

Introduction

In order to design games, it is important to note what avenue of [game design] you wish to pursue, as there are multiple paths that can be taken (*and are required*), to [design a game]. Some of those avenues are:

application development	computer science	mathematics	physics	assets	graphics
content	design philosophy	gameplay mechanics	publication	marketing	distribution

In this particular study, we will be focusing on a study sample called [Quake III Arena], which was developed by [id Software] and released in [December 1999].

This game had [(cutting/bleeding) edge] graphics that pushed the limits of what computer games could do.

It required a special piece of PC hardware called a [graphics card], which in (1999), would utilize either a (PCI/peripheral component interconnect) slot, or an (AGP/accelerated graphics port) slot.

We won't be covering the history of [id Software], nor the number of games it has made that led to the creation of [Quake III Arena], however... as stated, the game pushed the limits of what computer games could do in many various ways.

It is worth mentioning that the game retains quite a lot of charm and character that has prevailed over the course of the last (24) years.

Introduction

Objective

The objective of this document, is to cover the many things that go into creating a level for [Quake III Arena], as well as the necessary tools and skills to build a level with [replayability], and [competitiveness] to it.

First and foremost, I covered a lot of concepts related to [Quake III Arena] and [GtkRadiant], here. <https://github.com/mcc85s/FightingEntropy/tree/main/Video/GtkRadiant>

[GtkRadiant] is the level editor for [Quake III Arena], though I will be covering additional level design concepts with an alternative that is based on [GtkRadiant], called [NetRadiant].

As for the link above, what I did NOT cover, was [HOW] gameplay mechanics are the reason why the game has retained its [charm] and [character] over the course of the last (24) years or so.

Unlike its predecessors [Doom I + II], and [Quake I + II], the game can be configured to utilize custom resolutions and high graphics settings that allow it to run in (HD/high definition) without modifying the game, or its content.

While there have been many games released by [id Software] since (1999) that have better:

graphics	lighting	shading	animations	et cetera
----------	----------	---------	------------	-----------

...every single one of them is based on a [very heavily modified version] of the [Q3A] engine, such as:

- [+] [Return to Castle Wolfenstein, Enemy Territory, Wolfenstein, The New Order, The Old Blood, The New Colossus]
- [+] [Doom III + Ressurrection of Evil]
- [+] [Rage I + II]
- [+] [Doom 2016 + Eternal]
- [+] [Quake IV + Champions]

Given its age, the game runs *relatively well* on *older hardware*, and still retains quite a lot of chess-like characteristics. Its' many modes of play range from:

Free-for-all/Deathmatch	Tournament/1v1	Team Deathmatch/TDM	Capture the flag/CTF
-------------------------	----------------	---------------------	----------------------

There is plenty of debate on which mode is the [most popular] or the “best”...

...but make no mistake, its' [Tournament/1v1] mode cemented its position at a large number of yearly [QuakeCon] events, and is synonymous with [Quake Live]... since it is the [same exact game].

It also resurfaced as a staple of [Quake Champions] with the advent of [Overwatch], [Fortnite], and [Player Unknown Battlegrounds].

To narrow the objective even further, we'll be focusing on [Tournament/1v1] mode, as well as how to make a really

(cool + fun) level for it, that focuses on aspects of the [mode] and the [game], in order to produce something that is *incredibly polished*.

In order to complete the [objective], we should first analyze a number of [tournament maps], and describe them all in a way where their [strengths] and [weaknesses] can evoke a sense of “common denominators” that will be key in [shaping], [designing], and [developing] the level, in the editor.

Analysis

Objective

While the original [Quake III Arena] has a lot of tournament maps in it, [Quake III Team Arena] introduced a handful of maps that I think *really* illustrates [what to do], and [what NOT to do], in [designing levels] for the particular mode in question.

Date	Title	Name	Link	Record	Rating
08/26/2023	House of Decay	mptourney1	https://youtu.be/y-SgDVzWdGw	1m 19s	10/10
08/26/2023	Death Factory	mptourney2	https://youtu.be/7_Jh6HLvjBE	1m 45s	5/10
08/26/2023	Temple of Pain	mptourney3	https://youtu.be/g6W5opegQ3Y	1m 47s	7/10
08/26/2023	Evil Playground	mptourney4	https://youtu.be/HBde-PjqTF4	1m 09s	10/10

So, allow me to explain each levels [strengths] and [weaknesses], and at some point, I will talk about each map in further detail, by providing commentary in a video that focuses on the [layout] and [item placement].

House of Decay/mptourney1

This map is without a doubt, [extremely well made]. It is *small* enough to have a *strong focus* on (3) different weapons, and provides a really strong emphasis on [aesthetics] and [geometry] to allow the [gameplay] to swing in either direction.

This map was remade for [Quake Live], and has other items added to it which take away from the charm of the original. It probably goes without saying... but this is one of my *favorite maps*, above ALL of the original [pro-q3dm/pro-q3tourney] maps. (...and that's saying something)

Death Factory/mptourney2

Reminds me of (Base Siege/mpteam1), and feels like a recycled version of that map.

While that's not exactly a bad thing, as it is common for a [game developer] to recycle [assets] and attempt to reuse those [assets] with a *slightly* different twist... in this instance, there are a lot of *shortcomings* to this map that I don't particularly care for, given that it is a *tournament* map.

It is [too big] to be a *tournament* map. It has *too many spawn points*, and is better suited for [FFA/Deathmatch]. If it were an [FFA] map...? This map would get about a (7-8) out of (10).

As it stands, the [middle tier] is disconnected from the [top tier].

