Software
- # Malware, spyware, adware, badware etc. Community standards generally prohibit this.



Common FOSS Gaming

Misperceptions that we will hopefully put to rest...



Misperception

You have to spend lots of money to play quality games.
There are no good open source video games!?



FOSS Gaming Genre's

In every existing gaming category there are amazing FOSS games.



Exemplary FOSS Game

Strategy

- involve planning and thinking...



FreeCiv



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FreeCiv

- FreeCiv is a TBS (Turn based strategy) game where you build a civilization.
- Much like Civilization®
- Support for Internet/LAN play with up to 30 players.
- GNU/GPL
- Single/multiplayer
- Available on most platforms.



Battle for Wesnoth



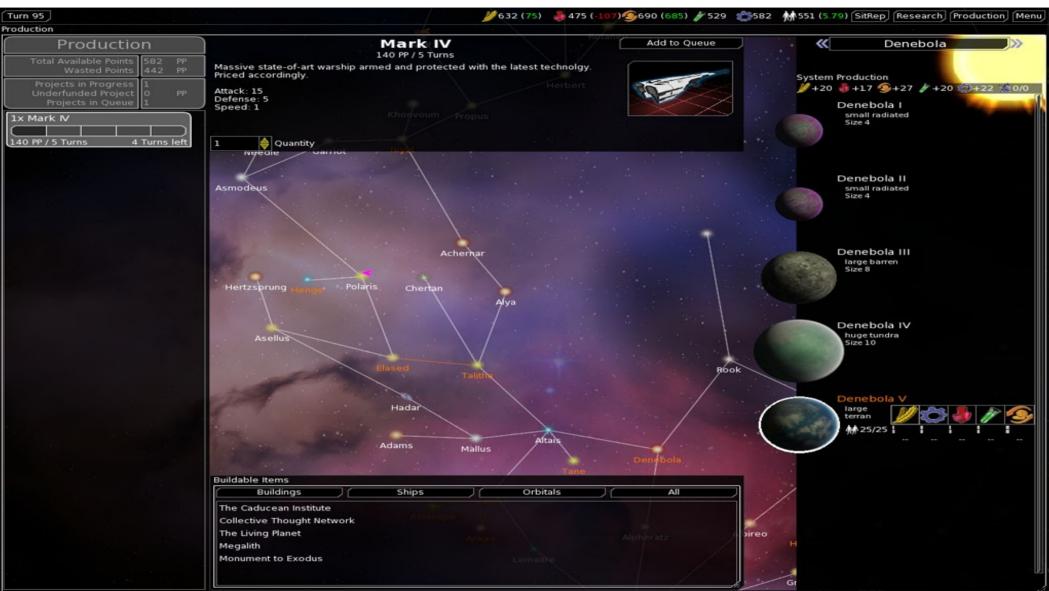


Battle for Wesnoth

- Battle for Wesnoth is a TBS (Turn based strategy) with a fantasy style environment.
- Players build armies of humans, elves, dwarves, orcs and trolls to battle for Wesnoth.
- GNU/GPL free software
- Single/multiplayer
- Available on most platforms.



FreeOrion





FreeOrion

- FreeOrion is a game of galactic conquest in the spirit of Master of Orion.
- GNU/GPL
- Single/Multiplayer
- Available on most platforms



RTS

Real-time strategy - strategic and not turn based...



Warzone 2100





Warzone 2100

- Warzone 2100 is a RTS game about post nuclear war late 21's century where survivors, struggle to survive. Some scavenge and others called "The Project" seek to rebuild.
- GNU/GPL
- Single/Multiplayer
- Available on most platforms.



Spring



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Spring

- Spring is a Open Source 3d engine behind a host of amazing games. P.U.R.E. Gundam RTS, Star Wars: Imperial Winter, Evolution RTS, Spring: 1944, Kernel Panic, Expand and Exterminate, Complete Annihilation, XTA.
- GNU/GPL
- Focus on multiplayer with limited single player.
- Available on most platforms



UFO: Alien Invasion





UFO: Alien Invasion

- UFO: Alien Invasion is a RTS game where you battle invading aliens for control of planet earth.
- GNU/GPL
- Single and multiplayer
- Available on most platforms.



Platform Games

Platformers

- characterized by jumping to and from platforms...



