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Co-founder & CEO
Stepsize

How to deal with tech debt:
Lessons learned from the best product / engineering teams

Conf42 🥳

LESSONS FROM 300+ INTERVIEWS

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airbnb
carwow
MADE.COM
pipedrive
Pill Pack by amazon pharmacy
snyk
New Relic
babylon
Pinterest
monzo
INTERCOM
Bloomberg
Cloudflare
CloudBees
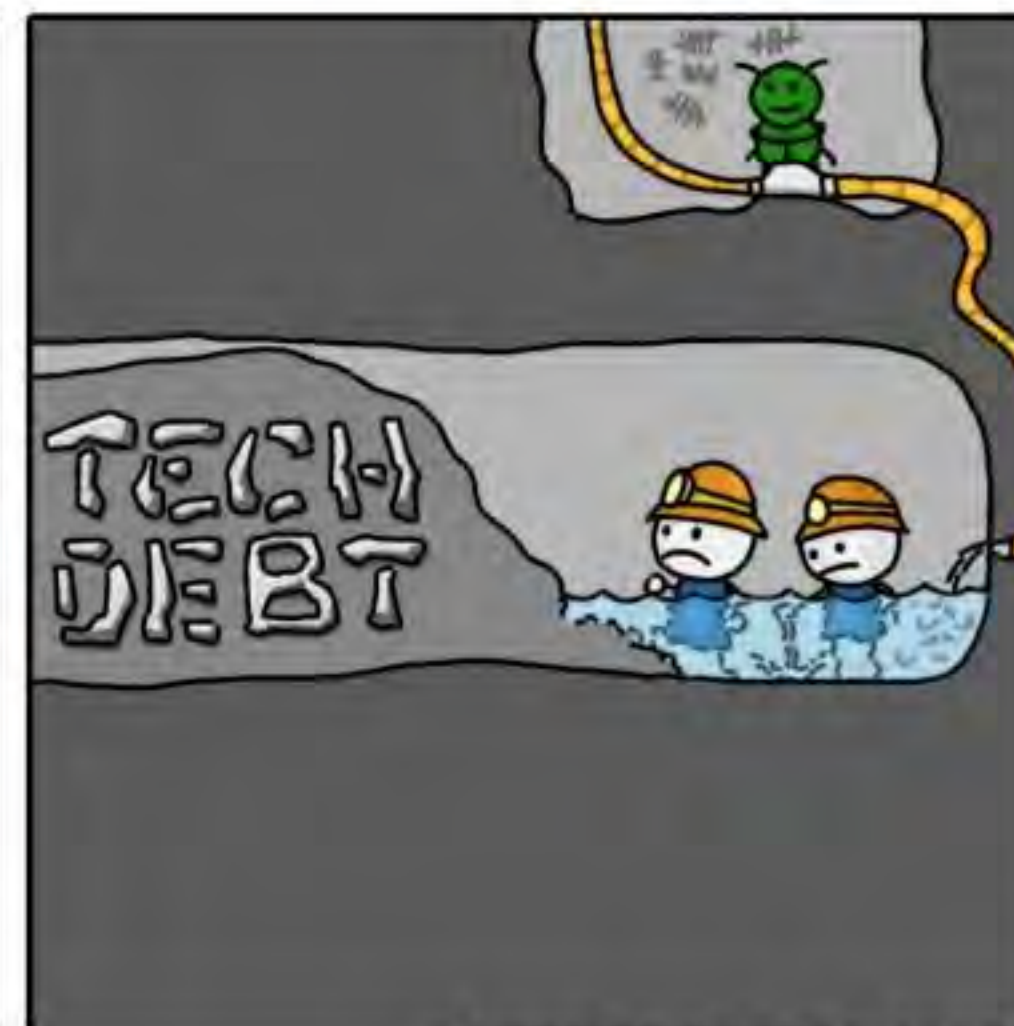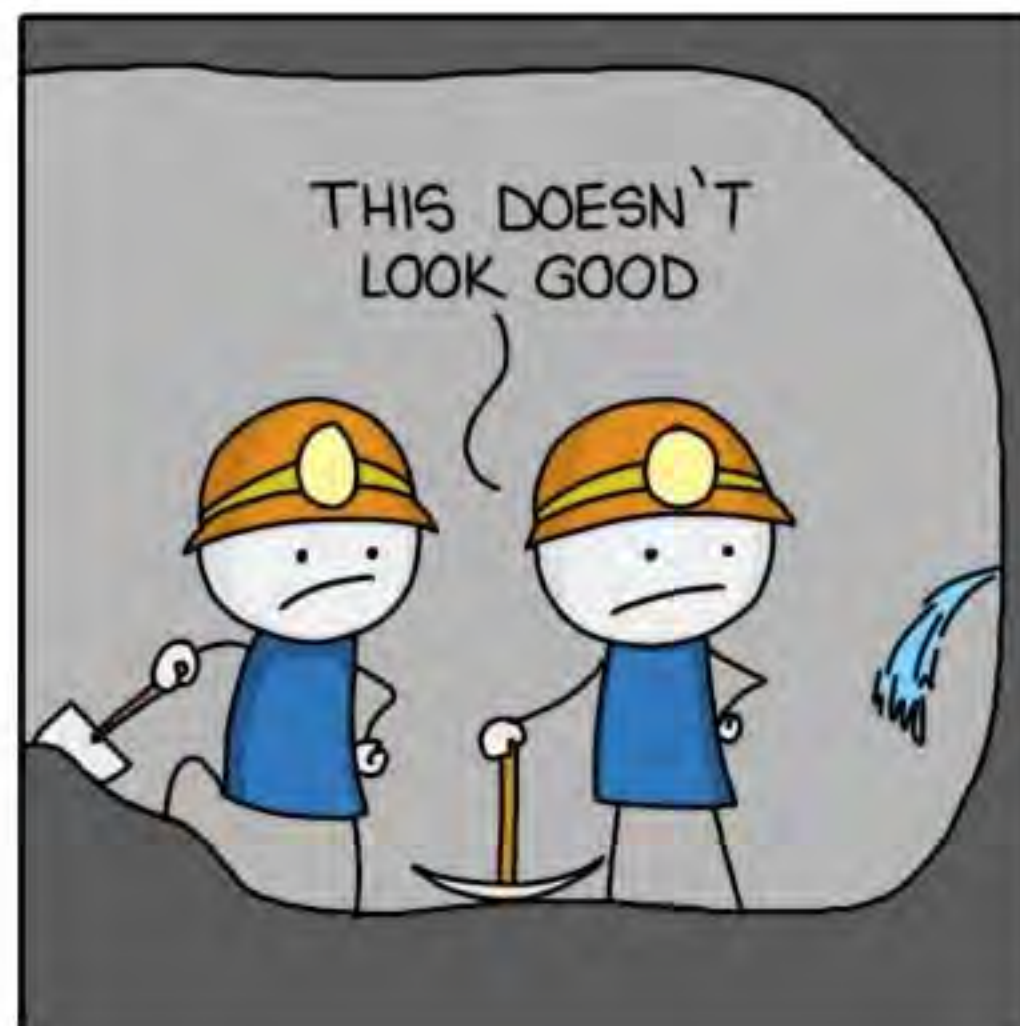CITY PANTRY
AppDirect
SAP Concur
FRONT
Expedia
HubSpot

