

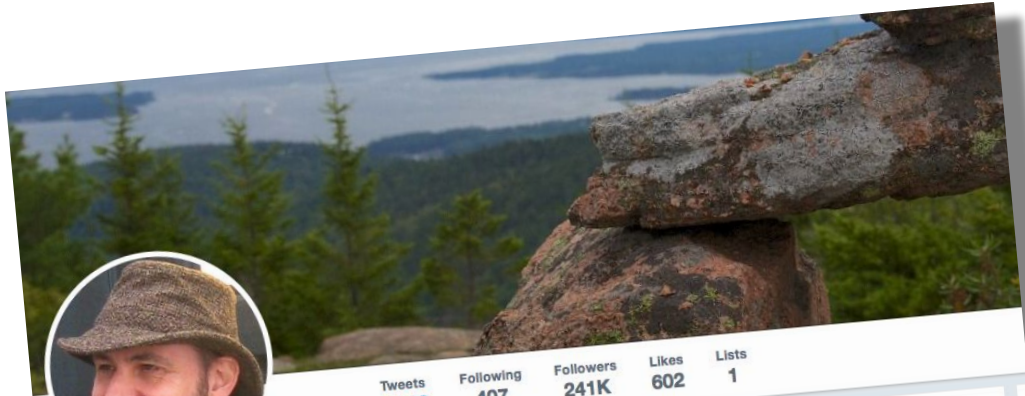
# How Modern News Aggregators Help Development Communities Shape and Share Knowledge

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Maurício Aniche  
Christoph Treude  
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**Martin Fowler** ✓

@martinfowler

Programmer, Loud Mouth, ThoughtWorker

📍 Boston

🌐 [martinfowler.com](http://martinfowler.com)

📅 Joined October 2008

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That desire is ultimately pathological.

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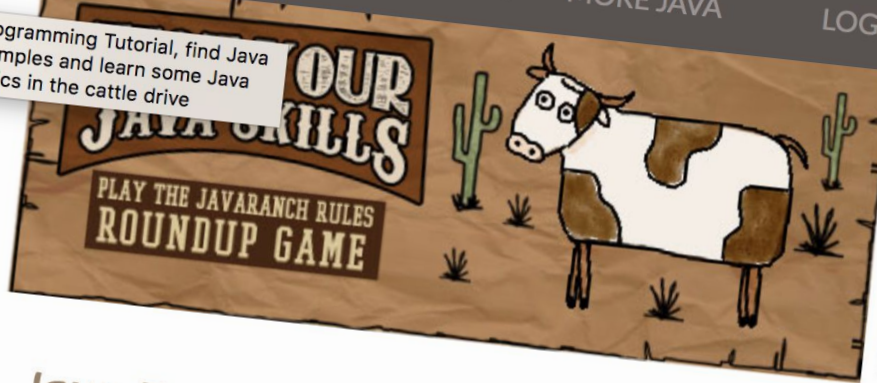
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1998	50	12	54	7		74	405	391	639	760	600	559	
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1996					125	122	221	252	355	308	393	48	8

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Developers sharing knowledge  
is among **the best things** we  
have as a community!  
(and the way they get together  
changes over time...)

**Community of practice:** "groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly".

*Lave and Wenger (1991)*





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**Schizophrenia is considered a disorder of the mind, influencing the way a person thinks, feels and behaves. But latest research shows that organs, other than the brain, also change at the onset of the disease.** Psychology (theconversation.com)  
submitted 10 hours ago by Wagamaga to r/science  
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**John Carmack: My Steve Jobs Stories** (facebook.com)  
submitted 15 hours ago by rararaaaaaa to r/programming  
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**[Discussion] Dear Industry Researchers: "If researchers are not incentivized to do reproducible research (or penalized for not doing so), something is flawed in the industry."** Discussion (self.MachineLearning)  
submitted 16 hours ago by feedthecreed to r/MachineLearning  
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**React in patterns - A book about common design patterns used while developing with React. It includes techniques for composition, data flow, dependency management and more** (krasimir.gitbooks.io)  
submitted 16 hours ago by magenta\_placenta to r/javascript  
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**Transgender in academia?** (self.AskAcademia)  
submitted 13 hours ago \* by tossawaytransaker to r/AskAcademia  
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
**On the weekend I wrote about the "Testing Context", An easier way to write Unit Tests in .NET** (dotnetcoretutorials.com)  
submitted 11 hours ago by pyronautical to r/csharp  
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**Python online course oriented around excel automate/ data analysis** (self.datascience)  
submitted 4 hours ago by citizenofacceptance2 to r/datascience  
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[mauricioaniche](#) • 1 point • submitted 7 months ago

That makes sense to me. I commonly make my domain code as testable as possible. This basically means isolating it from any infrastructure.