This forces the players to have to use [jump pads] to traverse from [tier] to [tier], which [exposes] a player to be [quite vulnerable] when they use them... which can be seen in the video link above.

The [jump pads] are a *serious* sticking point, here... because this map would actually score a LOT higher as a [tournament] map if there were stairs on *both sides* to connect the [middle tier] to the [top tier], because at that point, the [multi-tiered combat] would be [far more cohesive] and a [lot less predictable].

This point alone, though incredibly small... can be the [difference] between whether it [makes] or [breaks] a level. Simply put, [the map isn't badly made at all], but considering that it is named “mptourney2”... ...it does not feel like a great [1v1] map.

I have to tank its score a lot, because it would've made [more sense] to add some stairs to connect the [middle] and [top tier], or instead, *use another map in the rotation*.

Temple of Pain/mptourney3

I have *mixed feelings* about this map, because it has areas that feel very *claustrophobic*, and it has a rather simple [item placement] which does not promote a healthy [multi-tiered experience].

However, the map [looks really awesome]. Problem is, [looks aren't everything], because there's just some things about this map that don't make much *practical* sense in a [tournament map].

The [rocket launcher], [nailgun], and [shotgun] are all very *close* to each other, and the [railgun] is the *only weapon* on that side of the map. This would've been a much better map if it made *better* use of the [courtyard area], by adding some stairs and ledges and a [bridge] to where the [armor] is... in addition to providing other ways to get to either side of the map from that [higher tier], as this would've given the map a lot more [depth].

Eliminating the hallway to the [nailgun] ammunition, OR, providing an alternate way to (access/traverse from) the [railgun] tower (from/to) that hallway, would've made perfect sense.

| Evil Playground/mptourney4 |

This map is without a doubt, [extremely well made]. It isn't as small as [House of Decay], but it has a really well thought out approach to [multi-tiered combat], which is a signature of extremely well made maps. The only thing that I do not like about this map, is the fact that it has [death pits], and they're pretty annoying.

However, that's just a pet peeve at this point, because I'm not going to tank its score based on that... The combat is [extremely fun], [challenging], and the [pendulum of fairness] can swing in either direction- which is an indication of an [extremely well made tournament map].

Analysis

Common Denominators

So, what ARE the [common denominators] in the levels I discussed...?

- [+] [multi-tiered combat]
- [+] [effective use of geometry/texturing/space/lighting]
- [+] [effective item placement]

What I will do, is talk about these concepts in great detail BEFORE coming up with a [design philosophy] to create a map... and then to texture, shape, sculpt, modify, populate, light, and (compile/render) the map.

If any of these things aren't up to snuff or are out of place...?
[It will adversely impact its' performance].

The [mapping process] takes a while to complete, and typically speaking, without a lot of experience, you won't be able to create a [really good map] in a single day. Even the map that I made in a single day in this particular video...

Date	Title	Name	Link
07/17/2023	07/17/2023 - Test Map	2023_0717-(testmap3)	[https://youtu.be/cbdJ-rWJbVI]

... isn't finished. Ever since I created that level, I've thought about changing things in it to make it more fun to play. As it stands, it has some issues that stem from [being incomplete]. I wouldn't expect it to get a (10/10) like [mptourney1] or [mptourney4].

However, there is an issue about that map which leads me to believe that no amount of changes will be able to make it a [viable competitive level]. And, the issue that leads me to believe as such, stems from...

... the [structure] of the map.

Common Denominators

The Edge of Forever

A man by the name of [Carl Sagan], a famed [science communicator] that won a [Pulitzer prize] for his books [The Dragons of Eden], and for [Cosmos: A Personal Voyage] once raised an analogy called...

[Flatland].
And in this [Flatland] analogy from his show [Cosmos: A Personal Voyage]...

Date	Title	Link
11/30/1980	Cosmos - The Edge of Forever	[https://youtu.be/UnURElCzGc0]

... the man talks about how inhabitants of [Flatland] are about as [flat] as can be.

They go about their [flat business].
They go in and out of their [flat houses].
Driving around in their [flat cars].

They take part in [flat parties] and [eat flat food], they [breathe flat air].
All of their friends are [flat], too.

[Everything they do, is about as flat, as flat could possibly even be] ...
Sounds pretty [flat], doesn't it...?

Yeah, well, [John Carmack] and [John Romero] probably grew up playing [Atari] for years, watching [Carl Sagan] in this show [Cosmos: A Personal Voyage], until they eventually said to each other...

| (2) Johns |

[Carmack] : Hey [John] ...
[Romero] : What's up, [John] ... ?
[Carmack] : Ya know, I was thinking a lot about making a game.
[Romero] : Oh yeh ... ?
[Carmack] : Yeh.
[Romero] : Buddy, there's a LOT of games out there.
[Carmack] : Oh, I know, [John].
But- they all have (1) thing in common.
[Romero] : ... oh yeh ... ?
[Carmack] : Yeh.
[Romero] : Well, [John] ...
Do tell.
What do they all have in common ... ?
[Carmack] : They're all pretty [flat].
[Romero] : ... I was thinking the same thing, dude ...
[Carmack] : ... and I want to make a game that's NOT [flat].
[Romero] : ... really ... ?
[Carmack] : Yeh.
[Romero] : ... nobody has ever done that before.
[Carmack] : I know.
What if we made the [first game in existence], that wasn't [flat] ... ?
[Romero] : **long hard stare**
... dude ...
[Carmack] : I could totally do it, bro.
[Romero] : Nobody's ever done it before, though.
[Carmack] : Oh, I know, [John].
I know.
But- I believe in myself, [John].
[Romero] : Well, buddy, I believe in you too, but-
[Carmack] : **long hard stare**
It'll change the entire way games are played, [John].
[Romero] : Yeh.
But, you would need to be a genius to pull that off ...
[Carmack] : You sayin' I'm not a genius or somethin' ... ?
adjusts glasses, long hard stare
[Romero] : Nah, never said that.
Just sayin', you'd have your work cut out for you, [John].
[Carmack] : I was thinkin', [Wolfenstein 3D].
[Romero] : ... that'd be pretty cool.
[Carmack] : Yeh, escaping from the clutches of the nazi's.
[B.J. Blazkowicz].
[Romero] : That sounds intense.
Count me in.