Secret Maryo Chronicles



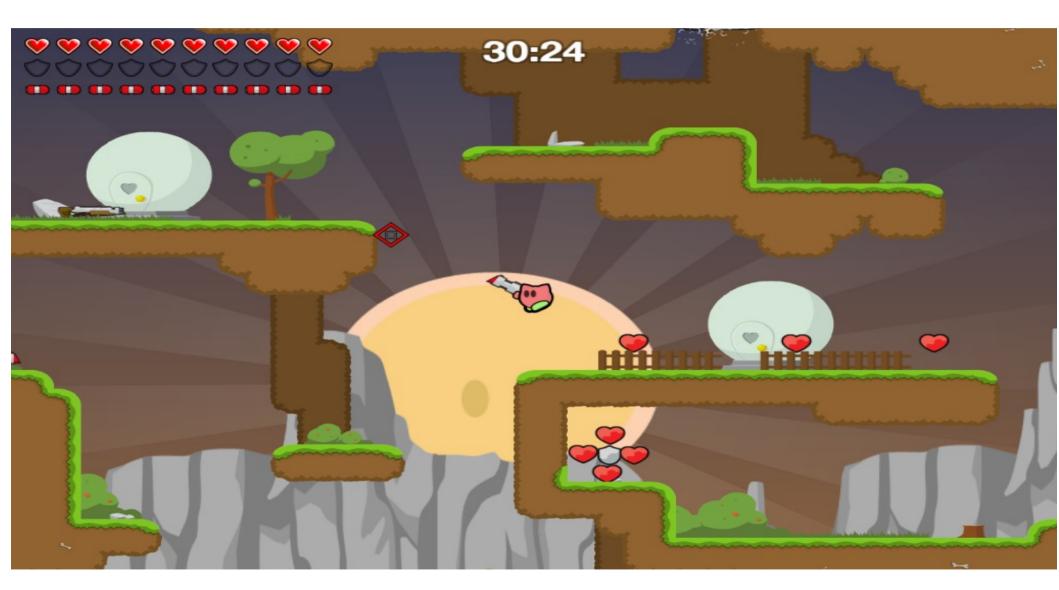


Secret Maryo Chronicles

- Secret Maryo Chronicles is a 2d platformer modeled after Super Mario.
- GNU/GPL
- Single Player
- Available on most platforms.



Teeworlds





Teeworlds

- Teeworlds is a cartoon themed platformer that plays like a classic shooter.
- Cute, clean and fun.
- GNU GPL free software
- Multiplayer
- Available on most platforms.



SuperTux





SuperTux

- SuperTux is a fun platformer inspired by SuperMario.
- You play Tux the lovable Linux mascot battling enemies and arctic conditions to victory.
- GNU/GPL
- Single Player
- Available on most platforms.



Vehicle Simulation

Vehicle Simulation - realistic interpretations..



FlightGear



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FlightGear

- FlightGear is a flight simulation tool/game. Over 15 default planes with realistic world scenery and dozen of addon's (planes, geographic data, etc).
- GNU/GPL
- Available on most platforms.



VDrift





VDrift

- VDrift is a cool racing simulation game with over 13 tracks and 21 cars. Highly configurable and customizable.
- GNU/GPL
- Single/Multi-player
- Available on most platforms.



Torcs



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TORCS

- TORCS (The Open Racing Car Simulator) is an open source racing simulation game.
- GNU/GPL
- Single/Multi-player
- Available on most platforms



RPG

Role Playing Games/MMORPG's (Massively multiplayer online role-playing games)
- one or a group plays a role/character...



NetHack



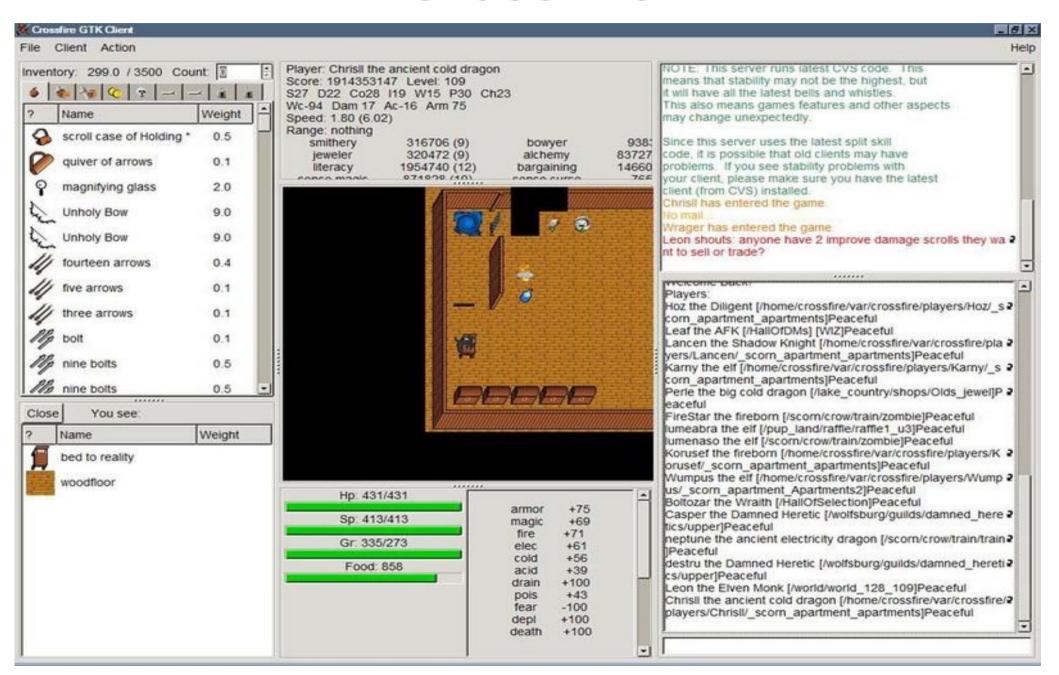


NetHack

- NetHack is a D&D like role playing game. You play the role of a wizard, fighter or other character on a quest for the Amulet of Yendor.
- Console and graphical versions available
- GNU/GPL
- Available on most platforms



Crossfire





Crossfire

- Crossfire is a mult-player adventure game ala Gauntlet or NetHack.
- GNU/GPL
- Online Multi-player
- Available on most platforms



Diamonin





Diamonin

- Diamonin is a MMORPG adventure game.
- GNU/GPL fork of Crossfire.
- Online multiplayer
- Available on most platforms



Puzzle/Action/Arcade

Puzzle/Action/Arcade - all around fun...



