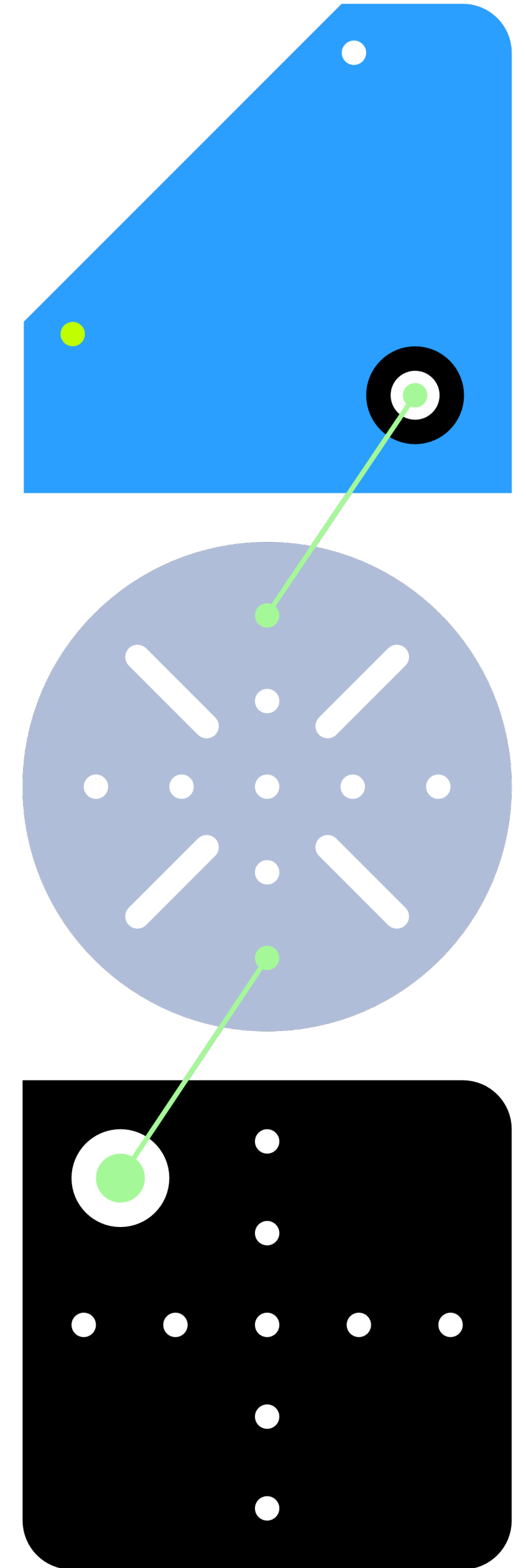


 **Postgres Hacking 101:  
Build, Break, Debug  
<<<Repeat <<<**

**Andrey Borodin**

Compiling Postgres daily since 2016



# All slides available on the schedule page

2026.pgconf.dev/schedule/tuesday

Beyond the source: the human architecture of PostgreSQL

(Floor Drees, Hari Kiran, Jimmy Angelakos, Miaolai Zhou, Valeria Kaplan)

Fletcher (1900)

How immutability challenges extension packaging and distribution

(Alastair Turner, David E. Wheeler, Floor Drees, Yurii Rashkovskii)

Canfor (1600)

Making PostgreSQL ecosystem packaging visible

(Christoph Berg, Devrim Gündüz)

Cominco (1415)

PostgreSQL Community Exhibitions

(Mark Wong, Robert Treat)

Scotiabank (1315)

PostgreSQL Hacking 101: Build, Break, Debug, Repeat

(Andrey Borodin)

Xerox (1500)

[closed meeting] PostgreSQL Committers Meeting

(Peter Eisentraut)

RBC Executive (2200)