🧐

WHAT IS TECH DEBT?

'Tech debt is code you've decided is a liability.'

—Me

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WHY IS TECH DEBT A THING?

🤔

'Software exists in a world of uncertainty.'
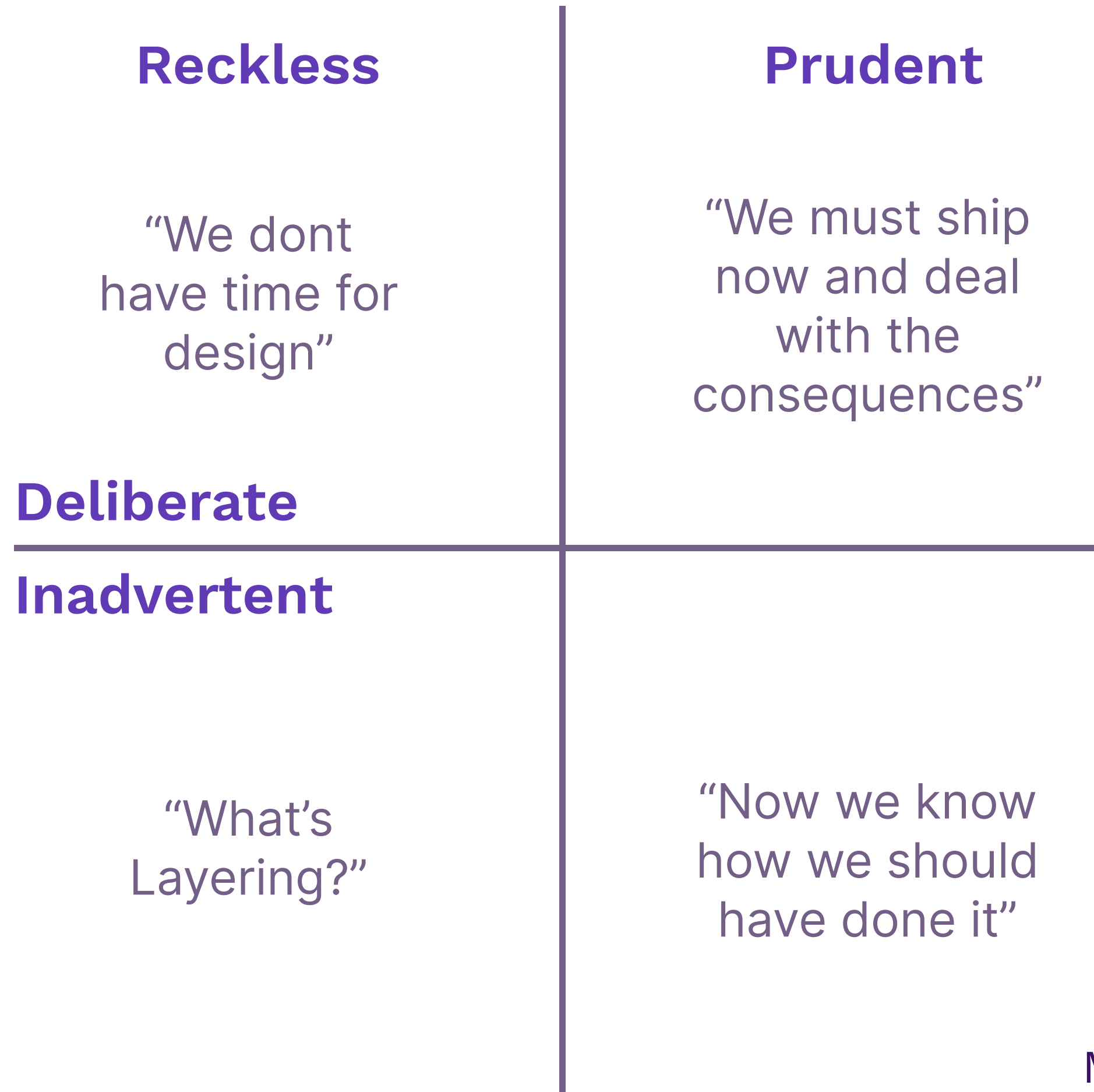
—Martin Fowler