Frozen Bubble





Frozen Bubble

- Frozen Bubble Is a game where you play Tux (Linux mascot) and group colored balls in similar formation.
- GNU/GPL
- Single/Multi player Online play.
- Available on most platforms as well as in Java.



Pingus



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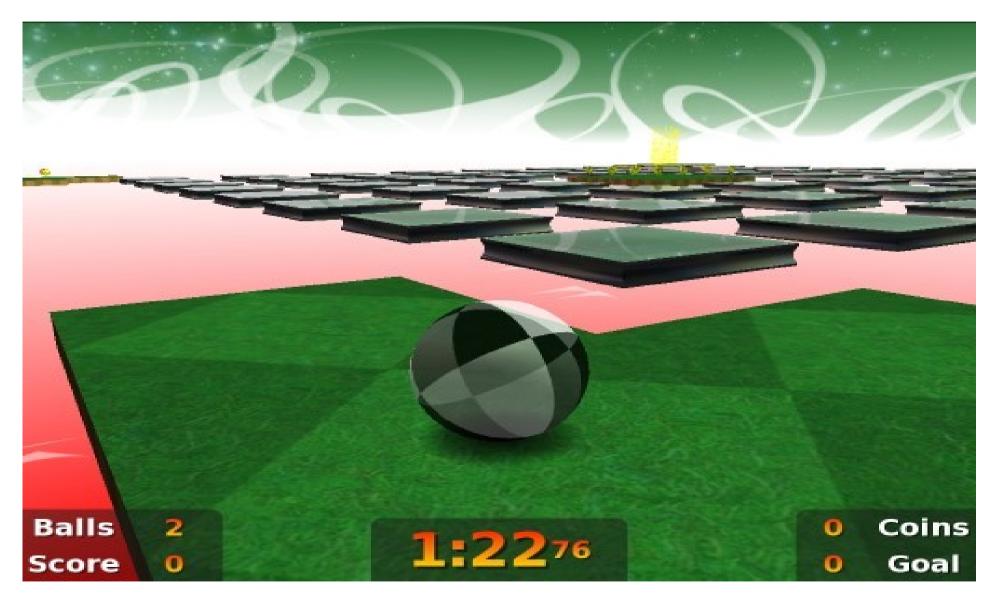


Pingus

- Pingus is a free Lemmings-like game where you guild your gaggle of penguins through obstacles.
- GNU/GPL
- Single player only
- Available on most platforms.



Neverball





Neverball

- Neverball is a game where you battle the forces of gravity to collect coins and most importantly have fun.
- GNU/GPL
- Single player
- Available on most platforms

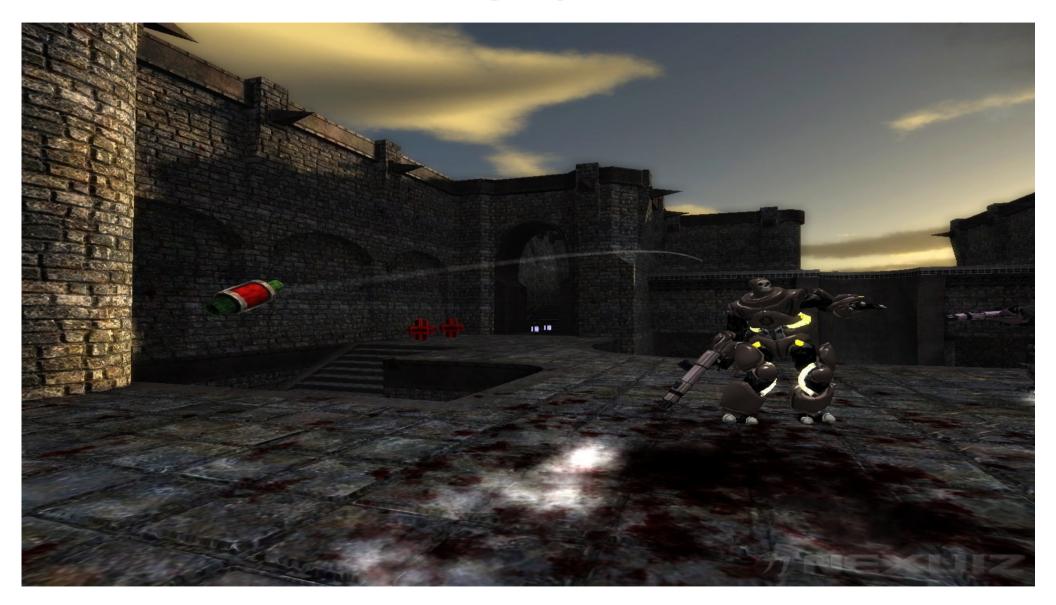


FPS

First Person Shooters - you shoot at stuff...



