**Version History:**

**Pre-Alpha 0.01 (March 26, 2016):**

Established 3D environment, the frame, the textures, bit shifting, moving, and rotation. The player and moves and rotates on his/her own, as there are no KeyListeners yet.

**Pre-Alpha 0.02 (March 26, 2016):**

Added KeyListener components so the player can move himself forward, back, and from side to side. The arrow keys can rotate the player, and shift increases the speed, effectively sprinting the player. Also added quick exit feature using esc key.

**Pre-Alpha 0.03 (March 27, 2016):**

Made screen smaller to speed up game, tried a new texture, and smoothed things out.

**Pre-Alpha 0.1(March 28, 2016):**

Tested a change in textures, and also added jumping and crouching

**Pre-Alpha 0.2 (March 30, 2016):**

Added Render distance that creates a fog effect so the screen does not glitch in the distance. Also used a new bit shift the cause the textures to change design and color. Also added an fps counter that is shown on the screen using the f key. Also added theme changer that changes the screens textures and colors when you press T. Also MLG mode was added. Also added Mouse looking left and right to the game.

**Bugs: FPS counter quickly disappears unless you quickly press f and don’t hold for long.**

**Pre-Alpha 0.3 (April 1, 2016):**

Added custom textures, and moving the ceiling and floor up and down with the up and down arrow keys on the numPad and normal arrows.

**Pre-Alpha 0.4 (April 2, 2016):**

Added health that is displayed on the bottom center.

**Pre-Alpha 0.4\_5 (April 6, 2016):**

Added shells displayed on the bottom right, and the ability to hurt yourself by 10 every few seconds with the j key, or heal yourself with the h key. At 60 health, the text becomes yellow and you move slower, and after you reach 20 it becomes red and you move really slow. At 0 you die and fall to the floor. Also when you heal above 100 you become uber, and the text becomes blue and you move faster. You can also shoot now which causes the screen to brighten a bit for each shot, and the shells decrease each shot. Also you can reload your ammo by pressing r.

**Pre-Alpha 0.5\_5 (April 13, 2016):**

Added up and down looking, and a texture that follows where you look that goes off into the distance, simulating a bullet being shot, even though it is really not being shot it is just looping at the moment. Also the game is severely slowed due to the amount of pixels being generated by the red square. Also added another theme that simulates the ground and the sky of outside. Also raising the ceiling and lowering it were switched to 9 and 0 because up and down arrows are now looking up and down. Also the status bar is clearly defined with a transparent grey background to make the text easier to see.

**Bugs Fixed: The Fps counter bug**

**Bugs: Looking up and down as the player can look up really really fast it seems, and the player looks slower and slower as he/she looks down, and then just stops it seems. There is no way to fix this bug, therefore I am not considering it a bug from here on out.**

**Pre-Alpha 0.6 (April 18, 2016):**

The grass, sky theme is now the default theme, and now walls are finally generated. The walls are made of 4 2D walls, and it is corrected so that if the player jumps or moves that it stays put. Only looking up causes issues, therefore looking up and down is turned off for now.

**Bugs: Weird texture glitches due to the walls textures not being clipped correctly.**

**Pre-Alpha 0.6\_5 (April 19, 2016)**

All walls are given the custom test texture, and the test texture is fixed so that it is completely seen instead of being shifted right.

**Bug fixes: Wall clipping is fixed, fixing the weird graphical glitch**

**Bugs: A small weird line is seen way in the distance when looking a certain direction.**

**Pre-Alpha 0.7 (April 20, 2016):**

Creates walls using the random level generator. There is still no collision detection, and if you run outside the map the textures of the outside walls cannot be seen, only within the level do the textures work completely right. Level size is fixed at 100 by 100 (units are in in terms of walls).