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🤔

WHY IS TECH DEBT A THING?

'[...] it can take a year of programming on a project before you understand what the best design approach should have been.'

—Martin Fowler

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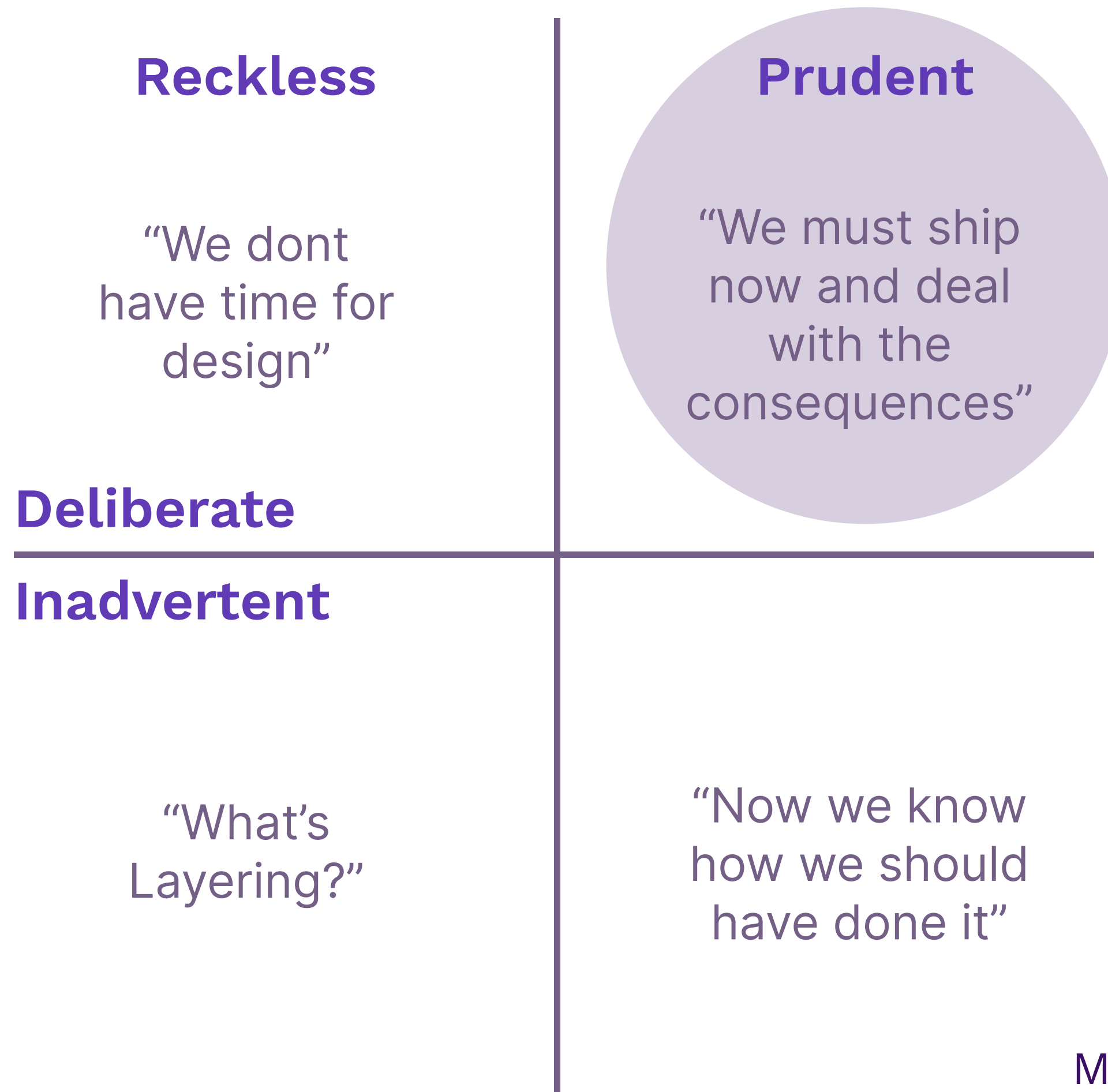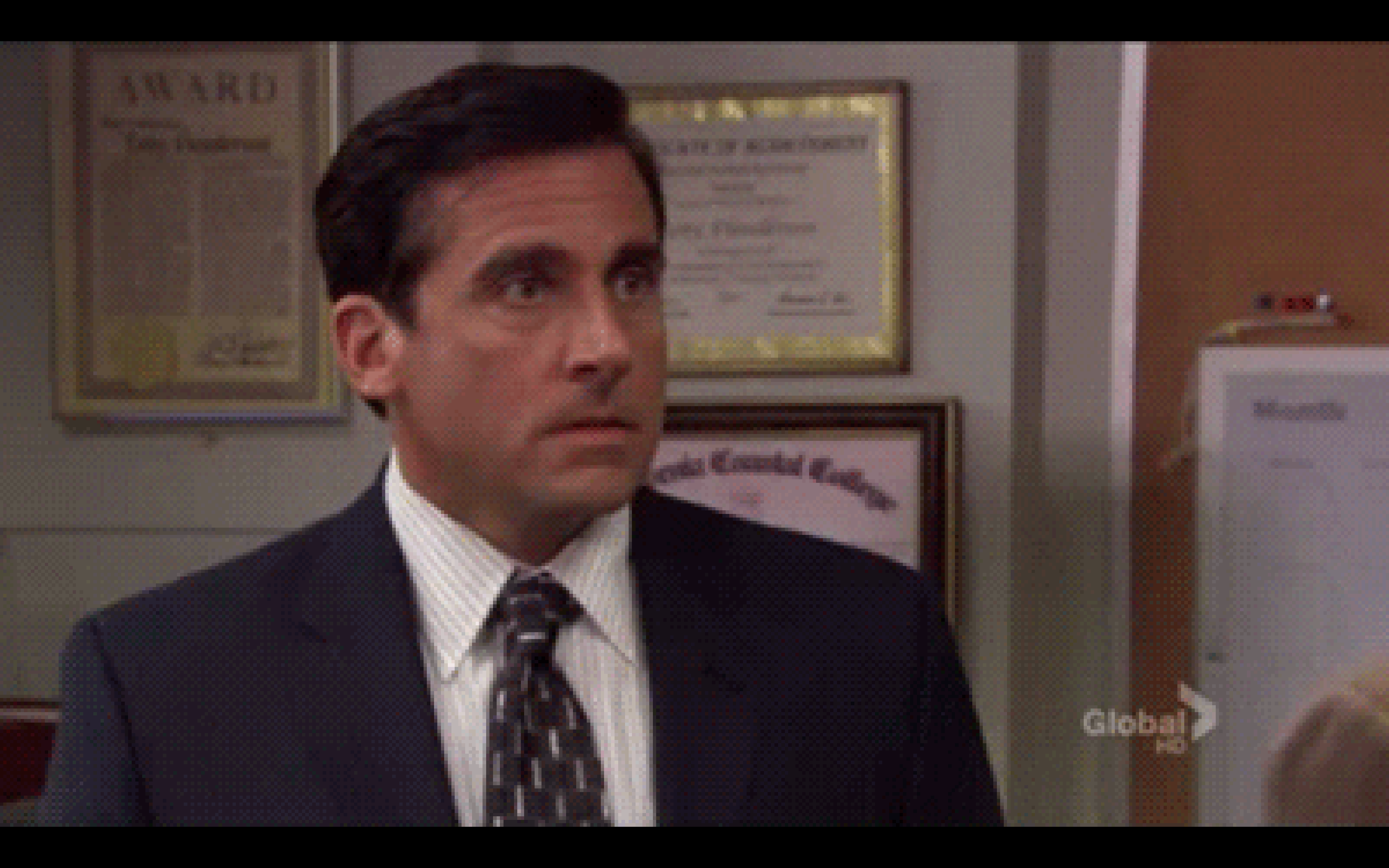# Tech Debt Quadrant

Reckless

Prudent

"We dont have time for design"

"We must ship now and deal with the consequences"

Deliberate

Inadvertent

"What's Layering?"