Then, later I write the glue that puts everything together (eg database, logic,etc).

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Then, later I write the glue that puts everything together (eg database, logic, etc).

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


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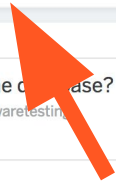
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


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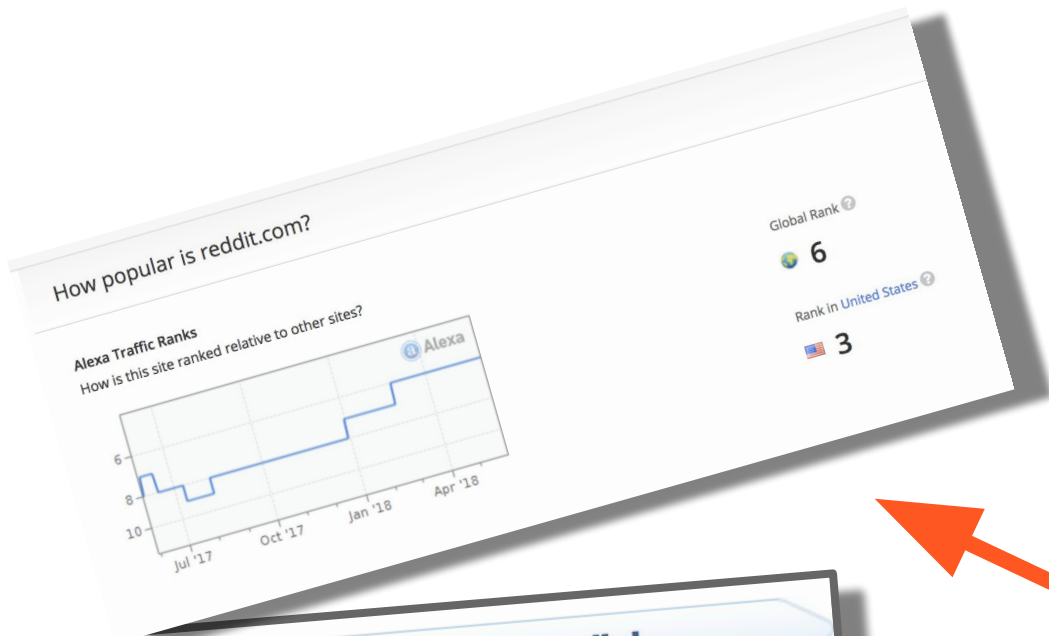
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Programmer, Loud Mouth, Thoughtleader

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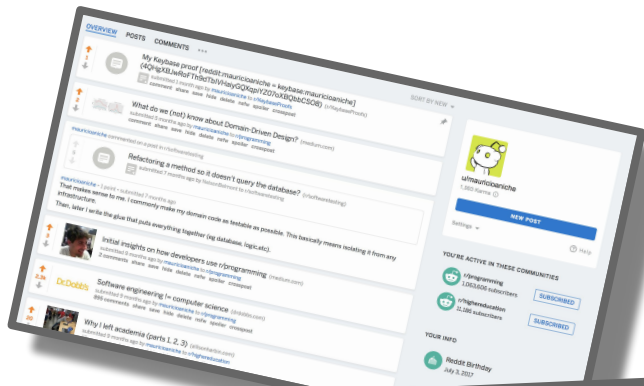
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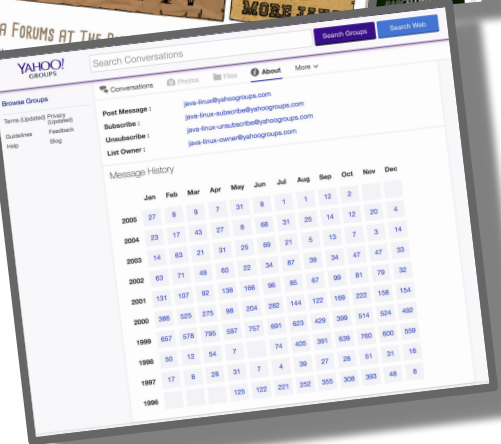
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2003	14	63	21	31	25	69	21	5	13	7	3	14	
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12. I Don't Know How to Waste Time on the Internet Anymore (nyimg.com)
13. Announcing Fuse Open (facebook.com)
14. Enslaved and then marooned on Trinitien Island for fifteen years (2014) (archivists.org)
15. GHC Parser Principles (haskell.org)
16. A Life as a stepmother (imgur.com)
17. High-Resolution Mandelbrot in Obfuscated Python (2011) (prashing.com)
18. AquilOS: POSIX Compliant, mostly ISA Transparent Operating System (aquilos.com)
19. A short history of top (opinion.com)

We should **understand how modern news aggregators** are used by software developers to curate and disseminate knowledge!