And from that day forward, [(2) Johns] took an oath to embark on a journey to make a game that had [depth], as they went about changing the entire way that games were played by people all around the world.

(It's worth noting that there were ALSO [(2) Carmacks] ...)

They actually did this with the games [Hovertank 3D] and [Catacombs 3D], but that wasn't enough ...
They did this again with [Wolfenstein 3D], but that wasn't enough, either ...
Then, they did it AGAIN, with [Doom].

[Doom] raised the bar to such an immensely high level, that the game actually had [horizontal + vertical depth].

But then, in (1996), with the release of a cool game called [Quake], they permanently impacted the world by making the first FPS that was truly [3D], and wasn't [flat] ... (though [Descent] from (1995) officially holds that title, [Descent]'s gameplay was *(fun, but) quite disorienting.*)

Because in it, there were [rooms above and below other rooms], which [Doom] was unable to do.

In [Doom], and [Doom clones] like [Duke Nukem 3D], [Shadow Warrior], [Dark Forces], et cetera ...
... there had been a limitation to where the [Z-buffer] could not allow multiple rooms to be stacked *above* or *below* one another without some sort of [hacky view portal magic].

With [Quake], [hacky view portal magic] became a thing of the past.

| Comparing to Flatland |

In reference to [Flatland], the same sort of thing happened.

One day, a 3-dimensional creature represented by a sphere, decided to pass through [Flatland] ...
... not unlike the idea that [John Carmack] had, to create the first 3-dimensional game ...
... and that's when the 2-dimensional flatlanders saw slices of the 3-dimensional sphere ...
... not unlike when [id Software] made multiple games that capitalized on more aspects of [depth] ...

Now remember, [flatlanders] can't actually see the full, third dimension of [depth].
Not unless they remember each prior layer of the sphere.

Because, what [they] see, are *individual layers of that sphere*...
Not unlike when people saw each individual game that [id Software] made.

At first, the [circle] appeared as a little dot.
But after a while... the [circle] got *bigger and bigger*.
Not unlike how the games [id Software] kept making, got *bigger and bigger*...

A [sphere] appears out of thin [flat] air as a [circle], and grows to a *pretty large size*.
Not unlike how [id Software] grew into an *industry giant*...

At which point, the [flatlanders] who saw the [sphere] pass through their dimension, they began to question their [flat] sanity, asking each other:

[Flatlanders] : Just what the [flat] is goin' on around here...?

The answer, is that nobody in [Flatland] really knew what the hell was going on...
Because, they didn't understand [depth].

But in [Quake III Arena] ...?
[That's what the game was designed to take advantage of].

Mechanics

The Edge of Forever

In order to understand how to make the best use of the [space] in a particular map...

...well, a lot of [trial and error] is in order, before anyone has a great idea of how to do that, as well as how to *arrange* the [items] in that map.

For instance, in [House of Decay/mptourney1], there's a lot of *areas* and *choke points* that allow each weapon to be *better suited* for the situation.

You *wouldn't* want to use the [rocket launcher] if you're in the hallway...
...*unless* you're [aiming the rockets a fair distance away].

You *wouldn't* want to use the [plasmagun] from a fair distance away...
...*unless* you know the opponent is [running in a predictable manner].

You *wouldn't* want to use the [lightning gun] from a fair distance away...
...*unless* you can [close in that particular distance].

There are [strengths] and [weaknesses] to each particular gun that aren't *readily apparent*.
So, let's talk about [weapon mechanics].

Weapon Mechanics : In [Quake III (Arena/Team Arena)], there are a number of weapons

gauntlet | machinegun | shotgun | grenade launcher | rocket launcher | lightning gun | plasmagun | BFG10K
nailgun | proximity mine launcher | chaingun

Gauntlet / ∞

This is only useful if you're in [close proximity] to the [opponent], otherwise it isn't.

While you do not need any *ammunition* for this gun (*since it isn't a gun*)...
...it does not do *ANY* damage at all, unless you're literally *touching an opponent* with it.

[+] [good for close up fights, does (50) damage]
[+] [unlimited uses (hence ∞)]
[-] [can only use in (close proximity)]

Machinegun / Bullets

This is [extremely useful], in basically any scenario, but it does not do a lot of damage unless you are *accurate and consistently hitting the target*.

[+] [good for general purpose, does (7) damage]
[=] [spawn with (100) rounds each time]
[-] [not great against more powerful weapons]

| Shotgun / Shells |

This is moderately useful in scenarios from low to mid range.
It shoots (10) pellets per [shell], which each do (10) damage.

- [+] [great for low range]
- [=] [start with (10) rounds on pickup, (10) for shell pickup]
- [=] [less great for mid range]
- [-] [poor for long range]

| Grenade Launcher / Grenades |

This is *not very useful for most situations*, but is [extremely useful] in [close proximity].

The [grenades] *bounce* and *linger* until they explode, or they explode if they land on an enemy.
They do splash damage to enemies, OR they will do (100) damage upon impact.