"Now we know how we should have done it"

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Martin Fowler

Tech Debt Quadrant

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Martin Fowler

💥

MYTHS TO DEBUNK

Tech debt is bad and no one should ever take any on.

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MYTHS TO DEBUNK

Tech debt is bad and no one should ever take any on.

💥

MYTHS TO DEBUNK

Tech debt is only engineering's problem.

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HOW ABOUT

4GIFs.com

💥

MYTHS TO DEBUNK

Tech debt is only engineering's problem.

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MYTHS TO DEBUNK

Managing tech debt properly will slow us down.

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💥

MYTHS TO DEBUNK

Managing tech debt properly will slow us down.

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🏇

WHY BOTHER?

'Leaders that actively manage and reduce technical debt will achieve at least 50% faster service delivery times to the business.'

Gartner®

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⌛

WHY BOTHER?

Engineers spend 42% of their time fixing the past rather than building the future.

stripe

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🐢

WHY DOES IT MATTER?

Poor quality code slows everyone down within weeks.

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😱

TECH DEBT IMPACTS EVERYONE

Tech debt

⇓

⬆ Bugs   +   ⬆ Performance issues   +   ⬆ Downtime

⬆ Work for QA   ⬆ Work for site reliability   Broken SLAs

⬆ Customer complaints

↓

⬆ Work for support, CS, AM

⇓

Unhappy customers

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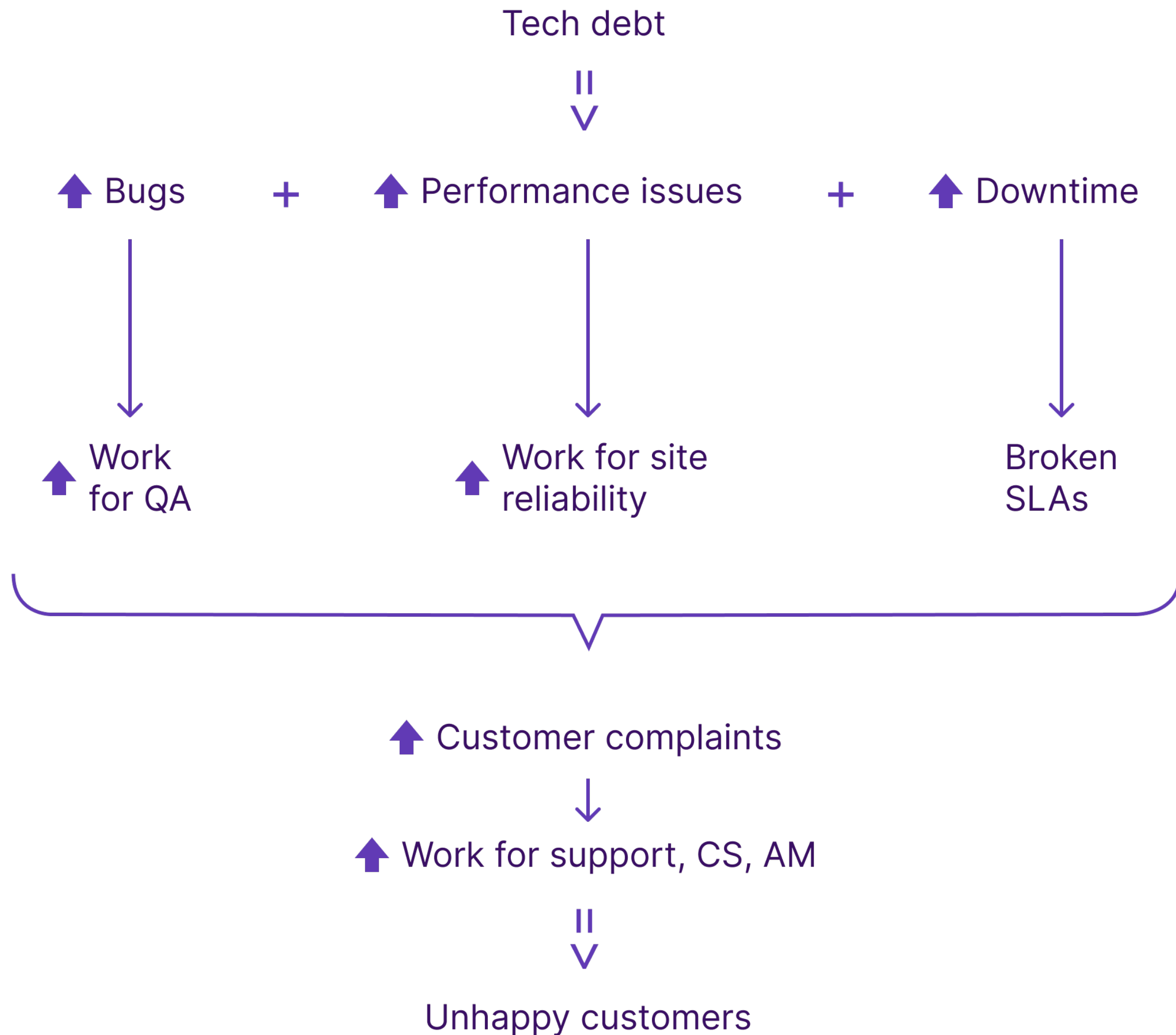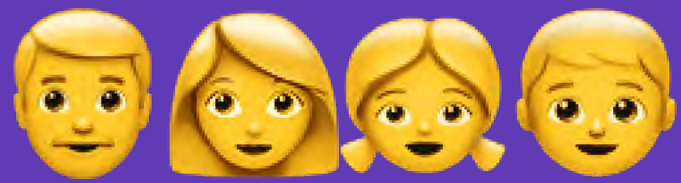
CULTURE & TECH DEBT

