JETBRAINS

Model Context Protocol in Kotlin

Alexander Sysoev
Software Developer

MCP Live Demo

MCP 101

MCP 101

MCP 101

MCP 101

```
paths:
  /maps_geocode:
    get:
      summary: Get geographic coordinates
      parameters:
        - name: address
          in: body
          type: string
      responses:
        "200": # status code
          description: Location id and geocode
          content:
            application/json:
              schema:
                type: object
                properties:
                  place_id:
                    type: string
                  geocode:
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              schema:
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                properties:
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MCP 101

```
{
  "place_id": "12345",
  "geocode": {
    "latitude": 59.937500,
    "longitude": 30.308611
  }
}
```

MCP 101

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MCP 101

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  inputSchema: {
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MCP 101

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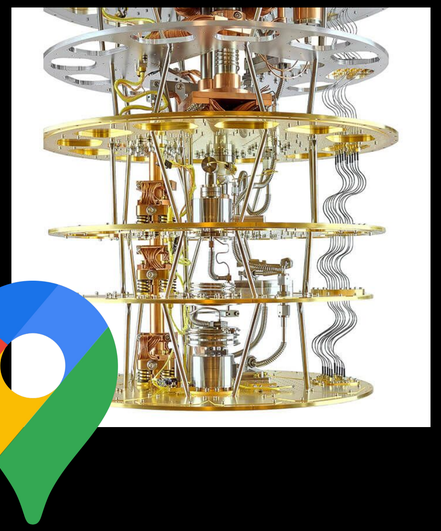
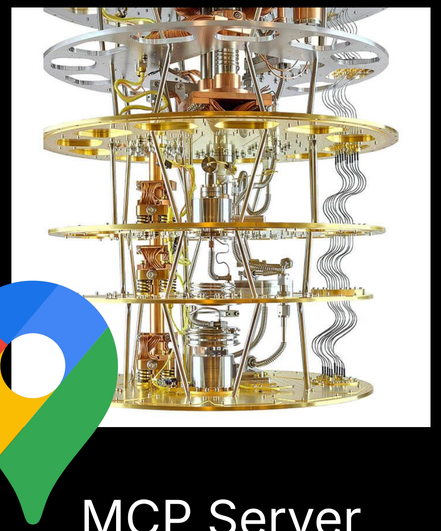


MCP 101



MCP Server

MCP 101

MCP Server

MCP Client

MCP 101

MCP Server

MCP Client

MCP 101

Protocol	Server	Client	

MCP 101

Protocol	Server	Client	
HTTP			

MCP 101

Protocol	Server	Client	
HTTP	Web Server with HTTP Endpoints (Spring, Ktor Server, ...)	Curl, Ktor Client, ...	

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MCP			

MCP 101

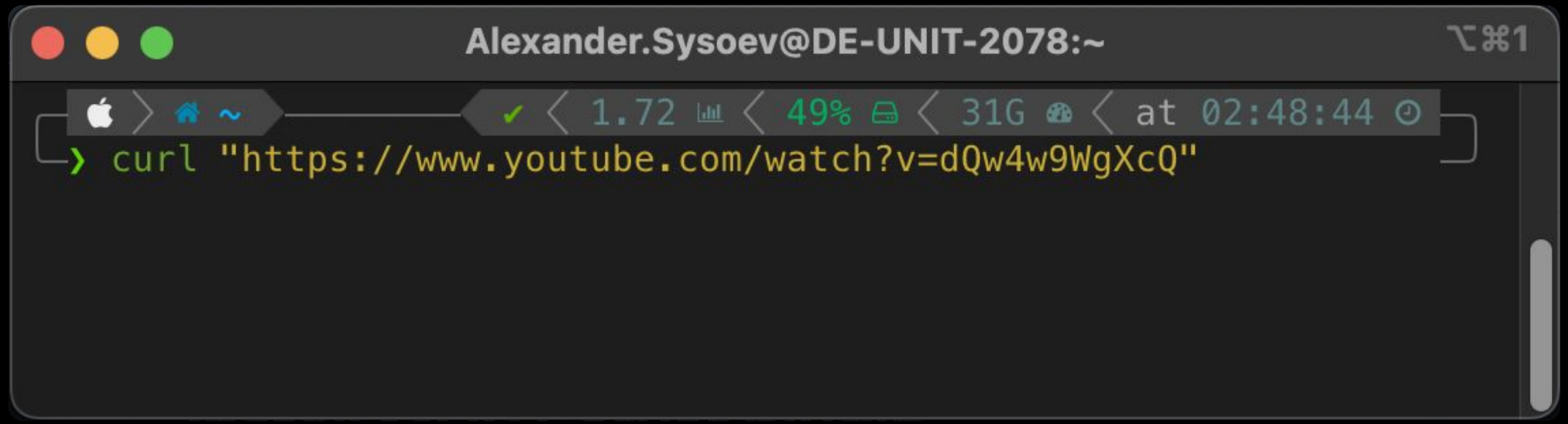
Protocol	Server	Client	
HTTP	Web Server with HTTP Endpoints (Spring, Ktor Server, ...)	Curl, Ktor Client, ...	
MCP	MCP Server with MCP Endpoints (kotlin-sdk, spring-ai, ...)	MCP Client (kotlin-sdk, python-sdk, ...)	