Nexuiz



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Nexuiz

- Nexuiz is a cool, fast paced, futuristic first-person shooter with single and multiplayer modes.
- 9 weapons, 24 official maps and over 200 community maps.
- Very cool slick GUI.
- GNU/GPL and available on most platforms.



Warsow



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Warsow

- WSW is a face paced cartoon like and futuristic first person shooter.
- GNU/GPL
- Single and multi-player options
- Available on most platforms



WoP





World of Padman

- Fun cartoon like first person shooter.
- GNU/GPL
- Originally a mod for Q3 Arena
- Available on most platforms

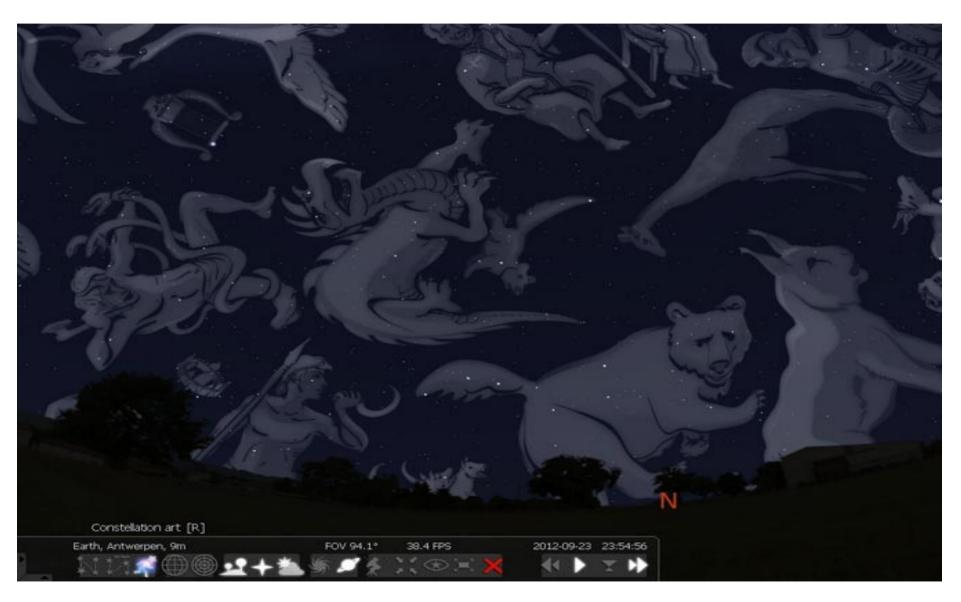


Educational

Educational Games for all ages...



Stellarium



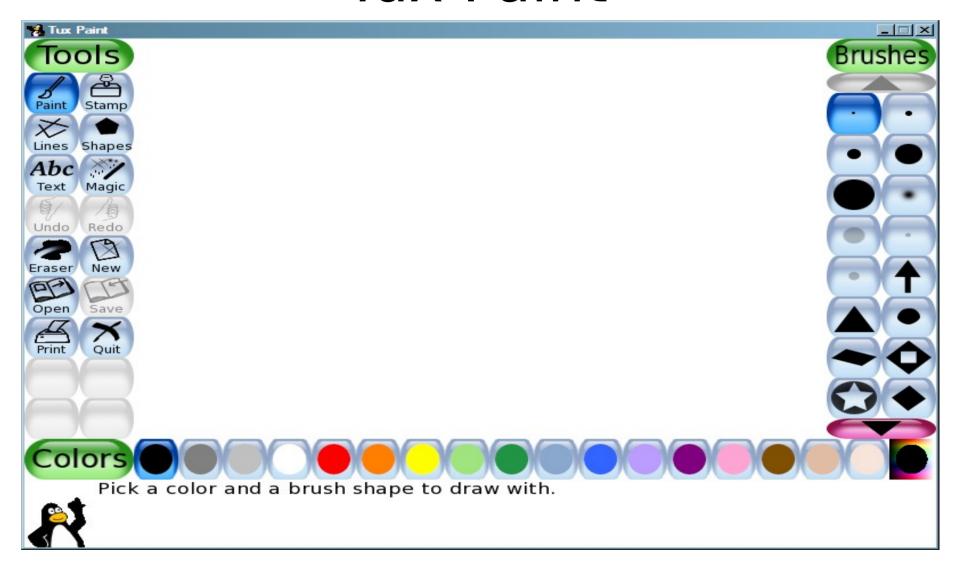


Stellarium

- Stellarium is a virtual planetarium of the sky in 3D.
- Great realistic content and easy to use navigation.
- GNU/GPL
- Available on most platforms.



Tux Paint



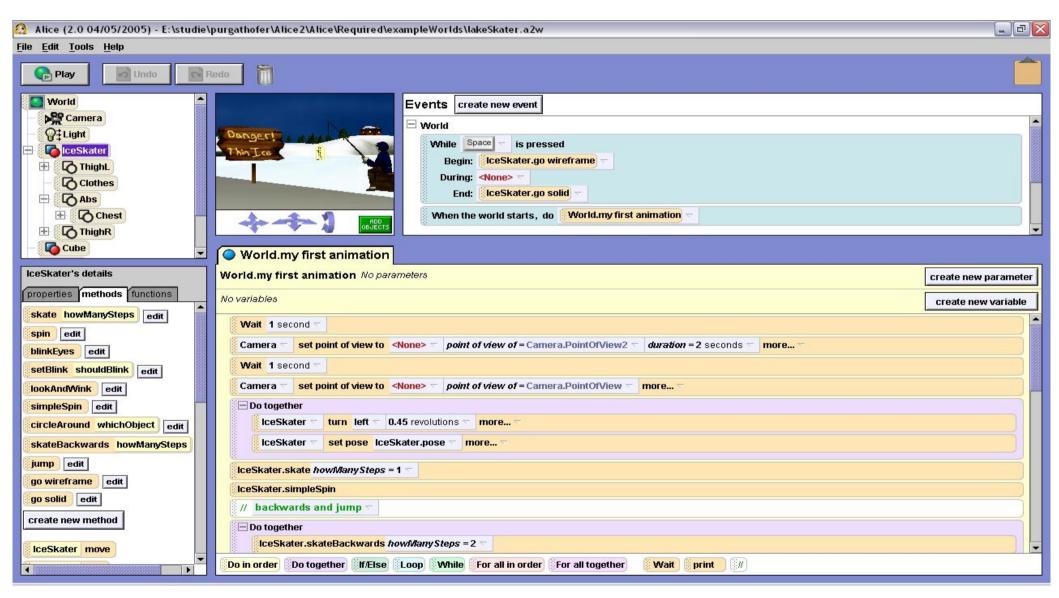


Tux Paint

- Tux Paint is a simple graphics editor for kids (3 and above).
- Engaging, fun environment (Tux, sounds, big buttons) that encourages creativity and learning.
- GNU/GPL
- Available on most platforms



Alice





Alice

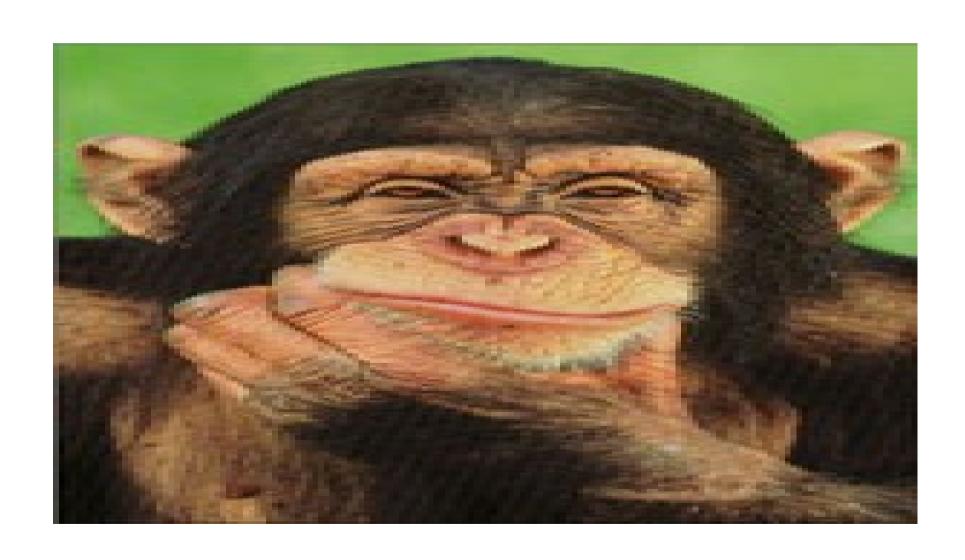
- Alice is an educational 3D game environment that teaches programming to kids.
- BSD License
- Available on most platforms



Game Server Ex

Some of you may be wondering... Can I build my own game server?

So can I create a LAN party?





Distro/OS Options

Freedom and choice are yours



OS's (Linux/Unix - Commercial)

- Linux/Unix Distros -
- Redhat www.redhat.com
- Novell www.novell.com
- Canonical www.canonical.com
- Sun www.sun.com
- Commercial support
- All of these projects have a community driven effort.



OS's (Linux/Unix - Community)

- Debian Linux www.debian.org
- Slackware www.slackware.com
- Ubuntu www.ubuntu.com
- Gentoo www.gentoo.org
- Fedora www.fedoraproject.org
- OpenSUSE www.opensuse.org
- Open Solaris www.opensolaris.org



BSD's

- FreeBSD www.freebsd.org
- OpenBSD www.openbsd.org
- Both are community driven but community support is available.
- No single company drives projects.
- OpenBSD has stellar security history. Project is model of success of security in the Open Source world.
- Only 2 remote holes in the default install in 10 years!
- O'Bsd brought you OpenSSH, OpenBGPD, OpenNTP and OpenCVS.