👨‍👩‍👧‍👦
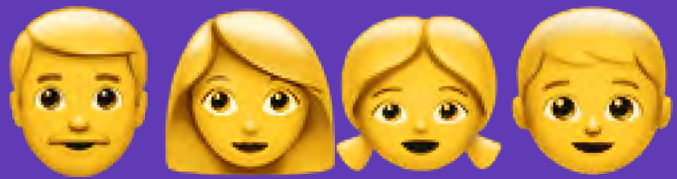
CULTURE & TECH DEBT

Ownership is a leading indicator of engineering health.

—Gareth Visagie, Chief Architect at Snyk

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CULTURE & TECH DEBT

% of edits of main contributor

Files **without** bugs: main contributor made **more** than 50% of all edits

Files **with** bugs: main contributor made **less** than 60% of all edits

Files without bugs

Files with bugs

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CULTURE & TECH DEBT

Ownership spectrum

Orphaned code ←————————————————————————————————————→ Absolute ownership

10%   50%   90%

——— Weak ownership ——— Collaborative ownership ———

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TECH DEBT BUDGETS

Debt

Ideal amount of tech debt

Time

TECH DEBT WORTH PAYING BACK

Codebase

Roadmap

Tech debt to pay back

Tech debt

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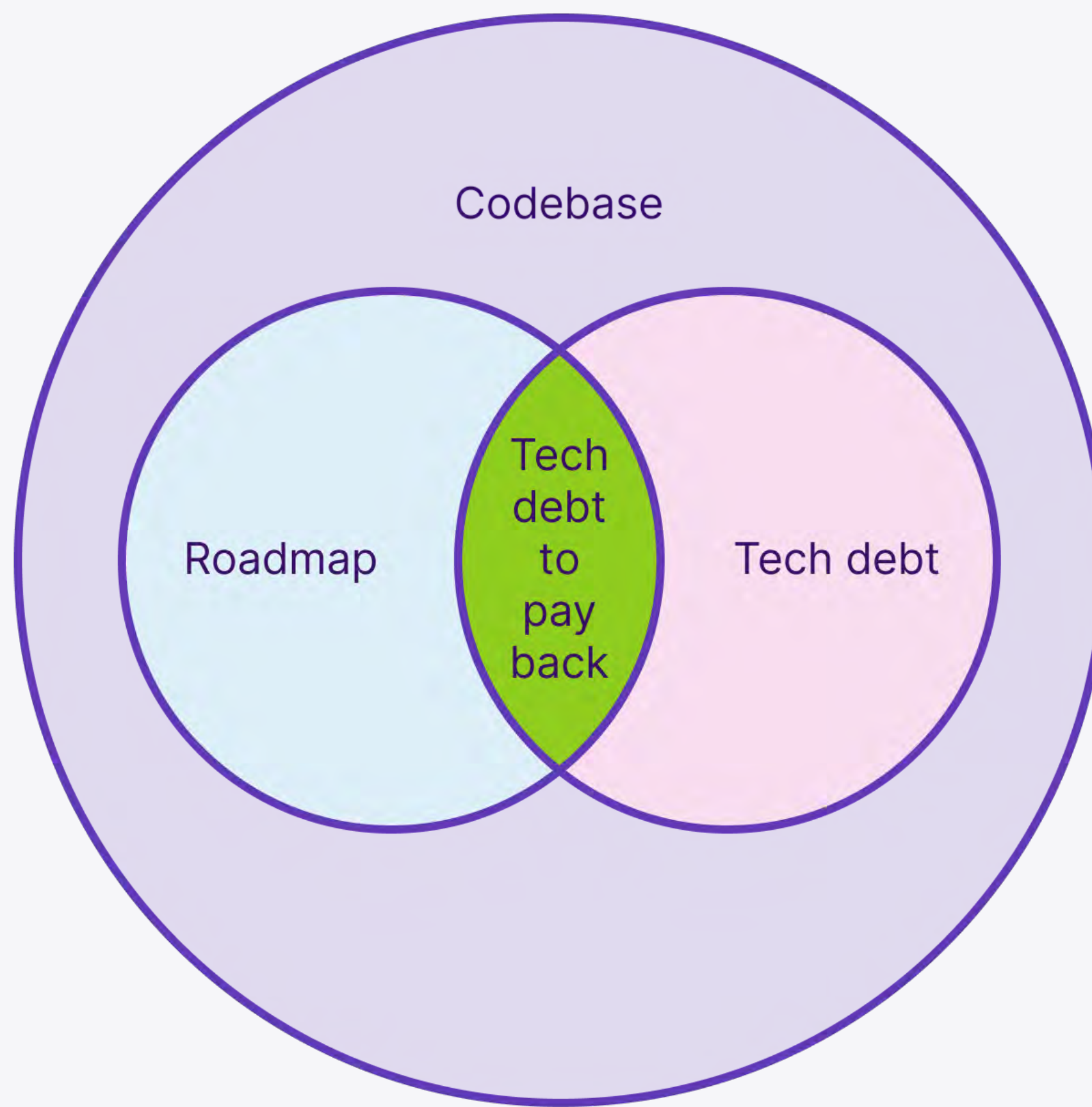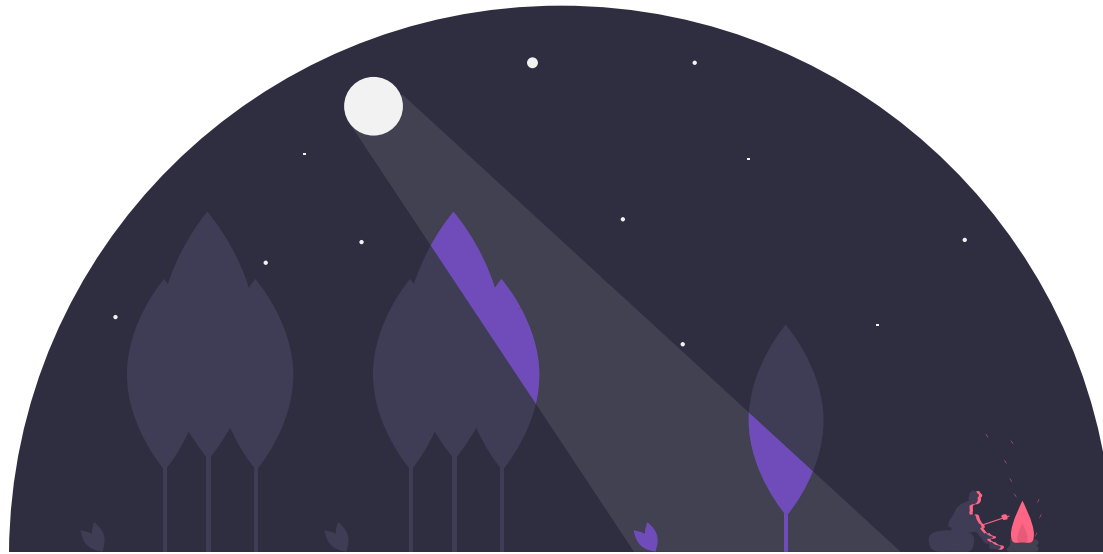
Is the debt small, medium, or large?