MCP 101

MCP Server

MCP Client

MCP 101


Alexander.Sysoev@DE-UNIT-2078:~
⌥⌘1
1.72
49%
31G
at 02:48:44
curl "https://www.youtube.com/watch?v=dQw4w9WgXcQ"


Alexander.Sysoev@DE-UNIT-2078:~
45998074},{"startMillis":"146970","durationMillis":"2130","intensityScoreNormalized":0.10828747896108752},{"startMillis":"149100","durationMillis":"2130","intensityScoreNormalized":0.10241172607850753},{"startMillis":"151230","durationMillis":"2130","intensityScoreNormalized":0.10002919540015419},{"startMillis":"153360","durationMillis":"2130","intensityScoreNormalized":0.10416168508419865},{"startMillis":"155490","durationMillis":"2130","intensityScoreNormalized":0.10543268375879304},{"startMillis":"157620","durationMillis":"2130","intensityScoreNormalized":0.1110133168397953},{"startMillis":"159750","durationMillis":"2130","intensityScoreNormalized":0.11906613157361919},{"startMillis":"161880","durationMillis":"2130","intensityScoreNormalized":0.12607355991328398},{"startMillis":"164010","durationMillis":"2130","intensityScoreNormalized":0.12912006812129295},{"startMillis":"166140","durationMillis":"2130","intensityScoreNormalized":0.12725656055325185},{"startMillis":"168270","durationMillis":"2130","intensityScoreNormalized":0.13210264397813423},{"startMillis":"170400","durationMillis":"2130","intensityScoreNormalized":0.11712006106127872},{"startMillis":"172530","durationMillis":"2130","intensityScoreNormalized":0.1133658424576313},{"startMillis":"174660","durationMillis":"2130","intensityScoreNormalized":0.10468006382813191},{"startMillis":"176790","durationMillis":"2130","intensityScoreNormalized":0.09770308880385680 8},{"startMillis":"178920","durationMillis":"2130","intensityScoreNormalized":0.096173839290934759},{"startMillis":"181050","durationMillis":"2130","intensityScoreNormalized":0.090313271042155321},{"startMillis":"183180","durationMillis":"2130","intensityScoreNormalized":0.08727034887312507},{"startMillis":"185310","durationMillis":"2130","intensityScoreNormalized":0.08055546286952206},{"startMillis":"187440","durationMillis":"2130","intensityScoreNormalized":0.077708904350506841},{"startMillis":"189570","durationMillis":"2130","intensityScoreNormalized":0.088079925188503078},{"startMillis":"191700","durationMillis":"2130","intensityScoreNormalized":0.070505952838712652},{"startMillis":"193830","durationMillis":"2130","intensityScoreNormalized":0.063132720507287798},{"startMillis":"195960","durationMillis":"2130","intensityScoreNormalized":0.057198414332008209},{"startMillis":"198090","durationMillis":"2130","intensityScoreNormalized":0.052708833610284805},{"startMillis":"200220","durationMillis":"2130","intensityScoreNormalized":0.048196784113085291},{"startMillis":"202350","durationMillis":"2130","intensityScoreNormalized":0.034274772224189405},{"startMillis":"204480","durationMillis":"2130","intensityScoreNormalized":0.01968388001797166},{"startMillis":"206610","durationMillis":"2130","intensityScoreNormalized":0.0072372149935987801},{"startMillis":"208740","durationMillis":"2130","intensityScoreNormalized":0},{"startMillis":"210870","durationMillis":"2130","intensityScoreNormalized":0.0056666980164918014}],"markersMetadata":{"heatmapMetadata":{"maxHeightDp":40,"minHeightDp":4,"showHideAnimationDurationMillis":200}},"markersDecoration":{"timedMarkerDecorations":[{"visibleTimeRangeStartMillis":0,"visibleTimeRangeEndMillis":6390,"decorationTimeMillis":2130,"label":{"runs":[{"text":"Am häufigsten mehrfach wiederholt"}]},"icon":"UNKNOWN"}]}}}}},{"entityKey":"EgZ0b3BiYXIg9QEoAQ%3D%3D","type":"ENTITY_MUTATION_TYPE_DELETE","options":{"persistenceOption":"ENTITY_PERSISTENCE_OPTION_INMEMORY_AND_PERSIST"}},{"entityKey":"EhxsaWtlX2J1dHRvbl9hbmltYXRpb25fZW50aXR5ILcEKAE%3D","type":"ENTITY_MUTATION_TYPE_DELETE"},{"entityKey":"EgtkUXc0dzlXZ1hjUSA-KAE%3D","type":"ENTITY_MUTATION_TYPE_REPLACE","payload":{"likeStatusEntity":{"key":"EgtkUXc0dzlXZ1hjUSA-KAE%3D","likeStatus":"INDIFFERENT"}}},{"entityKey":"EhhVQ3VBWEZrZ3N3MUw3eGFDZm5kNUpKT3cgMygB","type":"ENTITY_MUTATION_TYPE_REPLACE","payload":{"subscriptionStateEntity":{"key":"EhhVQ3VBWEZrZ3N3MUw3eGFDZm5kNUpKT3cgMygB","subscribed":false}}}],"timestamp":{"seconds":"1746146751","nanos":520973499}}}}};</script><script nonce="PF4245x8f4Mm2ctTFykUXw">if (window.ytcsi) {window.ytcsi.tick('pdr', null, '');}</script><script nonce="PF4245x8f4Mm2ctTFykUXw">(function serverContract()