- [+] [pretty useful if you have nothing better]
- [+] [can be used for a grenade jump (*not exactly easy*)]
- [+] [great for close quarters, but ...]
- [-] [they do splash damage, which can hurt you]
- [=] [start with (10) grenades, (5) per grenade pickup]

| Rocket Launcher / Rockets |

This is basically the main weapon in the game, and it is the staple of the [Quake] series.

This shoots a [rocket] which does either *splash damage*, or (100) *direct damage* if they hit an *enemy*.
This can be used *mid-long range*, but *short range* is *risky*.

- [+] [mainstay of the game, staple of the series]
- [+] [great for mid-long range]
- [+] [can be used to rocket jump, but ...]
- [-] [does splash damage, which can hurt you]
- [=] [start with (10) rockets, (5) per rocket pickup]

| Lightning Gun / Lightning |

This gun does a *lot* of damage in *short-mid range*, but is *completely useless long range*.
Does not do any *splash damage*, nor can it provide any *movement advantage*.

- [+] [extremely useful in tight situations]
- [+] [does a lot of damage fast]
- [-] [uses a lot of ammo fast]
- [=] [start with (100) lightning, (60) per lightning pickup]

| Plasmagun / Plasma |

This gun is *really useful for mid range*, though it can ALSO be used effectively in *short* or *long range*, depending on whether the user can sufficiently track the movement of a target.

- [+] [does a lot of damage pretty fast]
- [+] [really useful in all scenarios, but requires practice]
- [=] [start with (50) plasma, (30) per plasma pickup]
- [-] [does splash damage, which can hurt you]
- [=] [can be used to scale walls (*plasma climbing*)]

| BFG10K / BFG ammo |

This gun is basically a *rapid-fire* version of the [rocket launcher].

It carries many of the same characteristics, but its rounds move faster than [rockets].
Typically, this would NOT be a good choice to include in a tournament level, as it makes the game quite *unfair*.

- [+] [does an *extreme* amount of damage]
- [-] [does splash damage, which can hurt you]
- [=] [can be used to do the same thing as rocket jumping]
- [=] [start with (10) BFG ammo, (15) per BFG ammo pickup]

Nailgun / Nails

The [nailgun] is *only* available in [Quake III Team Arena], but it is *pretty useful*. Its' *only* application in *any* tournament level that I am aware of, is [Temple of Pain].

- [+] [does an extreme amount of damage if all nails hit the target]
- [+] [best for close range, but ...]
- [-] [not so much for mid-long range]
- [=] [start with (10) nails, (15) per nails pickup]

Proximity Mine Launcher / Proximity Mines

The proximity mine launcher is *only* available in [Quake III Team Arena], and not applicable to a tournament level, so I won't talk about it in this document.

Chaingun / Rounds

The chaingun is *only* available in [Quake III Team Arena], and not exactly applicable to a tournament level, however- with custom maps this *COULD* be pretty useful in tournament mode.

Still, since that would drastically change the dynamics of [1v1], I won't cover that in this document.

End of [weapon mechanics], extended guide here: [https://strategywiki.org/wiki/Quake_III_Arena/Weapons]

Item Mechanics : In [Quake III (Arena/Team Arena)], there are a number of items

Health | Armor | Usable | Powerups | Runes | Note: \leq means less than or equal to

Health

- [+] [small health] : adds (5) \leq (200)
- [+] [medium health] : adds (25) \leq (100)
- [+] [large health] : adds (50) \leq (100)
- [+] [megahealth] : adds (100) \leq (200)

Armor

- [+] [armor shard] : adds (5) \leq (200)
- [+] [yellow armor] : adds (50) \leq (200)
- [+] [red armor] : adds (100) \leq (200)

Usable

- [+] [teleporter] : activate to *transport* to a *random spawn point*
- [+] [medkit] : *raises health* to (125)
- [+] [*invulnerability] : activate to *freeze position + deflect all attacks* for (10s)
- [+] [*kamikaze] : can be *detonated*, or *self detonates* if killed but not gibbed

Powerups

- [+] [battle suit] : *reduces direct damage*, *deflects splash damage*
- [+] [flight] : *ignore gravity*
- [+] [haste] : *move and shoot a lot faster*
- [+] [invisibility] : *become harder to see*
- [+] [quad damage] : *increases all outgoing damage* by (3x) (by *default*, not 4x)
- [+] [regeneration] : *adds health* for every second (25) \leq (100), (5) \leq (200)

Runes

- [+] [scout] : *similar to haste*, cannot pick up armor (*possessed armor is removed*)
- [+] [doubler] : *increases all outgoing damage* by (2x)
- [+] [guard] : sets (health + armor) to (200), *regenerates health* to (200) if damaged
- [+] [ammo-regen] : *regenerates ammunition* and *increases fire rate*

Strategies

There are a number of *strategies* that can be used in [Quake III (Arena/Team Arena)] that aren't *readily apparent*, and I will not go into *great depth* about them, because the *geometry* of any given map actually changes the *strategies* that can be used, in a variety of ways.

[Choke points] are *pretty good* to use, [bunny hopping + strafe jumping] are also good to use. [Rocket jumps] can be useful.

[Plasma wall boosting] can also be useful... but there are a lot of other strategies which just won't be *visually apparent*, unless the [shape] of the map provides a *distinct scenario*.

Now, I'm going to cover *some of the strategies* that I used, in the videos I already listed.

Date	Title	Name	Link
08/26/2023	Evil Playground	mptourney4	https://youtu.be/HBde-PjqTF4

... one of the strategies that I used is [mimicing the enemy's movements] to pelt [James] with a *barrage of machinegun bullets* in the beginning of the match. [This is a general strategy].