**Bugs fixed: Weird line glitch.**

**Bugs: When you get up next to a wall and turn enough a weird texture glitch of the walls causes the textures of the wall to begin to stretch infinitely into the z direction (but cut due to the boundaries of the wall) and the wall begins to look weird.**

**Pre-Alpha 0.8 (April 25, 2016):**

Creates the launcher, which allows the player to change the screen resolution and theme of the game. Right now there is 4 themes (Outside, Night time, Tiles, and Nick Cage), and each uses different sky and ceiling textures, but the wall textures stay the same. The wall textures a changed to a new test texture decreasing the craziness of the wall texture glitch. Exiting the game quits to the launcher. Only quitting the launcher will quit the game. Theme changer in game is taken out to make way for the set themes. MLG mode is still kept, it just changes the wall and floor textures and does not create all the weird glitchy stuff.

**Pre-Alpha 0.8\_5 (April 27, 2016):**

More themes are added, and textures are made to be higher resolution. On the moon the gravity is decreased and therefore you can jump higher. MLG mode is now not available to activate in game, it must be turned on by the launcher, and the mode no longer causes glitchy textures, the textures are just changed to be MLG themed textures.

**Bugs: Tops of walls cannot be drawn and therefore there is no tops to the walls. Just emptiness**

**Pre-Alpha 0.9 (April 29, 2016):**

Textures were changed to be more realistic, and a very bad version of collision detection is added. The outer boundaries of the map work fine, but all the walls within the map have very weird, messed up collision detection. Also the level size can be changed from the launcher.

**Pre-Alpha 0.9\_5 (May 1, 2016)**

Textures are more realistic now, ceiling heights are customized even more for each theme, and collision detection, though not perfect, is better than it was before. Also noClip mode by pressing n is added so that the player can move through the walls and map boundaries. Looking up and down has been corrected so that walls do not move with the looking up and down movement, so therefore it is added back into the game.

**Pre-Alpha 0.9\_7 (May 4, 2016):**

Collision detection is near perfected, especially for level sizes 100x100 and below. There is now also fly mode which allows the player to fly up and down above the walls and map, and super speed mode which allows the player to move super fast around the map.

**Bugs: Fly mode when turned off does not allow the player to fall unless he crouches, and if you go to the ceiling and keep going up, the world flips and the player will never reach the ground even if he keeps going up in the reverse world.**

**Alpha 1.0 (May 5, 2016):**

Moving the ceiling and floor is taken out, and textures are made even more high depth. Also the fly and speed mode activations are fixed. Also added fall damage depending on the height you fall from. Also added health boundaries and 200 and -100 that you cannot go past. If you reach -100 health, you become a zombie, and the textures all shift to red, and you become very slow.

**Bugs fixed: Fly mode is fixed now so that the ceiling does stop your movement up now, and turning it off does allow for dropping.**

**Bugs: When falling, if you turn on fly mode again somewhere along the way of falling down, if you fly up higher again, the fall does not just restart, it adds on the acceleration and speed of the last fall to the new one, making the fall unrealistically fast, and increasing fall damage more than it should be at that height.**

**Alpha 1.1 (May 8, 2016):**

Added the ability to either use the mouse or not, and made the v button shooting now if the mouse is turned off. Also added entities (Only three right now, health kits, enemies, and bullets) and 3 game modes. Health kits add 15 health when you are close to them, and enemies chase you down and can clip through walls (Their AI’s are not complex enough to navigate through walls yet) and move and harm the player a certain amount depending on the difficulty. Bullets are created when the player shoots, and the bullets deal 10 damage right now to the enemy when they are shot at the player. None of the entities are affected by collision detection yet. Also added a kills counter to the status bar to let you know how many enemy kills you have. Each enemy you kill spawns two more enemies in random locations in the map. In peaceful mode there are no enemies, in normal the enemies hurt for 2 health each hit, and move at a speed of 0.05 walls per tick. In hardcore mode, the enemies hurt for 5 health each, and move at a speed of 0.5 walls per tick. Looking up and down is not corrected for enemies yet, so that is taken out temporarily now.