{window['ytPageType'] = "watch";window['ytCommand'] = {"clickTrackingParams":"IhMI2ujGxseDjQMVTOhCBR3LaR7OMghleHRlcm5hbA==","commandMetadata":{"webCommandMetadata":{"url":"/watch?v=dQw4w9WgXcQ\u0026pp=0gcJCdgAo7VqN5tD","webPageType":"WEB_PAGE_TYPE_WATCH","rootVe":3832}},"watchEndpoint":{"videoId":"dQw4w9WgXcQ","playerParams":"0gcJCdgAo7VqN5tD"}};window['ytUrl'] = '\/watch?v\x3ddQw4w9WgXcQ';var a=window;(function(e){var c=window;c.getInitialCommand=function(){return e};c.loadInitialCommand&&c.loadInitialCommand(c.getInitialCommand())})(a.ytCommand);
(function(e,c,l,f,g,h,k){var d=window;d.getInitialData=function(){var b=window;b.ytcsi&&b.ytcsi.tick("pr",null,"");b={page:e,endpoint:c,response:l};f&&(b.playerResponse=f);g&&(b.reelWatchSequenceResponse=g);k&&(b.url=k);h&&(b.previousCsn=h);return b};d.loadInitialData&&d.loadInitialData(d.getInitialData())})(a.ytPageType,a.ytCommand,a.ytInitialData,a.ytInitialPlayerResponse,a.ytInitialReelWatchSequenceResponse,a.ytPreviousCsn,a.ytUrl);
})();</script><script nonce="PF4245x8f4Mm2ctTFykUXw">ytcfg.set({"CSI_SERVICE_NAME": 'youtube', "TIMING_INFO": {"GetPlayer_rid": '0xfdf4e2ce15dfdfcc',"yt_ad": '1',"GetWatchNext_rid": '0xfdf4e2ce15dfdfcc',}})</script><script nonce="PF4245x8f4Mm2ctTFykUXw">if (window.ytcsi) {ytcsi.infoGel({serverTimeMs: 557.0 }, '');}</script></body></html>%
1.64
49%
30.9G
at 02:45:51

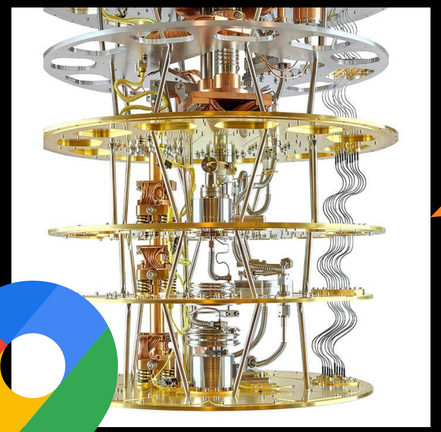
MCP 101

MCP Server

MCP Client

MCP 101

MCP Host



MCP Server

MCP 101

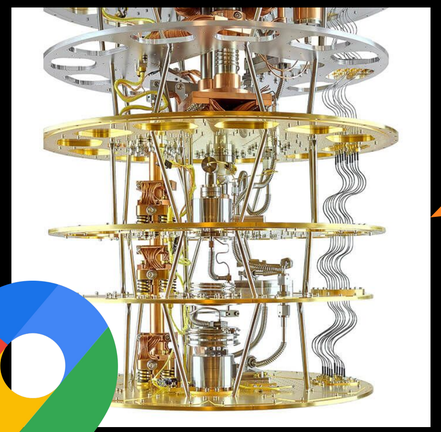
Protocol	Server	Client	
HTTP	Web Server with HTTP Endpoints (Spring, Ktor Server, ...)	Curl, Ktor Client, ...	
MCP	MCP Server with MCP Endpoints (kotlin-sdk, spring-ai, ...)	MCP Client (kotlin-sdk, python-sdk, ...)	

MCP 101

Protocol	Server	Client	Host
HTTP	Web Server with HTTP Endpoints (Spring, Ktor Server, ...)	Curl, Ktor Client, ...	Browser, Mobile Application, ...
MCP	MCP Server with MCP Endpoints (kotlin-sdk, spring-ai, ...)	MCP Client (kotlin-sdk, python-sdk, ...)	Claude, Raycast, AI Assistant, ...

MCP 101

MCP Host



MCP Server

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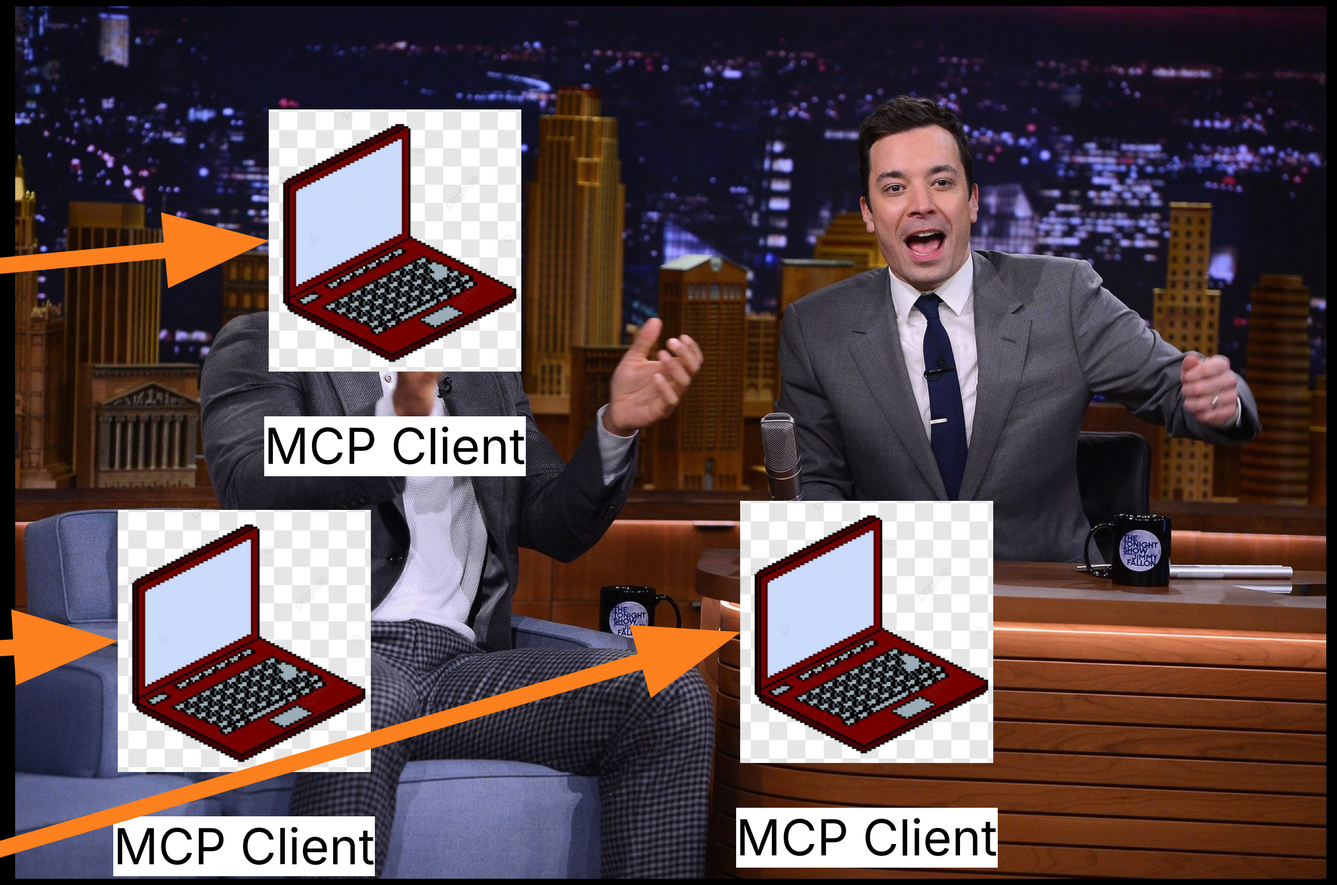
