

TRENCHBROOM

as a self-study tool for level designers

By Jamie Ben Hout





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Hello everyone, my name is Jamie. I'm currently in my third year and Nick asked me to do a little introduction to Trenchbroom for all of the level designers here that want to do some side-projects and aren't sure where to start.

I started using Trenchbroom at the start of the academic year, and I thought it was a very fun and convenient tool to work with, so I'll just go over what Trenchbroom is exactly, what you can use it for, and what I like about it as a self-study tool for level designers.

What is Trenchbroom?

"Trenchbroom is a modern cross-platform level editor for Quake-engine based games."

| Game / Engine       | Import                                    | Integration                         |
|---------------------|-------------------------------------------|-------------------------------------|
| Quake 1             | import via Q1ED2 tools                    | built in PIG2 - WAD2 - WAD3         |
| Quake 4             | import via FRODO2 or Unity3D BSP importer | Q1E conversion image format         |
| Unreal 4            | import via FRODO2 or Quake4               | conversion via FRODO2 Quake4        |
| Quake 4             | import via Quake4                         | Q1E conversion image format         |
| Quake 2             | import via Q1ED2                          | built in PIG2 - WAD2 - WAD3         |
| Quake 3 (BSP/DM2)   | import via Q1ED2                          | via Q1ED2 profile via Q1ED2 profile |
| Half-Life (BSP/DM2) | import via Q1ED2                          | via Q1ED2 profile via Q1ED2 profile |
| Quake 3 (BSP/DM2)   | import via Q1ED2                          | via Q1ED2 profile via Q1ED2 profile |
| Quake 3 (BSP/DM2)   | import via Q1ED2                          | via Q1ED2 profile via Q1ED2 profile |



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The Trenchbroom website will state that Trenchbroom is a modern cross-platform level editor for Quake-engine based games. This means that using the tool, you can build maps for Quake games, but with certain extra compilers, you can even build content for Half-Life and Doom 3, though I believe these are in more experimental stages at the moment.

I've also seen people use Trenchbroom in combination with Unreal Engine 4, Unity and Godot, but I don't have any experience there myself unfortunately.

What is Trenchbroom?

"Trenchbroom is a modern cross-platform level editor for Quake-engine based games."





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Right now I'll just show a quick video of the level editor in action so you can get an idea of what it's like to work with it and what functions are there. Hopefully the sound also works, but since it's just music, it's not an issue if it doesn't.



## Why use Trenchbroom?

SCRIPTING FOR GAMEPLAY

ACTORS = ENTITIES

Level ingredients

Enemies

Mechanical contraptions

You choose what to base your design around

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Scripting is also an important part of working with the engine, but you don't actually have to write any code. I advise you to watch the 'Entity' tutorials by [dumprtruck\\_ds](#) to get an understanding of the menus and settings.

In Trenchbroom, entities are what actors are in Unreal Engine. So, just like each actor can have its own settings and be used to do all sorts of things in UE4, entities also has settings that can be manipulated.

This means that you can quite easily create level ingredients like elevators, locks that open under certain conditions, secret doors that lead to hidden rooms, and stuff like that.

Enemies can be scripted in the same way. You can tell enemy entities to have a routine, walk in a certain direction along a path that you set out for them, or even ambush a player and jump to a specific location once it sees the player enter the room.

You can even build moving elements in the world that aren't necessarily used in gameplay, but just add a lot to the theme and atmosphere of the level.

You also have the freedom to decide what kind of genre your map will be since Quake's gameplay is quite versatile, so you can easily script functionality to suit your needs. You can focus on making puzzles for example, or platforming challenges, or even make a level that's completely combat-focused

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## Why use Trenchbroom?

SCRIPTING FOR GAMEPLAY

Elevators - Secret doors - Buttons

Custom enemy behaviour: ambush

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These are some visual examples of what you can do. Everything here is set up by the designer through that simple scripting method. It's an elevator that is triggered when a button is hit, which will reset itself after a few seconds. A hidden door would pretty much use similar functionality, but in that case it would just move down and stay there.

The other example is an enemy that will jump to a very specific location that the designer can pinpoint by placing a particular entity in the level. The ambush jump itself can also be customized: so even how high the enemy jumps and how fast he lands is decided by the designer.