**Bug fixes: Falling bug is fixed and fly mode works perfectly now.**

**Bugs: Bullets don’t always work correctly, entities do not spawn for some reason in the outer reaches of the map on levels 100x100 or on.**

**Alpha 1.2 (May 9, 2016)**

Adds shell entity now to the game, that restocks your immediate ammo if you are below 37, and restocks the cartridge otherwise. It cannot go beyond 6 cartridges in terms of restocking. Status bar text sizes are smaller now to fit all the new items in it.

**Bugs: When a cartridge is full, and under 6 cartridges, picking up shells just adds a whole new full cartridge, not a part way filled one. Some other slight bugs with reloading and shells cause ammo to go into negatives sometimes, and other weird things to happen.**

**Alpha 1.2\_5 (May 10, 2016)**

Fixes some shell bugs but not all.

**Alpha 1.3 (May 12, 2016):**

Fixes all shell bugs, and completely fixes bullets. Now bullets can be seen as small orange sprites that render where ever the bullet is at each tick. Therefore now the bullets correctly can hit enemies and make the game playable. There is also now another game mode (Easy mode) that makes the enemies move at 0.01 walls per tick, and the other game modes are refactored to make them slightly more possible now. Also re-added looking up and down because it was fixed for enemies now as well. Now entities fill up the entire map as well, instead of stopping their spawning before the edges of the map.

**Bugs: Entities spawn outside the map in smaller level sizes.**

**Alpha 1.3\_5 (May 25, 2016):**

Sounds, music, optimized code, more commenting, corrected bullets for jumping and looking up and down. Also makes it correct walls so that walls can have a set height, and when the player jumps higher than the wall, he can stand on top of the wall leading the way for stairs and other such things in the future.

**Bugs Fixed: Entities spawning outside the map (At least in a way), and spawning in a block (now you spawn on top of it.)**

**Bugs: These are just bugs noticed from previous versions that haven’t been fixed. UpRotation and bullets are a bit weird because on the screen, rotating up is rendered differently than the actual bullets are rendering causing a mix up. Also when you jump, if a wall is seen even slightly over another wall, that wall will vanish making it look weird. Also the game runs out of memory now after you reach a certain number of enemies.**

**Alpha 1.3\_7 (June 14, 2016):**

Added more enemies, and different enemy textures. Each enemy has a different status. Tanks take 20 hits and deal more damage, but are also slower than any other enemy. Chargers are super super fast, but deal little damage, and take only two hits to kill. Flyers are moderate speed, and moderate damage dealing, but they fly, making it so you have to aim up or down. Then there is the normal enemy, which is just moderate in everything.

Besides the new enemies, many bugs are fixed such as walls vanishing when clipping through each other, also the game no longer runs out of memory due to too many threads running. UpRotation in bullets is fixed slightly but not all the way. More music is also added to the game, and a new default music is set.

**Alpha 1.3\_9 (July 27, 2016):**

The mouse movement is pretty much fixed, with only slight glitches occurring here and there now. Sound and music volume sliders and now added, and the options menu is changed quite drastically. Also there is now 3 different wall ID’s, allowing for different wall textures in game. Code for set levels is set up, and all code is now commented.

Also now you can pause the game so you can start up where you left off after pausing. Game is optimized more so now as well, and is slightly faster.

**Bug fixes:**

**When sounds load for the first time, it causes the game to lag. Also starting the game itself does not create a new thread each time the game is started, meaning the game should never crash.**

**Alpha 1.4 Development Version 1 (August 17, 2016):**

Loading in levels from text files based on the id of wall/entity being created in each spot in the map. All entities are centered in the space they are placed in on loaded maps. Collision detection is added for entities, and bullets. Doors are added, and buttons that transition the player to the next level are added. To activate a door or button the player must press E next to the object to use it. Flying enemy is updated so that it will fly down towards the player when it is close enough to the player. This allows it to fly over walls towards the player, and still attack him/her. Glass walls are added that are see through. Computer interface walls are also added to provide a little more interesting textures as well. Walls can be different heights now as well. A shell drop will drop from every enemy that is killed as well now.