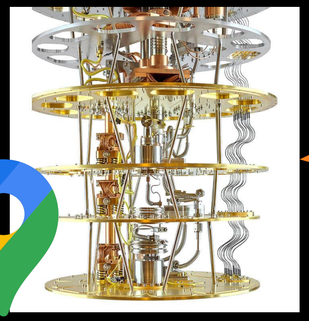
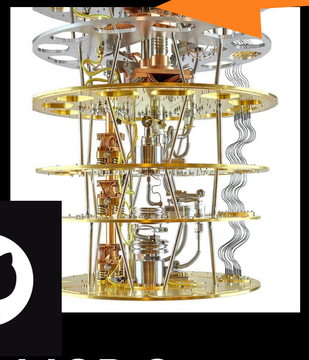




MCP Server



MCP Server

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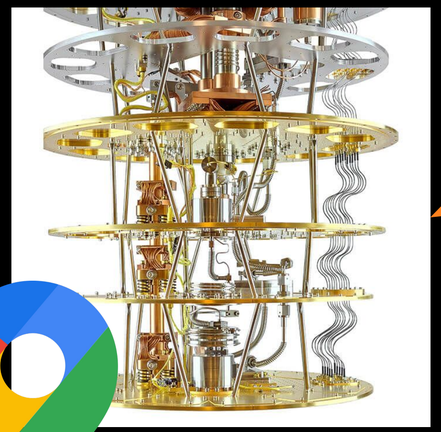

MCP Server

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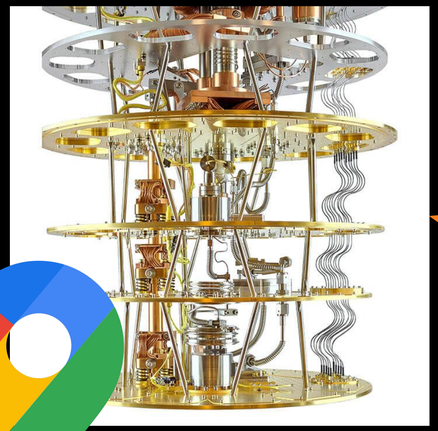

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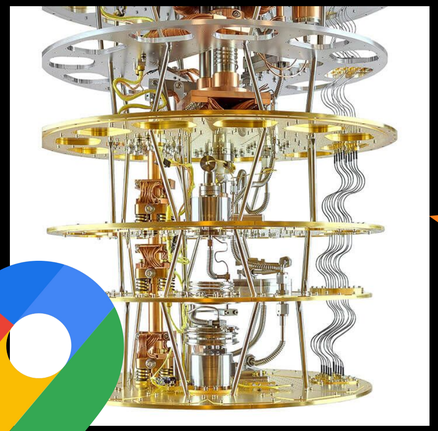

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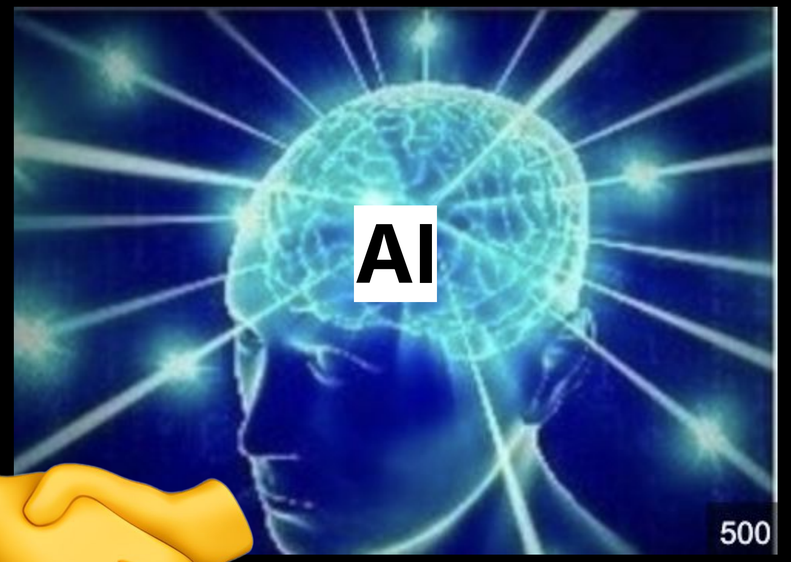

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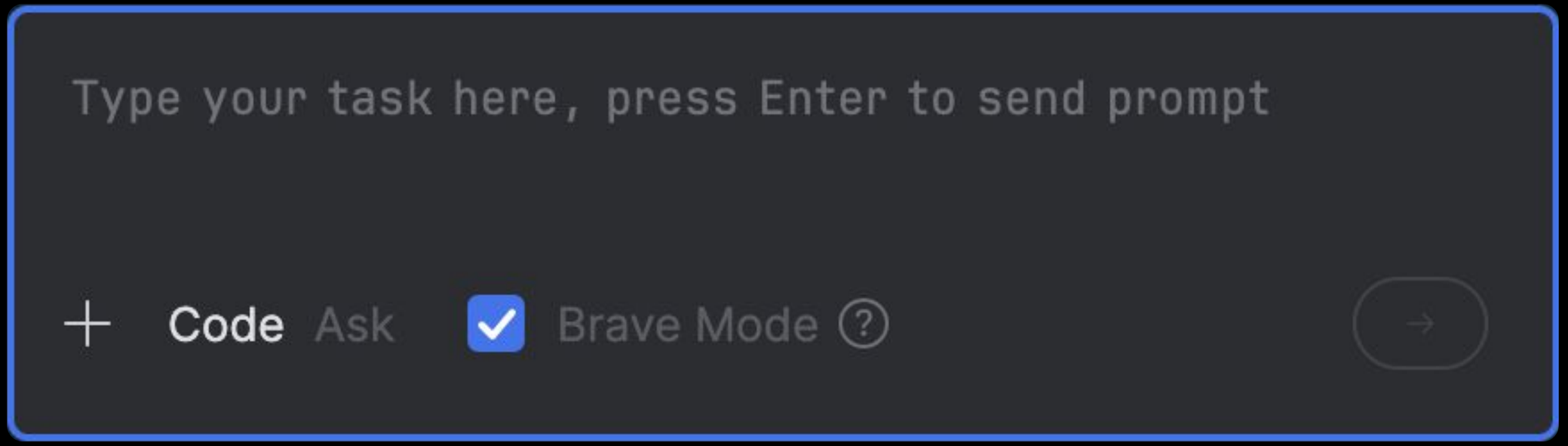
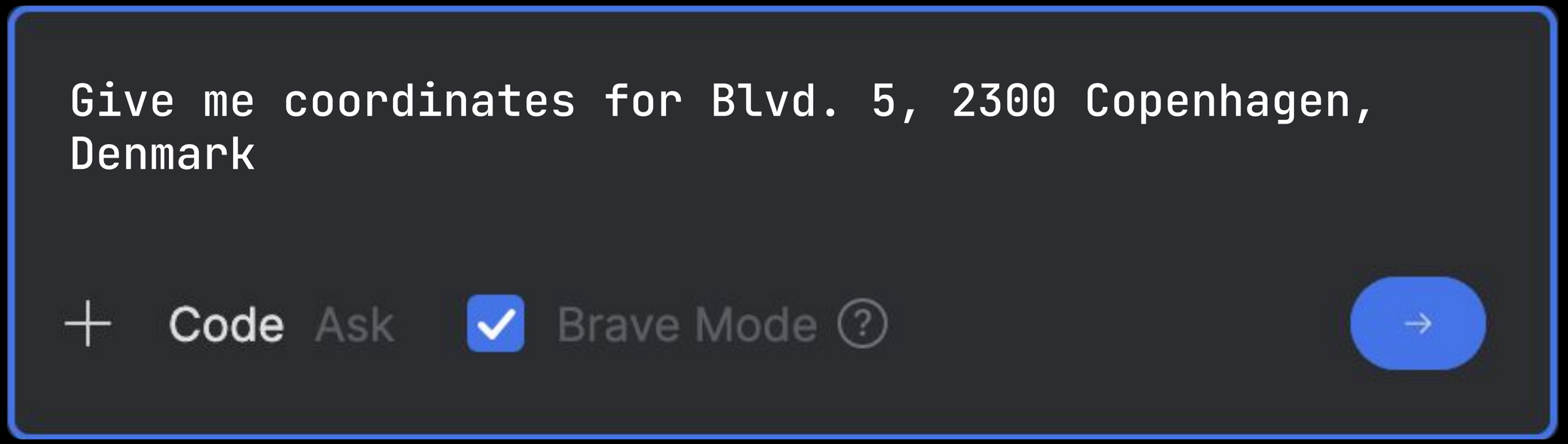

Type your task here, press Enter to send prompt
Code
Ask
Brave Mode

MCP 101


Give me coordinates for Blvd. 5, 2300 Copenhagen, Denmark
Code
Ask
Brave Mode

MCP 101

"Give me coordinates for Blvd. 5, 2300 Copenhagen, Denmark"

MCP 101

"Give me coordinates for Blvd. 5, 2300 Copenhagen, Denmark"

How can I do that?

MCP 101

"Give me coordinates for Blvd. 5, 2300 Copenhagen, Denmark"

How can I do that?

Let's ask our server about the tools

MCP 101

"Give me coordinates for Blvd. 5, 2300 Copenhagen, Denmark"

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Let's ask our server about the tools

MCP:

maps_geocode

MCP:

[...]

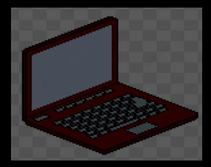
...

MCP 101

"Give me coordinates for Blvd. 5, 2300 Copenhagen, Denmark"

How can I do that?

Let's ask our server about the tools



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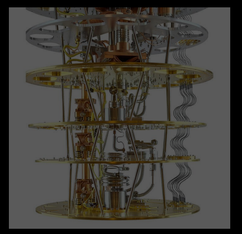
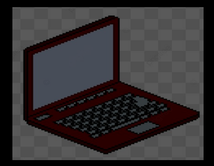


MCP:

[...]



...

...

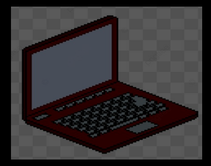
You can get a geocode, here is how: ...

MCP 101

"Give me coordinates for Blvd. 5, 2300 Copenhagen, Denmark"

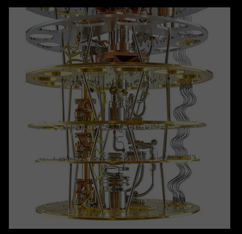
How can I do that?

Let's ask our server about the tools



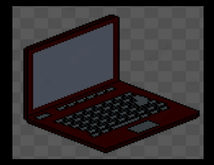
MCP:

maps_geocode



MCP:

[...]



...

...

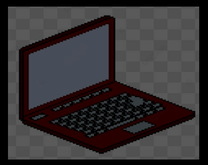
You can get a geocode, here is how: ...

MCP 101

"Give me coordinates for Blvd. 5, 2300 Copenhagen, Denmark"

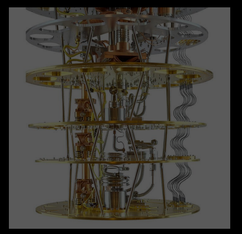
How can I do that?