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## Why use Trenchbroom?

FREEDOM AND CREATIVITY

Theme

Architecture

Textures

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As I said before, maps can be very versatile. You can choose to build something traditional, with simple geometry and textures, or you can build something more intricate with more detailed geometry and textures. The designer can also focus on particular architectural styles and use brush editing to practice making these shapes and creating prefabs to form a levelkit and experiment with those pieces for example.

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## Twitter pages to follow

@ChrisHoldenDev -> Game dev on GRAVEN, shares great Trenchbroom/ID exercises  
@Slipseer -> Twitter page with daily screenshots of quake levels  
@makkon\_art -> AMAZING texture artist that shares texture packs for free

Link to the Quake Mapping discord server  
If it doesn't work anymore, just google "Quake Mapping Discord"

Link to Chris Holdens "Trench" #PSC discord server  
If it doesn't work anymore, reach out to me to get an updated link



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These are some useful and inspiring twitter pages to follow. Chris Holden is a game developer that uses Trenchbroom as lot and posts very useful level design exercises on his page. I believe his game GRAVEN was built in Trenchbroom and then exported to UE4.

Slipseer is a page that shares screenshots of maps that are submitted to the page, so it's a great source of inspiration.

Makkon is an amazing texture artists and many of the more detailed, realistic and colourful textures are made by him.

I also added a link to the Quake Mapping discord server. There's an active community of map builders there that love to help out in case you run into an issue.

Underneath is a link to a discord server for Chris Holdens new game, where he also shares Trenchbroom content.

In this image you can see the type of channels the Quake Mapping server has. You can share screenshots, find people to playtest your maps, and get help with modelling and texturing, among many other things.



## Examples

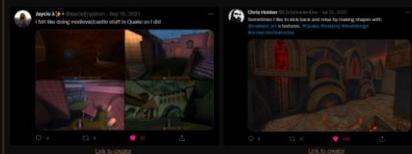


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I grabbed a few Twitter posts that I think showcase the versatility of the tool nicely. The first is an example of a useful tip that Chris Holden shared to his page and an example of a more detailed and realistic-looking map.

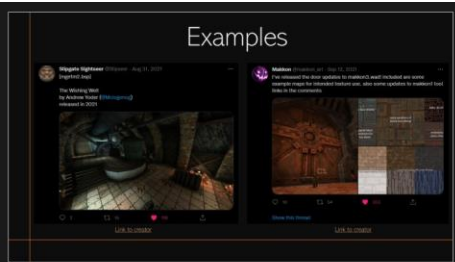
## Examples



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This is an example of a map that's kept a bit more primitive with blockout textures, which shows how you can prototype a certain environment. On the right is an example of Chris showing off his texture skills, using textures from Makkon.

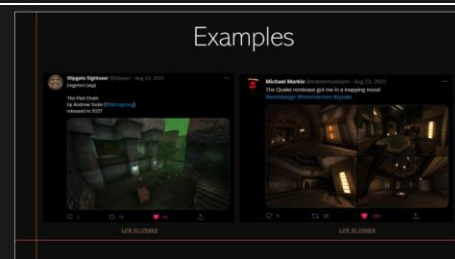


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Another cool looking blockout and Makkon showing off the level of detail you can apply using one of his texture collection.

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More map examples

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This one I like because it shows how much a scene can change depending on the textures and lighting that is used. It's the exact same geometry, but the atmosphere completely changes in the second post.

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Examples  
Source: textures by makkon\_art





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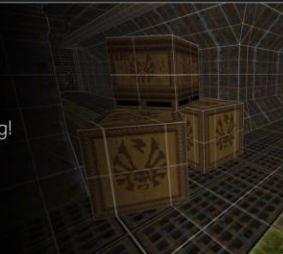
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This last one also uses Makkon textures and it's just amazing how much detail can be applied if you put in enough effort.

Thanks for listening!

Feel free to reach out through  
Teams or on Discord:  
@kiamh1515





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This was my presentation. Hopefully I was able to give you a clear sense of what Trenchbroom is about and hopefully it will be able to give some of you a better idea of where to take your self-study next.  
You can reach me on Teams or through Discord, but for now, are there any questions?