Networking

- There are supernumerary networking options in the FOSS world.
- PFSense www.pfsense.org
- IPCOP www.ipcop.org
- Untangle www.untangle.com
- OpenWrt www.openwrt.org
- DD-WRT www.dd-wrt.com



Open Virtualization

- Xen http://www.xen.org/
- Virtual Box http://www.virtualbox.org/
- QEMU http://bellard.org/qemu/
- Linux KVM (Kernel based Virtual Machine) http://kvm.qumranet.com/kvmwiki
- OpenVZ http://openvz.org/



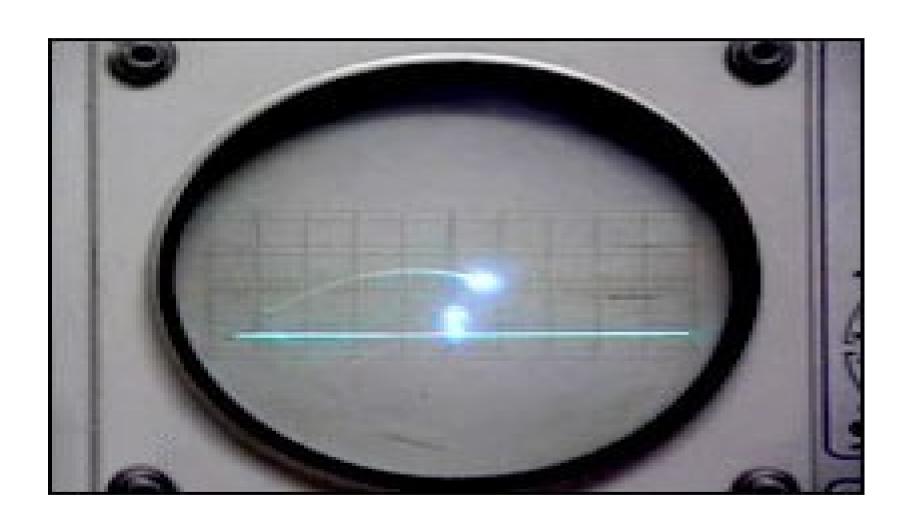
Ultimate Rig?



1958 Physicist William Higinbotham's Tennis for Two game. Now thats a gaming rig!

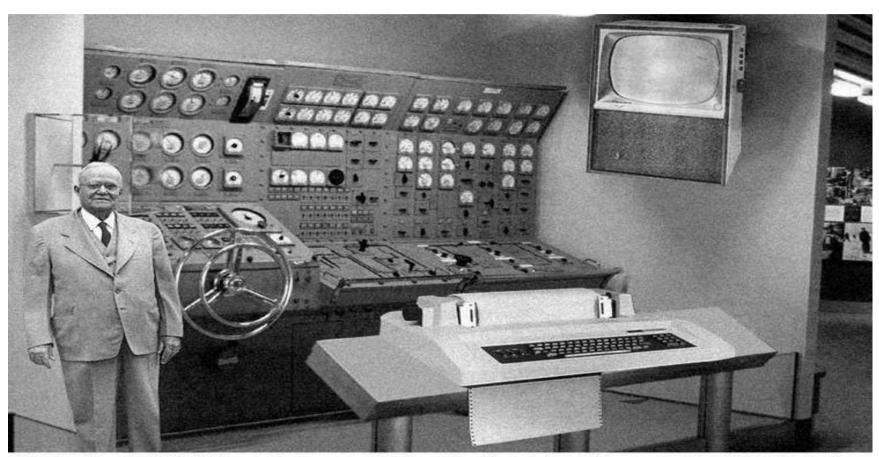


That might tax my GPU





Or this...



Scientists from the RAND Corporation have created this model to illustrate how a "home computer" could look like in the year 2004. However the needed technology will not be economically feasible for the average home. Also the scientists readily admit that the computer will require not yet invented technology to actually work, but 50 years from now scientific progress is expected to solve these problems. With teletype interface and the Fortran language, the computer will be easy to use and only



Kiddin'

Aside.



Game Server Example





Nexuiz

- Cool futuristic first-person shooter with single and multi-player modes.
- 9 weapons, 24 official maps and over 200 community maps.
- Very cool slick GUI.
- Think Quake or UT.



Nexuiz

- Alientrap Software
- GNU GPL (maps, models, everything)
- DarkPlaces (modified Quake Engine)
- Linux/Unix, OS X, MS Windows



Nexuiz Setup/Config

- Unzip -d to where you want it. Usually sub directory of home directory is easiest.
- READ the readme file in Nexuiz/Docs/
- Copy Nexuiz/Docs/server/server_linux.sh into Nexuiz
- Copy Nexuiz/Docs/server/server.cfg into Nexuiz/ data
- Change the variables below and comment out anything you don't want enabled.



Nexuiz server.cfg

- hostname will be the name of your server.
- sv_motd your message, insult or joke of the day.
- Maxplayers max # of players.
- Port the port you want the server to run on. UDP 26000 is the default Nexuiz server port.
- sv_public set server to public or not.
- rcon_password set if you want remote management password.