Let's ask our server about the tools



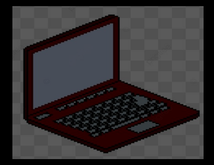
MCP:

maps_geocode



MCP:

[...]



...

...

You can get a geocode, here is how: ...

?

MCP 101

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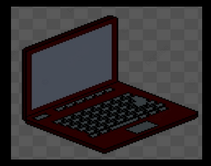
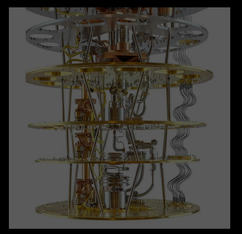
How can I do that?

Let's ask our server about the tools



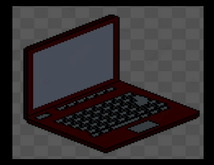
MCP:

maps_geocode



MCP:

[...]



...

...

You can get a geocode, here is how: ...

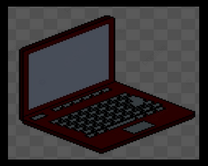
??

MCP 101

"Give me coordinates for Blvd. 5, 2300 Copenhagen, Denmark"

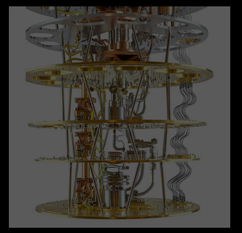
How can I do that?

Let's ask our server about the tools



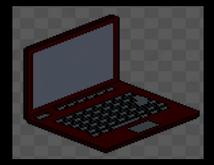
MCP:

maps_geocode



MCP:

[...]



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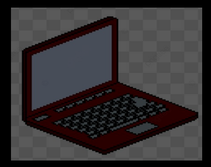
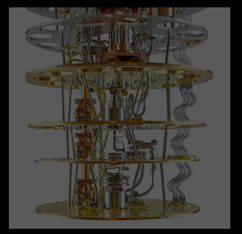


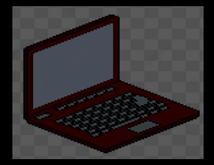
MCP:

maps_geocode



MCP:

[...]



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You can get a geocode, here is how: ...

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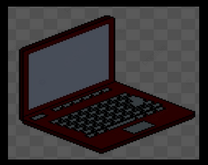
MCP 101

"Give me coordinates for Blvd. 5, 2300 Copenhagen, Denmark"

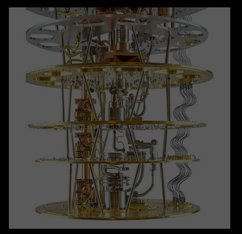
How can I do that?

Let's ask our server about the tools



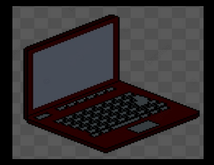
MCP:

maps_geocode



MCP:

[...]



...

...

You can get a geocode, here is how: ...

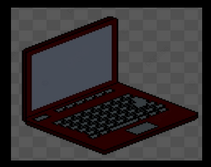
Execute "maps_geocode" Tool with this content: ...

MCP 101

"Give me coordinates for Blvd. 5, 2300 Copenhagen, Denmark"

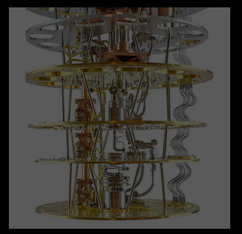
How can I do that?

Let's ask our server about the tools



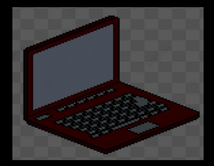
MCP:

maps_geocode



MCP:

[...]



...

...

You can get a geocode, here is how: ...

Execute "maps_geocode" Tool with this content: ...

MCP:

execute: maps_geocode

content: ...

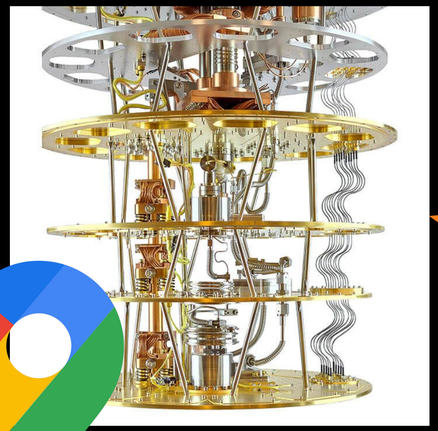
MCP 101


```
{
  "place_id": "12345",
  "geocode": {
    "latitude": 59.937500,
    "longitude": 30.308611
  }
}
```

MCP 101

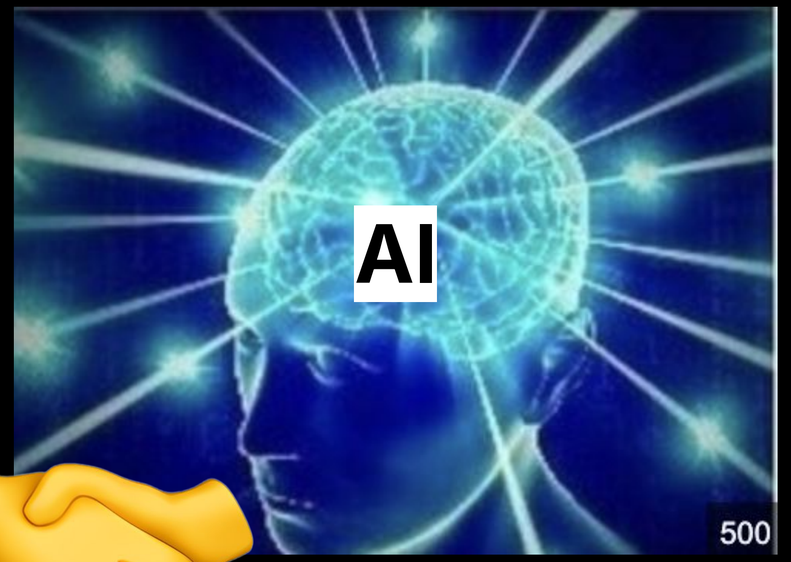
Sure! Here are the coordinates for the Blvd. 5, 2300 Copenhagen in Denmark: latitude is 59.937500 and longitude is 30.308611.