Another *strategy* that I used was [switching weapons to get combination hits], another [general strategy].

Another *strategy* that I used was [positioning myself in certain locations of the map], so that I could hear where [James] was spawning, another [general strategy].

Another *strategy* that I used was using the [railgun] and then [shooting predictive rockets] at an [item] I knew [James] was running to, another [general strategy].

These *strategies* wouldn't necessarily work against a [human opponent], but they'll work for a [bot] because *they typically run the same patterns*.

Date	Title	Name	Link
08/26/2023	House of Decay	mptourney1	https://youtu.be/y-SgDVzWdGw

Using the [combination weapon strategy] is *harder* to pull off because the [rocket launcher] is sorta slow, and the [lightning] and [plasmagun] do a somewhat equivalent rate of damage.

Using the [spawn location positioning strategy] is *harder* to pull off, because in certain positions, it is *impossible* to hear where [Fritzkrieg] is spawning.

Generally speaking, there is a *formula* to it, but it is *STILL* rather *random*, and depends on *where the player is on the map when they kill the bot*, as well as *where the bot is when they die*... and I think it *randomly* selects that location, depending on *where the player is at the time of respawn*.

However, using [choking strategies] is *far more effective* in this map, because of the *tight hallways*. This is able to be seen quite a lot in that video.

Date	Title	Name	Link
08/26/2023	Death Factory	mptourney2	https://youtu.be/7_Jh6HLvjBE

[Pi]'s movement is *incredibly predictable*, but her [spawning location] is completely *random*, and there are a LOT more [spawn points] in these (2) maps, than the (2) I just covered.

First off, if it is true that [Death Factory] has a lot of [spawn points], the best thing to do... is to *guard items*.

In all (4) of these levels, there is a *consistent amount of effort* going into [picking up health and armor].

That is a [general strategy], and it is a *core central focus* to this *game*, just like collecting [minerals] and [vespene gas] is, in [Starcraft]. [Health] and [armor] are basically [resources] in this game.

What is not *readily apparent*, is that [time] is ALSO a [resource] in this game.

With that said, having a [collection route] is *pretty important*.

You want to be able to [guarantee] that you *control the items*, and that *the enemy does not*.

If you are able to do this, then you will always have an [advantage] over the [opponent], because they will have to *struggle* to keep up... but- if they are just *a lot more accurate* and *deadly* than you, then even [item control] may not necessarily guarantee a win.

In [Death Factory], [Pi] is constantly going up the *jump pads*, and sort of *lingers around the same areas*.

Using that as a known [fact], that allows me to *collect the necessary weapons*, and then guard certain areas... particularly the [rocket launcher] area.

Going for the [railgun] in this level is a bit of a chore.
So is going for the [shotgun], and even the [grenade launcher] if I'll be perfectly honest.

However, all it takes, is to collect the (2) [yellow armors] and the [rocket launcher], in order to be at a serious advantage. Then, depending on the approach, collect the [railgun], [shotgun] and [grenade launcher] in a syncopated rhythm, that way [Pi] will constantly be on the [backfoot].

The [backfoot], or [backpedaling] is a term for having to run away from a confrontation, rather than to engage in one. This can actually be a [very effective strategy] for [psychological manipulation] of an opponent that has [item control], though... a bot will NOT know how to do this to attain an advantage. Only a human will.

Despite all of this, even though [Death Factory] is NOT a favorite level of mine, I still know how to navigate the map in order to have some knowledge of where [Pi] will go, or won't go. Or, what situations I'll be at a disadvantage to put myself in.

One such disadvantage, is allowing [Pi] to collect the [railgun], because ALL bots on [nightmare] have an incredibly deadly level of accuracy with the [railgun].

Short of that, collecting items and then posting up in certain locations is an [incredibly useful strategy].

Date	Title	Name	Link
08/26/2023	Temple of Pain	mptourney3	https://youtu.be/g6W5opegQ3Y

So, in [Temple of Pain], [Janet] is pretty predictable.

However, the [item placement] is really crowded on (1) side of the map, and pretty sparse on the other.

With [Death Factory], a couple of [stairwells] from the [middle tier] to the [top tier] would make all the difference in the world, to make it a far more competitive [tournament] level.

In [Temple of Pain], a lot more geometry should've been used, to make the level feel more [vertical].

[Multi-tiered] levels are a lot more enjoyable, because it gives the players more real estate to cover, in order to retain [item control].

In this particular map, [item control] is pretty easy to do...
...what is NOT so easy, is avoiding [railgun] shots from [Janet]...
...because she will occasionally spawn next to the [railgun], and there's only a [yellow armor] and some [armor shards] in the level, that give any player a way to protect themselves from up to (2) shots.

In this level, it is [EXTREMELY DIFFICULT] to avoid being railed twice in a row by a bot on [nightmare], if they happen to have the [railgun].

So, what that means, is that the entire focus of the level, is to prevent [Janet] from getting it.

Or, if she does get it... then, use the [geometry] of the level that is essentially only (1.5) tiers tall.

I would NOT call this a [multi-tiered] level at all, even though there clearly are (2) tiers.

The reason I would prefer not to call it a (2) tier level, is because the [first tier] is really short.

Whereas, in [House of Decay], there are definitely (3) tiers... though, the [bottom tier] is limited to a pool of water, that's where the armor is.

Nobody will WANT to go there, if it is not there, because of how [VULNERABLE] they will be, in that position.

However, in [Temple of Pain], the only real vertical gameplay you get, is if you use the jump pads...
And on one side of the map, the vertical gameplay is limited to the room with the [railgun].