# Research Questions

RQ1. What **motivates** developers to participate in programming-related news aggregators?

RQ2. What are the **characteristics of the content** posted in programming-related news aggregators?

RQ3. What suggestions do the participants have to **improve the community** and features of programming-related news aggregators?

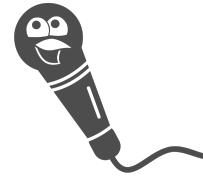


# Research Questions

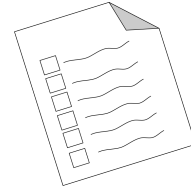
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Interviews with 22 active members



Survey with 99 users



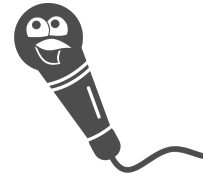
Manual analysis of 600 posts  
(CL=95%, CI=6%)

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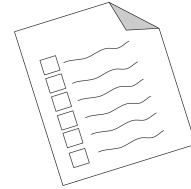
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P9: *"It's particularly interesting when the consensus differs from the conclusion I came to regarding the article".*

P14: *"If you wanna share something and get people's opinion, it's a very quick way to do it. I started using Reddit to get feedback about my blog post."*

**Motivation to post:** To promote their own work, get feedback, and see different opinions!

You have a crowd  
that you *\*never\**  
had before!

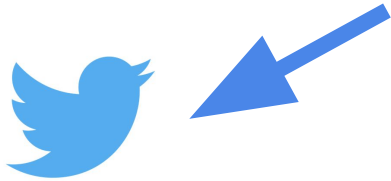




You have a crowd  
that you *\*never\**  
had before!



You need followers!





P4: *"I only have time to work with a single stack. [In Reddit] you see perspectives from people that work on different stacks".*

P12: *"My main goal is to keep in touch with what happens in the industry. Especially as our industry is really really wide and university is more focused on theory. So, I need to find other sources to see other technologies".*



**Motivation to read:** Get in contact with what's going on in the sw development world.



To help other people to find the "best" content.

P14: *"Because I'm interested in other people's opinions."*

**Motivation to upvote:** To help the community to curate the content.

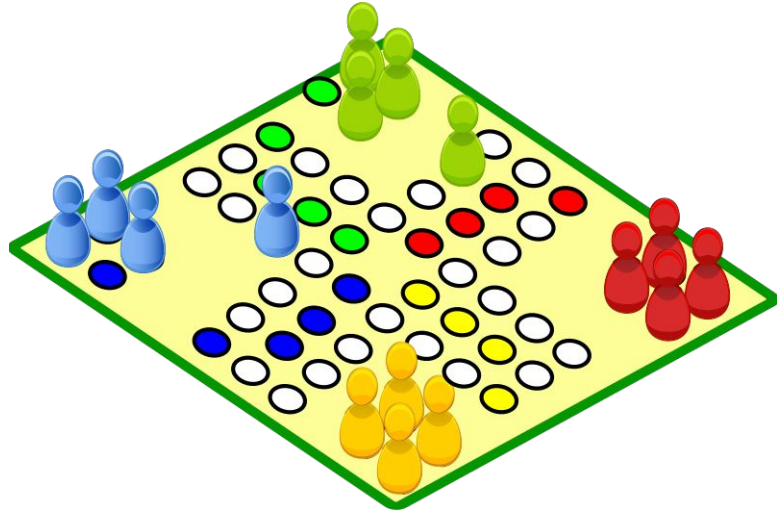


P12: *"if I downvote a comment, it's because it's terribly off-topic or really offensive and it doesn't add anything to the discussion".*

Do not downvote simply because I disagree.