**Bugs fixed:**

**Can no longer see entities behind walls now when standing in front of the wall. Taller walls can now usually be seen behind walls that are nearer to the player that are smaller.**

**Bugs:**

**Walls still sometimes cannot be seen behind other walls due to things not be completely perfect with the method being used now. When a smaller solid wall is next to a taller wall, the taller wall will still not be rendered, and will not be seen, but the smaller wall will. Bullets can be shot through walls, but only if the player gets really close to the wall and then shoots.**

**Alpha 1.4 Development Version 2 (August 30, 2016):**

Not completely sure what else I added in this version besides bug fixes. It’s been a while. More levels were added though, and enemy textures were changed.

**Bugs fixed:**

**All walls can be seen (exception of glass walls and such from behind other blocks) and bullets will not go through walls anymore.**

**Alpha 1.4 Development Version 3 (September 5, 2016):**

Added a creepier theme to the game, added sounds, added music that changes for each level, fixed more door stuff, and changed the text color to white when you are in super health mode (meaning above 100). I do not know what else was added, but I’m sure there was a lot, the maps are too far updated to play these outdated versions.

**Alpha 1.4 Development Version 4 (September 19, 2016):**

Updated the status bar, added players face which gets more hurt as enemies continue to hurt the player. Text color now changes to blue when the player is in super health mode. Animated walls are added, new levels are added, keys and doors that match those different keys, and secret doors are also added, as well as walls of different heights and the MEGAHEALTH object which has an animation.

There is also a new way of loading in maps as now each block has 3 different values (What type of block it is, how high the block is, and what item or entity is on that block). The game is also optimized to run faster with these new items, and enemies are allowed now to travel onto stairs and such just like the player. There are some bugs associated with this, but they are negligible. Other new walls are added/changed, and the launcher screen now also has new music and a graphical image of the games title. The only colors the launcher changes now are red and black to match the theme.

**Alpha 1.4 Development Version 5 (September 23, 2016):**

More animated walls are added, the status bar is updated again, bug with the face disappearing no longer occurs, and the music is again updated for the levels. There is better enemy collision detection, items will always spawn or land on a wall correctly now if they are spawned over or on the wall. Survival mode also now includes all the wall types in the map to make it more interesting. Also map names are now added to each of the maps to be displayed in the status bar. More stuff was probably added but I can’t remember what.

**Bugs:**

Some sort of weird collision detection bug with flyerdemons causing them to be stuck when over blocks.

**Alpha 1.4 Development Version 6 (September 30, 2016):**

Tons of sounds were added, flyerdemon collision detection is again fixed, as well as new AI added for it. Now the flyerdemon, once activated, will fly over walls instead of just getting stuck at the same height behind them. Basically if there’s a wall in its way, it will avoid it, get over it, and attack the player. Secret objects are added to the map now as well, and doors open much faster and with sound effects. Again probably other stuff was added I just can’t remember right now what it was. Probably some optimizations and stuff.

**Alpha 1.4 Development Version 7 (October 8, 2016):**

Even more objects! Updates to the flyerdemon graphics, activation sounds for enemies, MORGOTH is added, resurrector enemy is added, a new way to access graphics for the title menu, status bar, player gun, etc… is added. The players gun is now seen out in front of the player, and is animated as well. More levels are added, way more blocks are added, and more textures are added to the game. This update also updated lighting in the game, and added lighting effects for the environmental suit, the goblet, and glasses of vision. Most of all are all the items added though, which I will layout for you now (Be aware some of these appear in the Version 7\_5 development version, but I forgot which were added then so I’m going through them all now).

Shotgun: Gives the ammo the shotgun weapon, adds more ammo than normal shells, has its own special pick up sound, and looks cool.

Toxic Waste entity: Hurts player 2 health each few ticks when he/she stands on the block.

Lava entity: Same as Toxic Waste but hurts 5 health each few ticks.

Skull of Ressurection: When Player dies, this resurrects the player with 100 health but no armor. Depending on how many the player collects, that’s how many times he/she can resurrect.