Please, tell me if you want to know more about the place blah blah blah

MCP 101



MCP Server

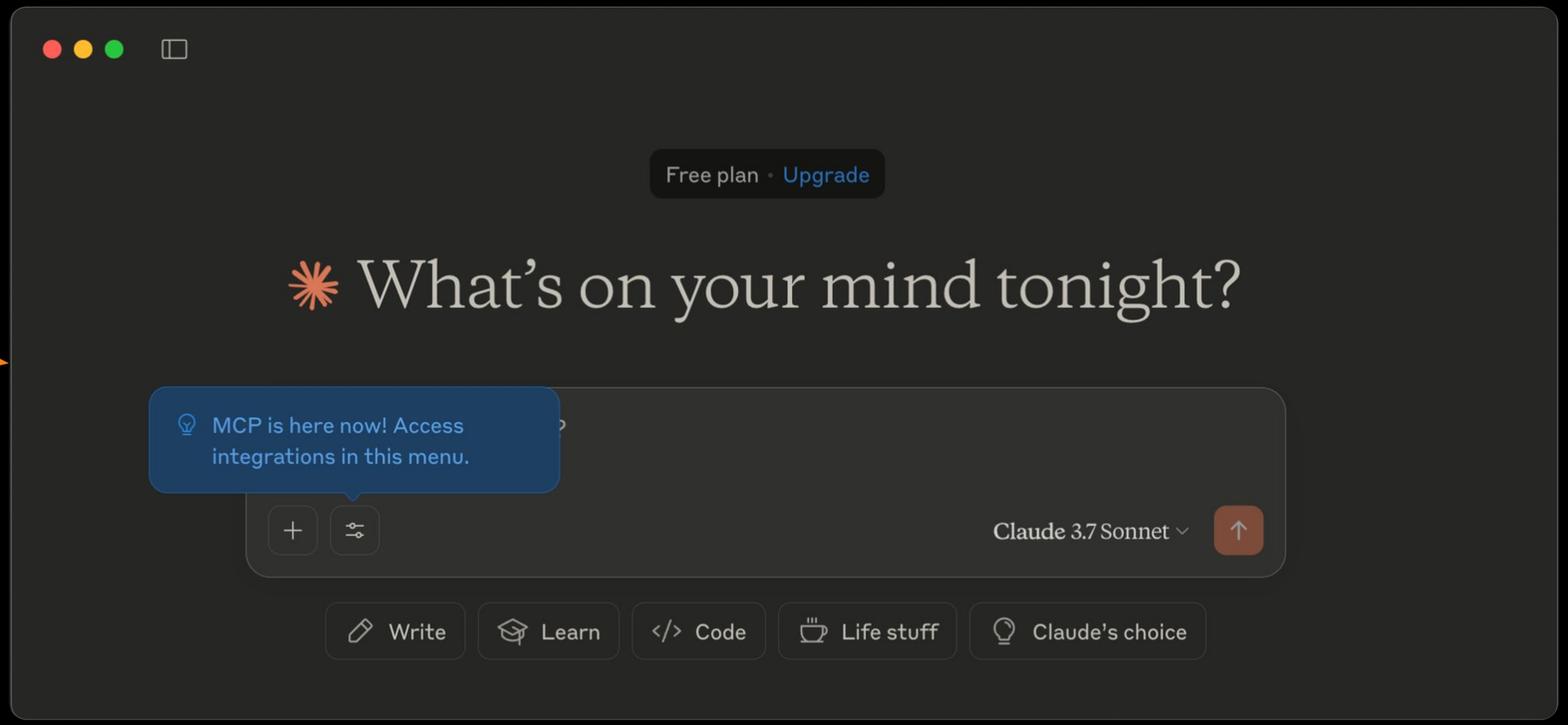
MCP Host



MCP 101

MCP Server

MCP Host



MCP 101

Tools

MCP 101

Tools

Prompts

MCP 101

Tools

Prompts

Resources

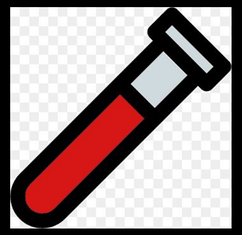
MCP 101

Tools

Prompts

Resources

Sampling



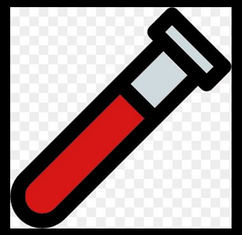
MCP 101

Tools

Prompts

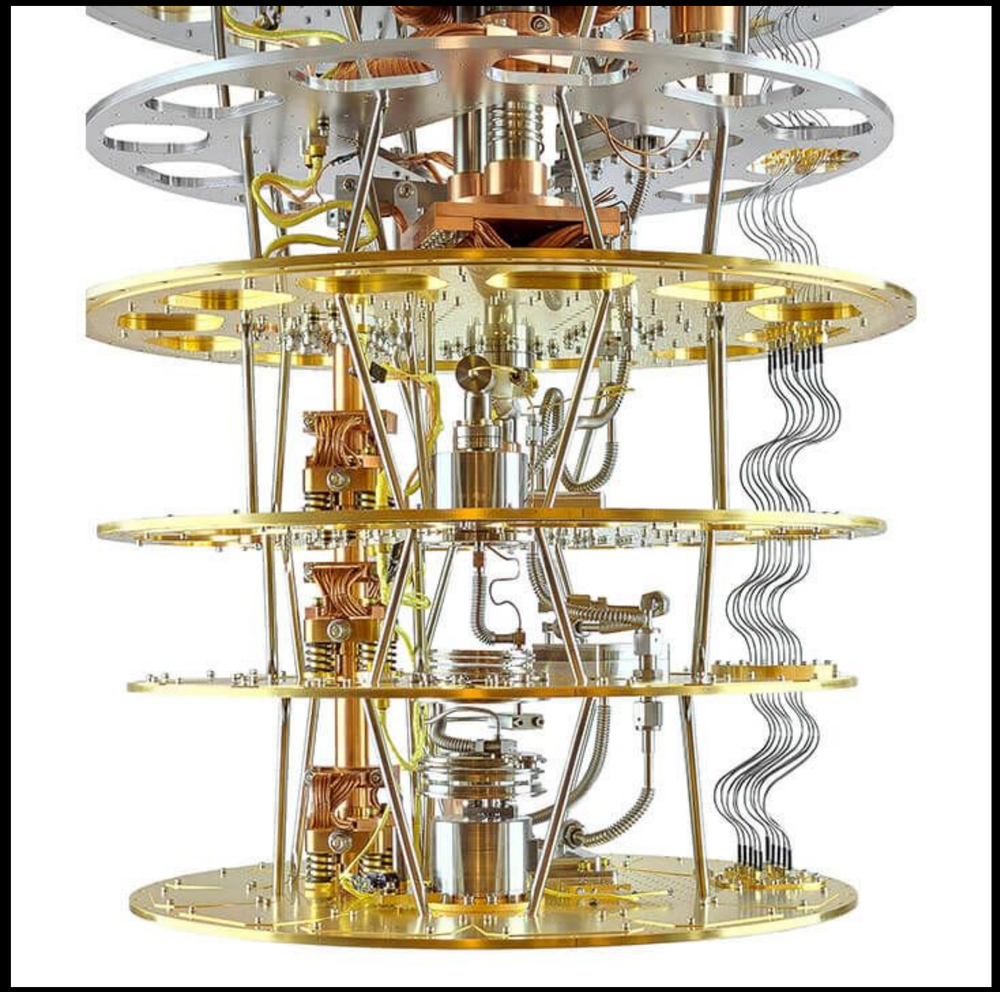
Resources

Sampling

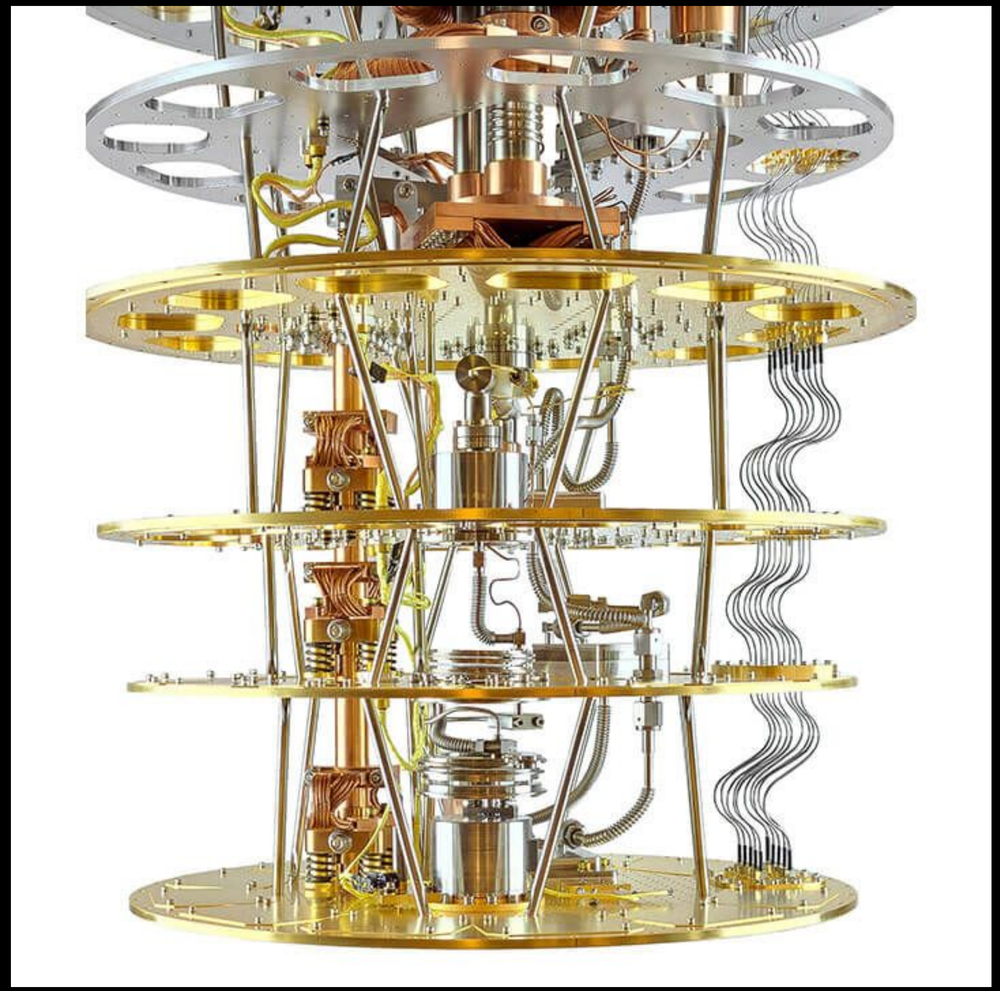


https://modelcontextprotocol.io/

MCP 101



MCP 101



kotlin-sdk

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api	feat: Add audio type according to 2025-03-26 spec (#68)	2 weeks ago
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gradle	Update jreleaser to fix publication issue (#91)	2 weeks ago
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LICENSE	Update license	5 months ago
README.md	Release 0.5.0 (#90)	2 weeks ago
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gradle.properties	Disable configuration cache to fix jreleaser issue (#92)	2 weeks ago

The official Kotlin SDK for Model Context Protocol servers and clients. Maintained in collaboration with JetBrains

modelcontextprotocol.io

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Security policy
Activity
Custom properties
658 stars
18 watching
89 forks

0.5.0 Latest
2 weeks ago

Contributors 20

MCP Coding

Thank you!

Alexander Sysoev
Alexander.Sysoev@jetbrains.com

https://github.com/Mr3zee/kotlinconf-app/blob/main/MCP.md