RCON

- Rcon allows remote administration of the server.
- Pick a strong password. =P
- Can login while on your client connected to the server or add rcon password to your client config.
- Rcon User Guide



Nexuiz Setup/Config

- Edit and customize server.cfg
- Configure local firewall to open UDP 26000. Also open it on hardware Firewall (if you are opening server to public Internet).
- Once you locked down the network/server you can fire up your server.
- ./server_linux.sh &
- Have some FUN!



Nexuiz Support

- Nexuiz Website
- Nexuiz Forum
- Nexuiz FAQ
- IRC #nexuiz on irc.quakenet.org



Gaming

Industry Facts



Interesting Quote

Video games are a waste of time for men with nothing else to do.

RAY BRADBURY Salon.com, Aug. 29, 2001



Actually...

November 2005 Nielsen Active Gamer Study

A survey of 2,000 regular gamers, found that the U.S. games market is diversifying. The age group among male players has expanded significantly into the 25-40 age group. For casual online puzzle-style and simple mobile cell phone games, the gender divide is more or less equal between males and females. Females have been shown to be significantly attracted to playing certain online multi-user video games that offer a more communal experience, and small amount of young females have been shown to play "aggressive" games that are sometimes thought of as being "traditionally male" games.

41% of PC gamers are women. - ESRB



Industry Facts

- Most estimate nearly \$10 billion market it the U.S. alone.
- According to NDP Group, Console and portable software sales: \$6.2 billion, console and portable hardware and accessory sales: \$3.7 billion, PC game sales: \$1.1 billion in 2007.
- >100 million gamer worldwide as of 2005.
 Deutsche Bank Alex Brown.



Open Source's Industry Impact

In nearly every space Open Source has had a tremendous impact...



FOSS Gaming

A few key contributions relating to our highlighted games....



id Software

- Founded 1991 by John Carmack (Lead Programmer), John Romero (Programmer), Tom Hall (Game Designer), Adrian Carmack (artist)
- Amazing powerhouse of innovation in the gaming industry. HUGE contribution to Open Source.
- Licensed its core engine (Keen, Wolfenstein, Doom, Quake, Quake II, Quake II) to other game producers.



id Software

- John Carmack open sourced all major engines under GPL.
- Future releases will be made FOSS after 5 years.
- id spurred innovation in gaming and especially in the FOSS space.
- Thank you ID Software!



ID's FOSS Engine Brethren

- ioquake3
- http://en.wikipedia.org/wiki/loquake3
- DarkPlaces
- http://en.wikipedia.org/wiki/DarkPlaces



Other Amazing Engines

- Spring Game Engine
- Ogre Game Engine
- Sauerbraten Game Engine



Open Source Gaming Industry

Why are there no blockbuster games?



Industry Economics/Oss Barriers

- Game development is costly.
- Rockstar Games, Leslie Benzies says that Grand Theft Auto IV had over \$100 million development costs.
- FOSS projects have to be sustainable financially. There are real costs.



Industry Economics/Oss Barriers

- Video Cards mired in IP (Intellectual Property) issues.
- Many in the Open Source community are not willing to either compromise. It's really the only option other than building a better card...
- Open Graphics Project endeavors to do just that.



Industry Economics/Oss Barriers

- Popularity of commercial development tools, languages and engines...
- Prevalence of closed consoles...
- Lack of consumer understanding of FOSS



Despite all of these factors

FOSS THRIVES

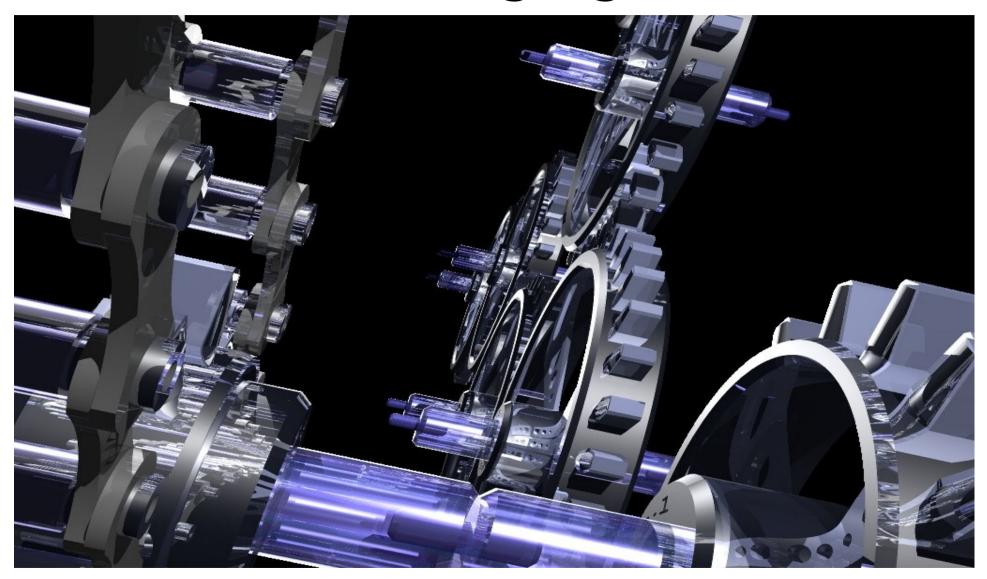


Not a sermon

If you want to see FOSS thrive, then you have to support it as an active participant, or otherwise financially support these projects.