Environmental Protection Suit: Protects against effects of toxic waste and lava, and also causes your GUI to bit shift to a green color

Goblet of Immortality: Grants you godmode and vision for a given time before wearing off

Adrenaline: Adds one to the players maximum health

Glasses of Vision: Enhances the players vision (Makes map brighter)

Torch: Aesthetic Object of a torch

Lamp: Same as torch but a lamp

Creepy Tree: Same thing

Canister: Not explosive yet, but will be. Right now it’s purely aesthetic.

Chainmeal Armor: Adds 50 armor to the player.

Combat Armor: 100 Armor to the player

Argent Armor: 200 Armor to the player

Armor Shard: Adds +1 armor to the player

Health Vial: Adds +1 health to the player

Baron’s Treasure: Cool little item to be used later

The Dark Spellbook: Also to be useful later. Once grabbed, the table it is on will just be a blank normal table.

The Scepter of Deciet: Will turn enemies against each other in a later update

Morgoth’s Trophy: Later will be a drop from Morgoth that will do something cool I’m sure.

Table: Aesthetic object

Lamp table: Same

Corpse: Drops when an enemy is dead and can be resurrected by a resurrector to be the enemy that it once was. The default value though is 0 which means that if this object is just an aesthetic object, it will not resurrect.

Resurrector Enemy: Cool looking new enemy that when in range of a corpse, it will resurrect that corpse to the enemy it was before it was killed, making life tougher.

MORGOTH: The boss of the game. Not completely finished with AI yet, but it moves faster than most enemies except for the reaper, can resurrect, and has custom sounds, graphics, and is freaking hard to kill.

Shell Box: Adds even more shells to the Players inventory

End Level Linedef: When in range of, it ends the level by the player walking into it rather than having to press a button.

Other stuff may have been added, but I don’t know at this moment.

**Alpha 1.4 Development Version 7\_5 (October 11, 2016):**

Fixed a few bugs and optimized some things. I cannot remember anything else about the update though.

**Alpha 1.4 FULL (October 21, 2016):**

Collision detection in doorways and on stairs and higher levels is completely fixed now, units of the map are completely rewritten so everything shares common units in the x and z directions. Graphics in the y direction are also now corrected to look correct. Doors will not close anymore when the player or an enemy are underneath it, and enemies will also open doors (non key doors that is) when they are in front of one, updating their AI in way so that now they can chase the player even easier. Also now, if the player happens to shoot an enemy farther along in the map, it will activate instead of just waiting for the player to get close.

Elevators also now allow enemies to travel on them, and allows the player to jump and crouch on them. Also now there are updated graphics for the shotgun, and a completely rewritten system for handling the weapons of the player and incorporating new weapons in the game. Speaking of new weapons, there is now the PhaseCannon which shoots a plasma or phaseball at the enemies doing tons of damage, but also having a longer cool down time. Weapons now also have better firing animations, and can be switched in or out pressing 1 or 2 in the game. 2 for the phasecannon, and 1 for the shotgun, but you can only use a weapon if you have it equipped. If you have not picked it up yet, you cannot choose it. Also the shotgun shoots a spray shot like real shotguns do, and the speed of the bullets is now updated as well.

Also the phasecannon has two different types of chargepacks to supply it with the ammo it needs, but it holds less ammo than the shotgun because it does more damage. Also perfects all the other things added from the other development updates, optimizes the speed of the game by now using quicksort for many of the wall sorting algorithms, and fixes a good many bugs that were in the game before, but some can still not be fixed. Also armor and health are refactored to make the game not as easy to just glide through.

**Alpha 1.4.5 (November 8, 2016):**

Door textures and some items are changed to match the new story of the game. Also some new walls such a boxes, marble, water, scary picture wall, and a wooden wall texture. Also now the dark spell book is a cup of holy water. Some more levels are also added, and some existing levels are also now changed as well.