Vertical Gameplay

Strategies

I may have mentioned numerous times that [multi-tiered] levels are pretty clutch, and essential to a map having a [replayability] factor to it. When taking a closer look at the tournament levels from [Quake III Arena]...

Title	Name	Rating
Powerstation 0218	q3tourney1	5/10
The Proving Grounds	q3tourney2	9/10
The Camping Grounds	q3dm6/pro-q3dm6	9/10
Hell's Gate	q3tourney3	6/10
Vertical Vengeance	q3tourney4/pro-q3tourney4	10/10
Lost World	q3dm13/pro-q3dm13	9/10
Fatal Instinct	q3tourney5	6/10
The Very End Of You	q3tourney6	4/10

| Powerstation 0218/q3tourney1 |

This map has NO *vertical gameplay*, and it would really benefit from having some.

Might even be pretty easy to implement a way for that to be a thing.

Otherwise, the level [LOOKS really nice], which goes a long way in receiving a mediocre score, but the general flow of the map feels very, very [flat]. That's because [the gameplay certainly is].

[Sarge] is not a tough opponent, even on [Sarge] difficulty.

| The Proving Grounds/q3tourney2 |

This map HAS *vertical gameplay*, especially in the [rocket launcher] area, but also the stairwells.

This map was part of [Q3Test], and left a *pretty deep impression on me* long before the full game was released. This map [looks great], [plays great], and is *pretty tough* against [Hunter].

There's really not a whole lot more to ask for, from a [competitive level].

| The Camping Grounds/(q3dm6/pro-q3dm6) |

The default [q3dm6] isn't even a tournament level, but it *definitely plays like one*. The [item placement] is different in [pro-q3dm6], which IS a tournament map.

It has a lot of *vertical gameplay*, and... *I would encourage people to take inspiration from this map*, how it's [made], how it [flows], and how it [plays]... if you want to build a *really great level*.

| Hell's Gate/q3tourney3 |

While [q3tourney3] DOES have a couple of tiers, it feels a lot like [Temple of Pain].

It has [death pits] which I don't particularly care for, and *isn't a very competitive tournament level*.

With some changes, it probably could be made to be more enjoyable, but I doubt anyone's going to give it a touch up after (24) years.

| Vertical Vengeance/(q3tourney4/pro-q3tourney4) |

This map, has vertical in the name of the map.

Both versions are geared for tournament play, and they differ to a *great degree* with the addition of the [teleporter] in the pro version, as well as [items] being placed in different locations.

This is, by far, [one of my favorite tournament levels]...

But- the *texturing* in this level hasn't aged well.

| Lost World/(q3dm13/pro-q3dm13) |

This map is really, really good.

It has a lot of *vertical gameplay* to it, it also boasts a slew of *alcoves*, *hallways*, and ways to navigate from one end to the other, without feeling like you HAVE to go a specific route to get from point A to B.

This was played a lot in [Quake Live], and it's a staple to the game.

| Fatal Instinct/q3tourney5 |

This level does have *multiple tiers*, but it feels a lot like [Dead Simple] from [Doom].

This [level design philosophy] with the *fog* preventing someone from being able to *see an opponent* that's too far away DOES give the map some *charming dynamics* that are rather unique. However, it's a bit of a *gimmick*, and it takes away from the enjoyment of the map as far as [professional tournament play] is concerned.

Also, [quad damage] should not be used in tournament levels.

The Very End Of You/q3tourney6

This level is also rather *gimmicky*, has a [BFG] in it, and it's *pretty easy* to fall off into the void.

I would never think to play this on a *server*, against a *human player* in [tournament mode]... but it does look pretty cool, and it is pretty cool as a final boss level.

While it does have some *vertical gameplay*, it doesn't have the type of *vertical gameplay* that the other (4) space maps have...

Title	Name	Rating
Bouncy Map	q3dm16	8/10
The Longest Yard	q3dm17	10/10
Space Chamber	q3dm18	8/10
Apocalypse Void	q3dm19	7/10

I'm not going to discuss these levels at great length, but they all have *plenty of vertical gameplay*.

[Multi-tiered combat] isn't everything, however.

[Item placement] is pretty important, but also...

So is the [bot behavior], or just *general all-around mechanics* going on in the map.

[Bouncy Map] is fun, but the *lighting* is pretty [flat].

[The Longest Yard] is fun, but the bots are *pretty tough* when they have the [railgun].

[Space Chamber] is fun, but it is *wicked annoying* because of how many ways you can *fall into the void*.

[Apocalypse Void] feels *really gimmicky*, and the platforms aren't much different than [jump pads].

While I really like [The Longest Yard] it is *not a very competitive tournament level* at all.

None of them really are.

However, [Space Station 1138] is a *pretty competitive space based tournament level* with *vertical gameplay*... I don't think it ever received a *title* or *designation* to where people would play it.

Typically speaking, most community maps that are made for the game don't get a lot of credit or acclaim, and that's just how it's always been in the [Quake community]. Even really well made levels that got high ratings on [...:LvL] don't have a place where people flock to it, and play it in a *standard rotation*.

That's mainly because, in order to play custom levels, you have to fulfill a lot of *instructions*.

All things considered, I made [Space Station 1138] when I was (15) years old for a mapping competition, and the limitations were like (100) brushes I think.

Whereas the tournament levels in [Quake III Arena] and [Quake III Team Arena], those were part of an official game released by [id Software], so they're not going to pull any punches in publishing them.

Now, in order to build any level that will be a total success...?

It relies on the [initial shape of the map]...

...which requires some [graph paper], and *drawing it out*.