**Motivation to downvote:** To help the community to curate the content.





**Gamification is still tricky!**  
(for the good and for the bad!)

Indirect effects:

- motivates some to participate
- you are respected if you have a lot of karma
- Indication of how good a post is
- P14: "*you can get karma by basically just being a troll.*"

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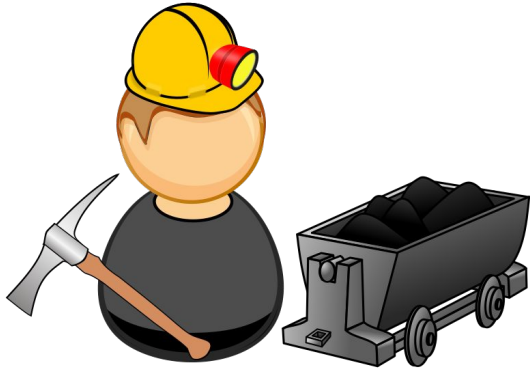
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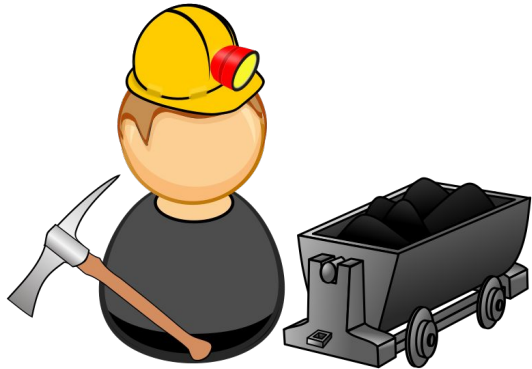
# Discussed technologies

(Reddit)



- Programming Languages (~52%)
- Libraries/Frameworks (~30%)
- System software (e.g., OS, DB) (~20%)
- Software Tools (IDEs, package managers) (~10%)
- Application software (~10%)
- Hardware/Gadget (~5%)

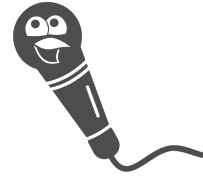
# Sources



- Blog posts
  - Personal posts way more than company blogs
- Software home pages
  - GitHub is the most common source
- Also (but not very popular): YouTube videos, Q&A sites, Wikipedia.
- Scientific sources: only on HackerNews

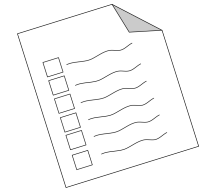
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Community needs  
better curation and  
moderation!

Ignore users that are always negative.

Not to let derailed discussions to go to  
the top of the website.

Complex posts may attract fewer  
upvotes (thus, less publicity).

**Aggressive users**  
(almost all participants mentioned it)



Watch out for the  
pitfalls.

- Not engage with trolls
- Avoid flame wars. P18: *"if you are in a heated conversation, take a step back and ask yourself why"*.
- Avoid (posting) click-baits
- Read the comments of good posts
- Be critical

# Implications

Look beyond Stack Overflow  
and formal documentation  
as sources for developer  
knowledge.

Questions Developer Jobs Tags Users Search...

Why is subtracting these two times (in 1927) giving a strange result?

Microsoft Azure  
Bygg appar snabbare med Azure  
Börja med 1 600 kr i kredit för valfri produkt i 30 dagar.  
PROVA AZURE KOSTNADSFRETT →

▲ 5918 ▼ ★ 1412

If I run the following program, which parses two date strings referencing times 1 second apart and compares them:

```
public static void main(String[] args) throws ParseException {
    SimpleDateFormat sf = new SimpleDateFormat("yyyy-MM-dd HH:mm:ss");
    String str3 = "1927-12-31 23:54:07";
    String str4 = "1927-12-31 23:54:08";
    Date sDt3 = sf.parse(str3);
    Date sDt4 = sf.parse(str4);
    long ld3 = sDt3.getTime() / 1000;
    long ld4 = sDt4.getTime() / 1000;
    System.out.println(ld4-ld3);
}
```

The output is:

353

Why is `ld4-ld3` not 1 (as I would expect from the one-second difference in the times), but 353 ?

If I change the dates to times 1 second later:

```
String str3 = "1927-12-31 23:54:08";
String str4 = "1927-12-31 23:54:09";
```

Then `ld4-ld3` will be 1 .

# Future work

## Study a different sample

(our sample was focused on core users; the periphery is also interesting)

Improve gamification,  
curation, and moderation  
mechanisms



# R/Programming and Hacker News shape and are shaped by software development communities of practice.

Maurício Aniche  
Christoph Treude

Igor Steinmacher

Igor Wiese

Gustavo Pinto

Margaret-Anne Storey

Marco Aurélio Gerosa