**Alpha 1.4.9 (November 22, 2016):**

Pretty huge update. The sky now in the game is of that of the atmosphere of a mars like planet as the outpost of the Solar Federation. The floor changes from level to level now. Also dual wielding pistols are added along with new items like the pistol item, box of bullets, and bullet clip. When the player has only one pistol, it will not be dual wielded, but when a second is found, you can shoot very fast making dual pistols pretty effective though each pistol bullet deals less damage than that of a shotgun or phase cannon. Also now there are two new enemies. 1 is Belegoth, the second boss the player will face. This boss deals twice the damage, and has twice the health of Morgoth. Also the Vile Civilian enemy which is the weakest enemy which drops bullet clips when killed. Also is now the only enemy which has animations for both moving and death, and now sets the platform for future enemies to have the animations as well. Also now bullets have been fixed almost in the up direction, but they can no longer be fired down as that caused too many problems.

**Alpha 1.5 Development 1 (November 29, 2016):**

Explosive canisters now can explode and harm both the player and the enemy. Some enemies now have animations as well. Also now there is auto-aiming whenever you want to shoot down since shooting down was acting odd. Enemies only activate if within the players sight (not behind walls, though there is a bug where sometimes there might be a lag spike or some weird anomaly where they do activate behind walls) and enemies can also now open doors as well.

**Alpha 1.5 Development 2 (January 28, 2017):**

Each enemy now has more animations, and most have a special ability or attack that they can use in order to attack the player or another enemy. More sounds for the new attacks and such are also added. Now when an enemy is hit, there is a new animation, as well as when the enemy is firing a projectile or resurrecting another enemy. When an enemy is using a special attack it will pause briefly to launch the projectile. Projectiles are launched in the direction of their target after calculating the angles it needs, though the target can dodge the projectiles. Sounds are also more optimized now, especially for bullets and projectiles, as well as enemy hurt sounds. When an enemy hits another, the enemy hit will then lock onto the enemy that fired that projectile and start attacking it. Melee attacks now cause the enemy to pause in place until the current swipe or bite is done, making for another battle tactic for the player. Also toxic waste and a few other bugs are fixed, including now elevators only move up to the height that they are initially set. Some projectiles launched by enemies are launched in multiple directions as well. Some parts of the code are optimized, and graphics are also more optimized now to seem more realistic, especially with the pistols the player can hold. A few other minor level changes and such were also added.

**Alpha 1.5 Development 3 (March 4, 2017):**

Mouse movement is optimized and nearly perfect. Mouse can now never stay outside of the frame. More enemy rotation phases and textures. New graphical settings including full screen, and a low resolution full screen. Projectiles are corrected, enemies no longer activate through walls, new music, and all images are made private within the jar file. Only maps can be changed. Speaking of that maps are now updated. Enemies can only activate if you are within sight of them as well now. Enemy AI is updated but still is not perfect. Sounds have been perfected so that they no longer repeat anymore. Toxic waste now can have other items on top of it. The game no longer crashes due to weird array out of bounds exceptions in Render3D. The game has been severely optimized speeding the game up to 30fps quicker on average. Code is better optimized and commented. Player can now shoot up and down with negligible error on shooting trajectory.

**Alpha 1.5 Pre-release (March 10, 2017):**

Bullets are even more accurate now. Mouse fixes for smaller screen sizes. Now the mouse is always perfect in the horizontal motion, but still is a little buggy when moving in the y, but for now that is unfixable. AI is not greatly improved from the last update and is officially done in terms of basic AI for the game. Any other additions will be to special attacks and such. Phase cannon image no longer has white pixels missing. Main menu button colors are updated. More bug fixes such as Survival mode not reloading correctly. Level loading is more complex now loading in the map number, map audio, brightness in the maps, and height to the maps. Players spawn can also now be rotated so that the player is facing a certain way when spawned.