Shape

Vertical Gameplay

The [shaping] process can actually take (*days/weeks*), but the end result will be something *highly polished*, and this can be seen in a number of levels that were made for [Quake Live], like... [Furious Heights/Heavy Rain].

[Furious Heights/Heavy Rain] is one of the *coolest maps I've ever played*, it has a [general shape].

There's also [Aerowalk], though I believe that is a take on a [Quakeworld] level... that has a [shape] too.

Then there's also [Blood Run], which is the *most official tournament level I can think of* that was never a part of the game itself (...*though it IS part of [Quake Live]*). That too, has a [shape].

But- even if we take a look at [Quake II], and even [Quake I], there are plenty of examples of great maps there, too.

Title	Name	Rating
The Edge	q2dm1	10/10
Tokays Towers	q2dm2	8/10
The Frag Pipe	q2dm4	8/10
The Sewers	q2dm7	7/10
The Warehouse	q2dm8	10/10

There are even more from [Quake I] that I cannot remember for the life of me...
 ...but [Tim Willits] really knew what the hell he was doin', because I think he was responsible for many of these maps, especially [q2dm1].

People still play [q2dm1] competitively, it's a great example of a map that works for tournament and free-for-all, but every adaptation to [Quake III Arena] has been less than exhilarating than the original.

It has a lot of vertical gameplay to it, [multiple tiers], a pretty balanced layout, and it has a really unique shape to it that I've never seen be reproduced in a manner to where I was as impressed, or blown away.

[q2dm1] is by far, [one of the best maps I've ever seen].

And, even the rest of the maps I just listed, they're really good.

Even [The Pits/q2dm5] is good... it's just that some of these maps really delve into being a bit of a breathing entity itself, with an environment.

But NOW, the question is, how does one go about [creating the shape] for these maps...?

Well, imagine if you would, that you could have a conversation with [Carl Sagan] himself, and ask him how to build a 4-dimensional tesseract, and then build a level off of that.

That's sort of the process involved in making a really good level like the ones I just described.

There are a lot of others that I haven't mentioned, but I can't remember all of the really well-made levels I've played.

The bottom line, is that a good map has to have a [general flow] to it, where players can traverse the map in multiple ways. Further to that point, it has to be really polished, have a [good AMOUNT of flow to it], have the [items] placed in ways where it makes perfect sense, and is advantageous to the players... and then you have to top it all off with well executed aesthetics, geometry, and lighting.

All of these things are reasons why I really like [House of Decay], and [Evil Playground]. Cause they tick every single box, repeatedly.

Fact of the matter is, this process is different in its' [chronological execution], as the map is being built. There's really no one-size-fits-all approach, as every approach is rather unique and changes from one idea to the next.

[Graph paper] is a pretty great way to start out, because then you can layer the [graph paper] with additional shapes and such, and overlay them in order to get a "feel" for how the map is going to flow.

[Tokays Towers] is a great example of a level that has vertical gameplay down pat, and... to this day, I sometimes think about how I would go from one end of the map to the other, top to bottom, et cetera.

The only thing I never liked about it is [swimming through the water].

[Swimming through water] is NOT a good design philosophy in ANY tournament level...

Using [jump pads] is NOT a good design philosophy all the time, but it DOES allow the level creator to make better use of space.

Using little alcoves from one end of a map to another, to tuck away ammo boxes doesn't make a lot of sense in many cases... UNLESS those boxes of ammo just so happen to be conveniently placed along a path between [armor], [health], and [specific weapons].

Lastly, before I talk about applying all of these things in conjunction, I can't stress this enough...
 ...but, even if a map is shaped perfectly, and it is textured great, the aesthetics are awesome, the lighting is superb, and the [item placement] seems to be well-executed...
 ...a map can still suffer from [not being all that fun to play].

If people feel like the map is a chore to play...?

Then, [all of that hard work will have been for nothing].

As a general rule of thumb for shaping the level, think of really basic shapes like [squares], [rectangles], [beveled surfaces] and [curves], and incorporate them into the [bottom line structure of the map] BEFORE adding things like [trim], [edges], [light fixtures], [models], and things of that nature.

Because, a rough draft of a level doesn't even need to be textured or lit all that well, for a map to have some REALLY promising [gameplay] to it. The point being, creating the [structure] of the map AROUND the [item placement], and [item control]... is a really good idea.

Expert Level

Shape

Date	Name	Link	Duration
08/06/2016	QuakeCon 2016 - Rapha vs Evil	https://youtu.be/tU6v8C1pw8Y	01:11:04

This is, perhaps, one of the *best matches I've ever seen* from the [Q3A/Quake Live] community, and I'll explain in *further detail* how *intense* the [gameplay] between these (2) players truly is, as well as the [meticulous level of detail] in the maps that they play...

Round	Name	Rating
(1)	Sinister	10/10
(2)	Elder	10/10
(3)	Blood Run (Intel)	10/10
(4)	Furious Heights "Heavy Rain"	10/10

...as they very clearly illustrate, [expert-level game design]. But- this video throws it into overdrive, by showing the [expert-level game-playing capabilities] of the players.

[Players + Commentators]			
Name	Role	Nick	Country
Shane Hendrixson	Player[1]	rapha	United States
Sergey Orekhov	Player[2]	evil	Russia
Daniel Kapadia	Commentator[1]	DDK	England
Xavier Dhorne	Commentator[2]	Zoot	England

So, while this is somewhat of a segue into showing how to use (GtkRadiant/NetRadiant), I believe that this video (*illustrates/demonstrates*) what makes the game [well made].