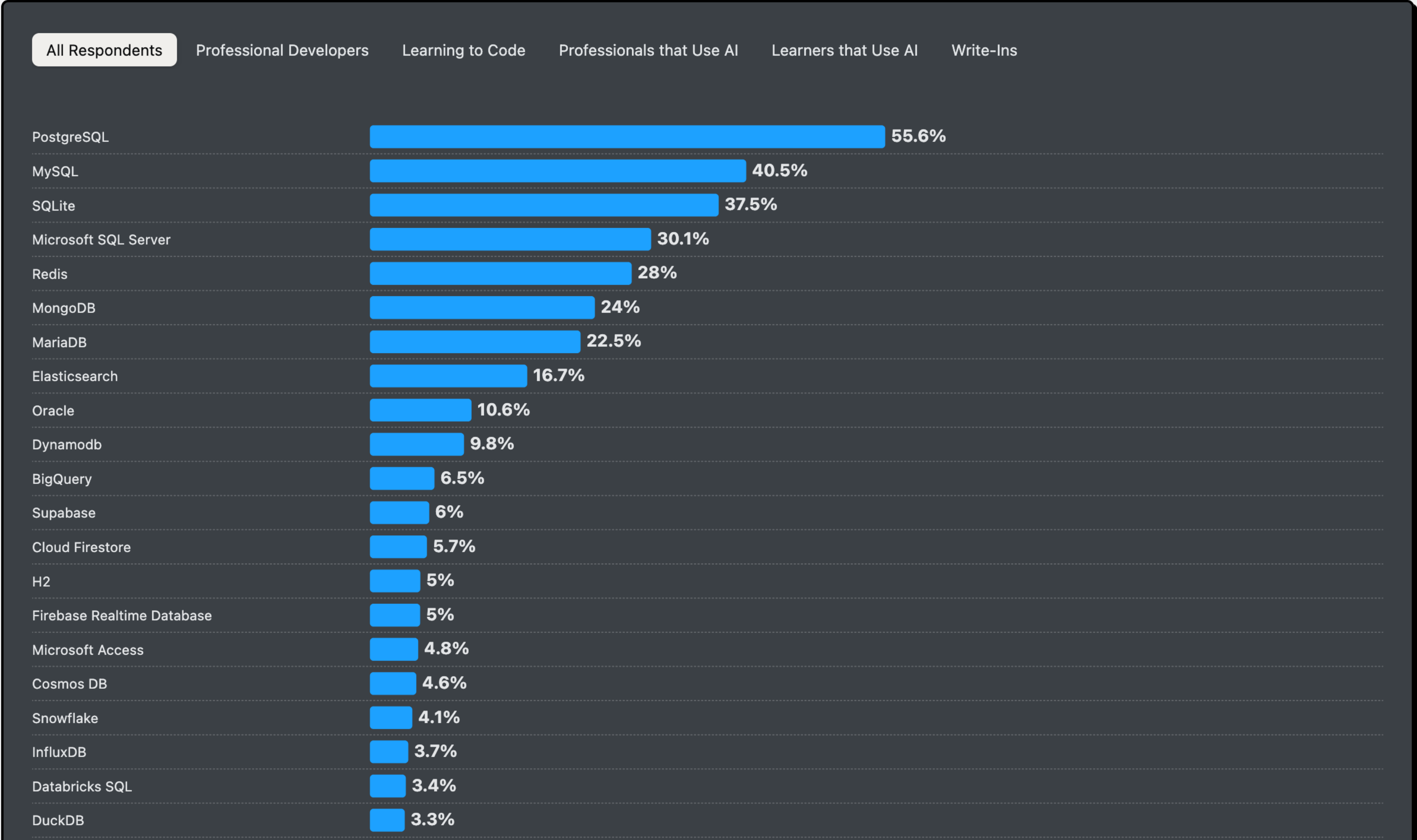
10:00 10:30



# Databases

The significant growth in usage for Redis (+8%) highlights its growing importance. As applications become more complex, the need for high-speed, in-memory caching and data structures has made Redis an essential part of the modern tech stack.

? Which **database environments** have you done extensive development work in over the past year, and which do you want to work in over the next year? (If you both worked with the database and want to continue to do so, please check both boxes in that row.)