**Version 1.5 Alpha (April 3, 2017):**

Fixes all crash bugs, and optimizes more code and comments. Maps are changed as well as the rest of the enemy textures besides the bosses because I got lazy. Several items including Morgoth’s head and Baron’s treasure have now been replaced. Morgoth’s head is now an invisibility crystal, an item to be used in a later version to make the player invisible to monsters. Baron’s treasure is now a weapon upgrade point, also to be implemented next update to increase your weapons abilities and power. Also the sound system has been completely refactored and rewritten to make it easier to play and implement sounds into the game, as well as to make sure sounds don’t conflict with each other, and that they reset and don’t repeat correctly. Also many new sounds and musical pieces for levels. Projectiles now work with fps changes. Also Nick Cage and MLG mode are updated with special fun surprises. Also enemies now fire when they are not in your sight too, which means if they are behind a wall they will fire, but that means they will also fire if you turn away from them as well. Also now the games frame, and icon is the new VILE symbol, as well as the games new executable file. The executable file is made by bundling the .jar file and other attributes to make the executable using the launch4j application.

**Version 1.5.5 Alpha (May 16, 2017):**

Brings over the editions from SMILE. Includes Rocket Launcher, rockets, rocket crates, new rocket mechanics, explosions (of different types), way more optimized code, new and different sounds, and other new mechanics and bug fixes. Among the new things, collision detection is now…. Well still buggy in some aspects but getting better and better. Smooth FPS mode is added so you don’t clip through the map and end up in no texture land because the game can’t keep up in low FPS rates. Though non Smooth FPS still runs faster. More graphics modes so that the game will run way way faster especially on slower computers. Also there are new mechanics, primarily with buttons. Buttons can now get rid of walls, and cause explosions as well as what it used to do with spawning new enemies. Also some glass walls can now be broken, and electric walls can be damaged if shot enough. A lot of better gameplay overall basically.

**Version 1.6 Development 1 Alpha (August 5th, 2017):**

A load of new features and tons and tons of bug fixes. First of all, all the rendering glitches are fixed by the new rendering system so no longer are other walls hidden behind other walls, making the game slightly slower. But now the rendering system is optimized again putting it back up to speed. Second, all collision detection methods have been optimized, and fixed so that there is now only the bug where if you are on top of a wall, you can fall through the wall when you are right on the edge due to the fact you are technically farther than a distance of 0 from the edge of the wall, but also within the buffer zone of 0.3 from the wall, so you can only move in one direction till you break free, but this bug is negligible.

Also now all entities have an eyesight mechanic and an itemActivationID so that all the entities are constantly searching for their target within their range of sight, and can activate certain doors and stuff if they die. This is the same with buttons and such. The itemActivationID allows for multiple buttons in the same map that do different things and activate different mechanics within the map. These include activating doors, elevators, explosions, enemy spawn points, end level points, breakable walls, and other such things. If something has an itemActivationID of 0 it will either not activate, or if it’s a button or line definition it will end the level.

There are also now teleporter entities that have an entrance and an exit that you can enter in and they teleport you to the location of the exit, and also play the teleporter sound. The invisibility crystal also now works, making the player invisible to all enemies in the map, and making it impossible for the enemies to attack you as they don’t know where you are. Also all breakable walls now have a new entity that classifies them as being breakable instead of the secret marker so there is not a surplus of secrets. Also the GUI and player model have been changed to be a little more realistic as well as a more customizable mapping and rendering system for more complex level design.

Similar to the eyesight mechanic, shotgun blasts and pistol shots now are instantaneous and don’t actually show the projectile in the air to make it more realistic. A pistol and shotgun shoot too fast to see the bullet in real life, so why should it on here. Explosions now also send you backwards depending on the angle and direction the explosion is in correlation to the player, whether a rocket blast or not, and also do the same for enemies as well to make more realistic explosion mechanics.

Most of the level designs have changed, as well as the new addition of a tutorial level with special textures to teach newbies how to play the game. Eventually there will be audio files of a marine commander to teach the player the story of the game as well included, and the mechanics are set up, but the audio files are not in place yet. Also all the corpses in the game are randomized between a dead girl and guy marine, the two types that will be available in future versions of the game to help the player in his/her quest. Also there are a lot of new sound effects in the game for the different items making it more interesting instead of the same sound effects for everything, and most levels now begin with an announcement or creepy sound effect to add to the story.