What I will do, is *play the video in its entirety*, and provide SOME commentary as the match plays out...
...as I will *unpack* and *examine* the [details] in [each map], as well as the [strategies] that these (2) players use in this matchup.

But first- as stated in [Game Design (Part I)], there are a LOT of games with better [graphics], [geometry], [textures], [animations], [lighting], and et cetera, than [Quake 3 Arena].

However, one thing that I have noticed with [many newer games], is that they are either: [overproduced] or [overengineered], which effectively resolves to being [overproduced].

[Overproduction] is a term for something that has [too many details] that can serve to be a [distraction], and it takes away from the [raw elements] of what makes a game [simple].

As one relatively powerful statement comes into mind...
[Simplicity is the ultimate form of sophistication].

Let the games begin.

Date	Name	Link	Duration
09/04/2023	2023_0904-(Rapha vs Evil)	[https://youtu.be/HiNhrH-eD4g]	02:09:37

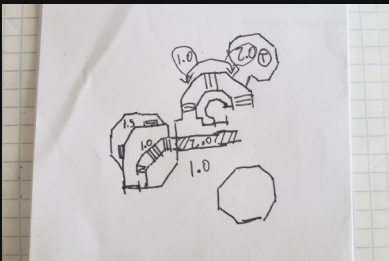
Rough Sketches

Expert Level

So, between (08/31/2023) and (09/08/2023), I came up with these [rough sketches] for a level I intend to *design* and *build*, with [GtkRadiant]. The theme in my head, is a mixture of SOME *outside terrain*, with some *gothic-styled battlements* that are reminiscent of a [castle].

However, I haven't touched [GtkRadiant] quite yet to figure out anything beyond that.

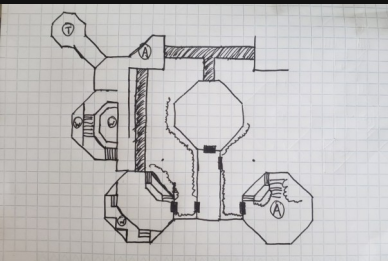
[First sketch]



[Second sketch]



[Third sketch]



Now, one thing to keep in mind, is that *the sketches aren't finished*. And that is because... if I were to put a whole lot more thought to what's happening in the [sketch] without at least *testing it out in the editor*, I would draw stuff that may get *scrapped* outright, and that is a *waste of time and effort*.

It's important to [draw things out], at least *partially*, before *committing* to a *full-blown overview diagram of doom*.

About Doom

You see, [John Carmack] had a great idea, he wanted to be the lead programmer of [Doom]. So then he could look at himself in the mirror, and brag about it...

```
[Carmack] : *looking into the mirror*
           Heh.
           I'm the lead programmer of [Doom]...
           ...and [Quake] ...
           ...and [Wolfenstein] ...
           ...and [Rage] ...
           I might play games, and I might build games...
           But when it comes to building games...?
           ...I don't play games.
```

Nobody was in earshot when [John Carmack] probably said all of these things... but, those things are all true.

I like to add the phrase "*of doom*" at the end of stuff, to capitalize its significance. But sometimes I will do that to something that is *incredibly mundane, normal, boring, or otherwise ordinary*... to spice things up, and make it sound *far more dramatic* than it really is, by adding those (2) little words.

The graph paper... *of doom*.
The full-blown overview diagram... *of doom*.
The paper plate... *of doom*.
The hallway... *of doom*.
Lead programmer... *of doom*.

If you use it too often, it may start to lose its' appeal, but...
Sometimes people will catch on, and start adding the phrase in the middle of a conversation...

```
[Me]      : Hey.
[Somebody]: OoooOoooHhh, let me guess.
           You're writing a lesson plan... of doom?
[Me]      : *long pause, hard stare*
           ...yeh.
           Way to rip the wind out of my sails, dude...
```

Analysis

The [first sketch] shows a really rough drawing that has some general shapes, and I like using (hexagons/octagons), though there aren't any hexagons there quite yet.

The [second sketch] is *expanded with a bit more detail*, and that's when I came up with the idea for the *terrain*, since *terrain* is typically reserved for *outside areas* AFTER a map is built... I figured, why not incorporate it into the design...?

The [third sketch] is basically a *more spaced-out, larger* version of the [second sketch], albeit *rotated* so that I could focus on *adding details* when I go to *build it in the editor*, and I like what I'm building.

It's important to be *pretty flexible* when converting a [sketch] into a [map], because *many aspects* of what has been *drawn* may need to be (lengthened/shortened), or (expanded/reduced).

Besides all of that, the [squiggly lines] are meant to represent the [terrain].

The diagonal lines are meant to represent [bridges/catwalks] for the players to navigate the upper areas.

The (W) represents a weapon, (A) represents armor, and (T) represents a teleporter, though it may be difficult to see those details from the reduced size of the images (...I will eventually upload the originals).

I tried to *incorporate numbers* in the [first sketch] to represent the [height factor] for each tier, though it's *too early* to try and do that yet. It's ALSO *too early* to figure out what weapons go where, as I may adjust those details when I go to *develop the map*.

This is a far cry from the process that I used in this particular video...

Date	Name	Link	Duration
07/17/2023	2023_0717-(GtkRadiant)	https://youtu.be/-tGdz6oxXZI	06:05:05

...because in that video (...that has no sound or commentary...), I was just getting reacquainted with the editor, and surprisingly, I remembered how to use [GtkRadiant] pretty well over the duration of that video.

Now, it's time to *start messing with the editor again*, for real.

Conclusion

Rough Sketches

[To be continued ...]

Conclusion

Michael C. Cook Sr.
Security Engineer
Secure Digits Plus LLC