Changing





Science of Gaming

Societal Value of Video Games



Gaming Benefits

- Video games can actually have a societal value and contribution.
- Training, simulation and even educational marketplaces make use of the same technologies that came from the commercial/military world.
- Games are a learning/didactic tool.
- Fun is important avenue to learning!



Science behind Gaming

- Video games improve spatial capacities
- Video games improve visual attention skill
- Video games improve spacial acuity
- Video games sharpen visual skills
- Video games can reduce stress
- Second Life can improve real life social skills
- Video games improve visual processing
- Video games improve gamer's problem solving, scientific thinking



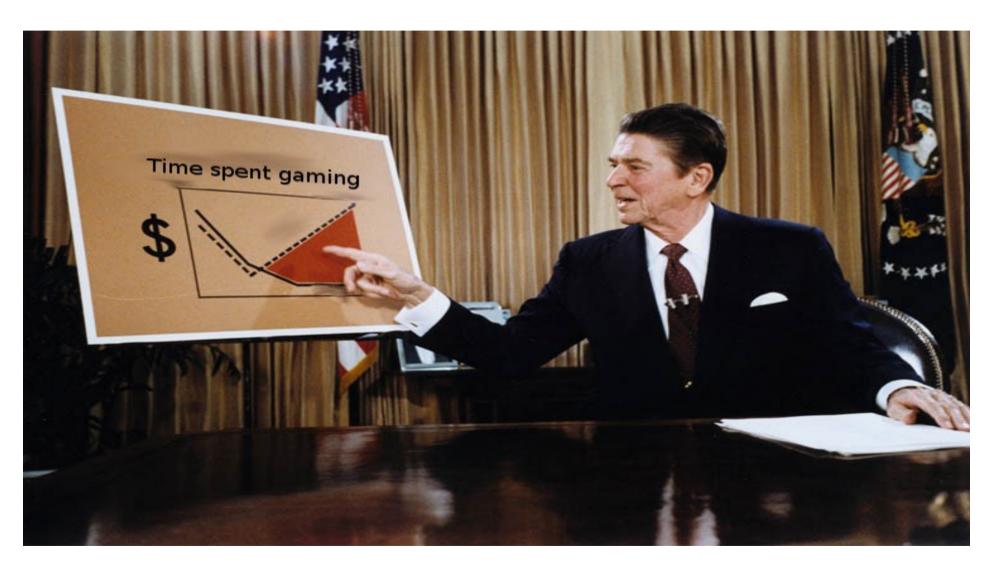
Quote

I recently learned something quite interesting about video games. Many young people have developed incredible hand, eye, and brain coordination in playing these games. The air force believes these kids will be our outstanding pilots should they fly our jets.

Ronald Reagan Aug. 8, 1983



Ronny was a Gamer!



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Overblown Negative Mythology

- Many politicians and activists in our society don't recognize the scientific facts about video games or their positive present/future potential.
- Large body of scientific research generally show games to have a vastly positive societal impact.
- As a didactic tool they offer many positive impacts.



Grand Theft Childhood

- Dr's Lawrence Kutner, Ph.D. and Cheryl K. Olson, Sc.D book on the effects of violent video games effects on kids.
- "Studies by the FBI and the U.S. Secret Service found no link between violent video games and headline-grabbing crimes or violence."
- Games have a wide array of positive aspects such as: improved creativity, allow kids to explore difficult emotions (anger & stress), promote involvement in sports, improve social skills and selfesteem.



Interesting Quote

Video games are bad for you? That's what they said about rock and roll.

SHIGERU MIYAMOTO Mario, Donkey Kong, Legend of Zelda

Video Games are a compelling learning tool.

"The generation that grew up with Super Mario is entering the workplace, entering politics, so they see games as just another good tool to use to communicate."

- Henry Jenkins, MIT



Are there other FOSS games?

Tons in every gaming genre...



Game Links Galore

- Wikipedia List of Open Source Games
- List of Open Source Games
- Libre Game Wiki
- Dmoz Directory Open Source Games



FOSS Game Sites

- www.linuxgames.com
- www.tuxgames.com
- www.liberatedgames.com
- www.happypenguin.org



Funny Game Links

- 50 Worst Game Titles Ever
- 30 Dumbest Video Game Titles Ever
- Some funny video games



Video Game Science

- Video games improve spatial capacities
- Video games improve visual attention skill
- Video games improve spacial acuity
- Grand Theft Childhood
- Reality Bytes: Eight Myths About Video Games Debunked



Thanks to...

- All the FOSS game programmers, graphic artists, animators, sound editors, etc. who make these great games possible.
- The entire FOSS community
- BLU
- MIT (for the space and continued support)
- YOU!