**Version Alpha 1.6 Dev 2 (September 28th, 2017):**

* Cross hair is added to improve aiming mechanics
* Pistols and Phase Cannons now use a new shooting algorithm which makes it so that you can only hit enemies if the crosshair is lined up with that enemies texture. The hitbox is not longer what determines if you hit them with those weapons. Because shotguns and rockets are different though in how they operate, they still use the old method.
* New and more realistic sounds and textures
* When bullets hit a wall, they create a poof type effect and leave a bullet mark for a little while (except for glass which disappears immediately), and Phase charges emit a burst effect. If a projectile hits an enemy it has a blood spray effect now. If a fireball hits something, it has a disintegration effect (Only default textures for now. It takes to long).
* Any message or pick up test that is displayed in game will scroll down the screen now instead of being in the bottom right hand corner and being hard to see. This is how you can see what you pick up if you pick up multiple items too.
* Maps have been changed, and fixed so that you can no longer escape the map (unless it is intended.
* There is now users! Log in with a custom username, and your profile will automatically save your settings, saved games, and stats for the next time you log in. Speaking of that, SAVING and LOADING are implemented so that you can save or load on any level, and everything will save and load exactly the same as how it was when you left the game. Name your saves whatever you want, and you can have as many as you want.
* New yes or no option display with a custom message for quitting and logging out of the game.
* More optimizations and bug fixes.
* Ammo is made to give you a little less now because it seemed too easy before.
* Now there is a high score that is kept track of for Survival mode.

**Version Alpha 1.6 Dev 3 (January 7th, 2018):**

* After several months of work, resource packs and everything that comes along with them are now implemented. With these, anyone can easily create their own textures, audio files, maps, etc… to pretty much make their own game theoretically. In the future users will have the option to change mechanics as well when doing this. Any resources not found in a resource pack will just be loaded from the default pack. To use a resource pack, copy your desired pack into the resources folder, load up the game, and select your pack inside the options menu. The engine will do the rest.
* Lots of optimizations and bug fixes, including a big Thread bug that would cause threads to keep being added every new game eventually causing the game to crash.
* Walls can now be in the air! And the mechanics still work as intended. Along with this were many more alterations to how maps can be made. There is now audio queues that can be activated by either linedefs, spawnpoints, and pretty much any item or entity. Anything can pretty much be activated by anything now making for a lot more interesting map design and concepts. Also there is now an activation ID that allows for doors and elevators to continue moving no matter what you do, and to stop/start those that are moving. Also you can set how high you want a door to go now. With these new map designs all the maps are slowly being redone (Only up to map7 are complete right now) but soon all will be.
* You can now crouch under blocks effectively and all game mechanics still work fine at the crouched level.
* Door moving sounds is reverted back to the original sound, but more new sounds and all new music is added making the game more awesome. Also more new wall types to spice it up even more so. Also new teleporter textures to show which is in, and which is out.
* The mouse wheel now switches between weapons as well.
* Enemy eyesight is now fixed for all cases
* Random critical hits are now implemented, and will be another thing you can increase the chance of happening in the future with weapon upgrade points. These come with a new sound, new texture of blood spray, and a knockback effect. Yeah buddy!
* New voice acting… thank God!
* A new aesthetic item (bone pile)
* Bosses now shoot all types of projectiles at player to make it interesting.
* **Version 1.7 Alpha (December 7th, 2018):**
  + **Multiplayer works but not in a deathmatch format. Something with synchronization of variables. Will figure this out eventually.**
  + **Tons of optimizations to the renderer and such to make the game faster.**
  + **Drunk mode added when too much beer is drank by the player.**
  + **To be honest it took so long for this to come out I cannot remember everything added to this version. I’ve kind of gotten lazy on this project.**