<https://survey.stackoverflow.co/2025/technology#1-databases>

# Difficulties

- No clear motivation from most employers – you have to start on your own
- No clear career path
- Codebase is vast, difficult and with history; there are easier projects
- Instruments that you rarely need anywhere else  
TAP, perl, C
- Everything was invented already. Many times.

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- Everything was invented already. Many times.
- Without mental model in your head - AI generates total slop

**It is 95% about building  
a mental model of the  
system**

**It is 95% about building  
a mental model of the  
system**

**But we have to start  
with the system**



# Dependencies

```
[apt\brew] install build-essential libreadline-dev zlib1g-dev flex bison  
libxml2-dev libxslt-dev libssl-dev
```

```
git clone
```

```
--single-branch --branch master
```

```
--depth 1
```

```
https://github.com/postgres/postgres
```

```
./configure --prefix=$PWD --enable-depend
```

```
make -j12 install
```

# **.vscode/launch.json for debug**

```
{ "version": "0.2.0",  
  
  "configurations": [{  
  
    "name": "(lldb) Attach DB",  
  
    "type": "cppdbg",  
  
    "request": "attach",  
  
    "program": "${env:HOME}/project/bin/postgres",  
  
    "processId": "${command:pickProcess}",  
  
    "MIMode": "lldb",  
  
    "targetArchitecture": "arm64"}, ] }
```

# **Exclude tmp\_install from search .vscode/ settings.json**

```
{"files.exclude": {"tmp_install/**": true},  
"C_Cpp.files.exclude": {"tmp_install/**": true},}
```



**Andrey M. Borodin**

pgsql-hackers 31 August 2023, 00:05

Re: UUID v7



To: Peter Eisentraut, Cc: Tom Lane, Daniel Gustafsson & 9 more

[Details](#)

---

On 21 Aug 2023, at 13:42, Andrey M. Borodin <[x4mmm@yandex-team.ru](mailto:x4mmm@yandex-team.ru)> wrote:

<[v5-0001-Implement-UUID-v7-as-per-IETF-draft.patch](#)><[v5-0002-Buffer-random-numbers.patch](#)>  
<[v5-0003-Use-cached-random-numbers-in-gen\\_random\\_uuid-too.patch](#)>

FPA attached next version.

Changes:

- implemented protection from time leap backwards when series is generated on the same backend
- counter overflow is now translated into ms step forward

Best regards, Andrey Borodin.



v6-0001-  
Implem...t.patch



v6-0003-Use-  
cached....patch



v6-0002-  
Buffer-...s.patch

```
git kung-foo
```

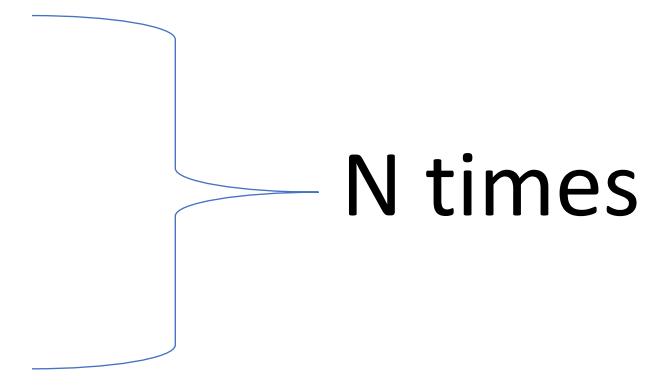
```
git checkout origin/master
```

```
git checkout -b my_feature
```

```
// hack hack hack
```

```
git commit -a
```

```
git patch-format -7 -v 42
```



N times

**AI**

# **AI is a tool**

- You are the author**
- Your mental model is more important than sharing AI output**

# **AI is a great way to learn**

**Postgres source brings you experience of decades of development**

**AI can answer your questions**

**Reviewing work of other hackers helps to sharpen your understanding**

- █ Spend more time reviewing than writing**
- █ Pick patches near your area of interest**
- █ You learn the code, you help the project, you build reputation**

# Let's start hacking



**Andrey Borodin**

Open-source RDBMS development team lead