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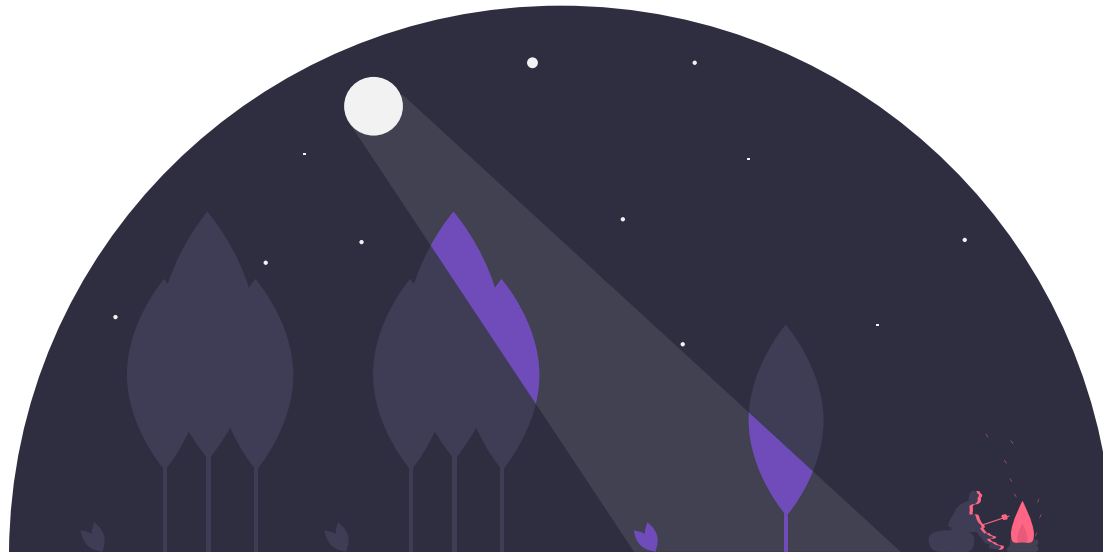
Small debt: follow the boyscout rule

Always leave the code better than you found it.
—Robert C. Martin a.k.a Uncle Bob

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Medium debt: go through sprint planning

Consider how much time PMs spend curating the set of features to work on.
Do the same for tech debt.
—James Rosen, Engineering Manager at Everlane

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HOW? Track your tech debt.

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🕵️

HOW?

Find and scope the debt in the way of your sprint.

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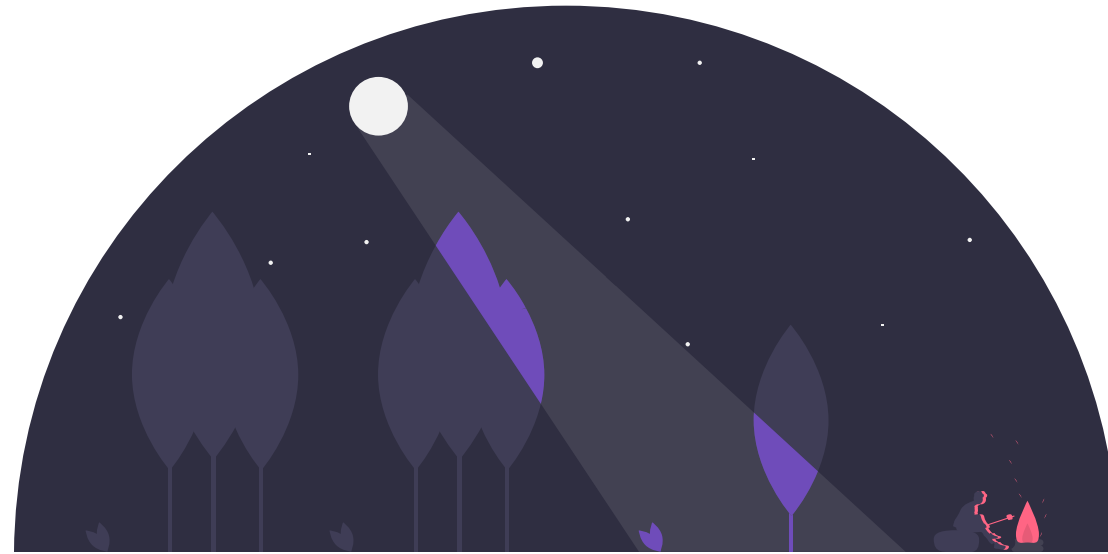
Large debt: have a quarterly meeting

Include all Engineering and Product leaders.
Engineering Managers present the business case for large pieces of debt.
Tech debt to be addressed is then added to the roadmap.

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MAKING THE BIZ CASE

Which business priorities will be put at risk because of this debt?

Will the debt get worse if unaddressed? How quickly and how much worse?

What has this debt cost the business so far?

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TAKEAWAYS

Tech debt is inevitable and can be used to gain leverage.

Manage tech debt carefully or it will manage you.

Create an engineering culture of ownership.

Include tech debt in your Agile processes.

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SOLUTION

'We used to have one tech debt sprint a year. Now with Stepsize, we deal with tech debt continuously.'

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snyk

Editor-first issue tracker for a healthy codebase

Create & view code issues in your editor

Track & prioritise code improvements

Add key issues to your sprint with our Jira integration

Sign up on stepsize.com

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BOOKMARKED CODE

`<>` utils.ts #411-425 tyrion/lib
useAlert.tsx tyrion/lib
`<>` handleNewPrComment.ts #12-29 tyrion/lib/bitbucke

REPORT TECH DEBT

Describe debt in the codebase

+ New issue

Existing issue

Report debt's impact

Time lost

Bug

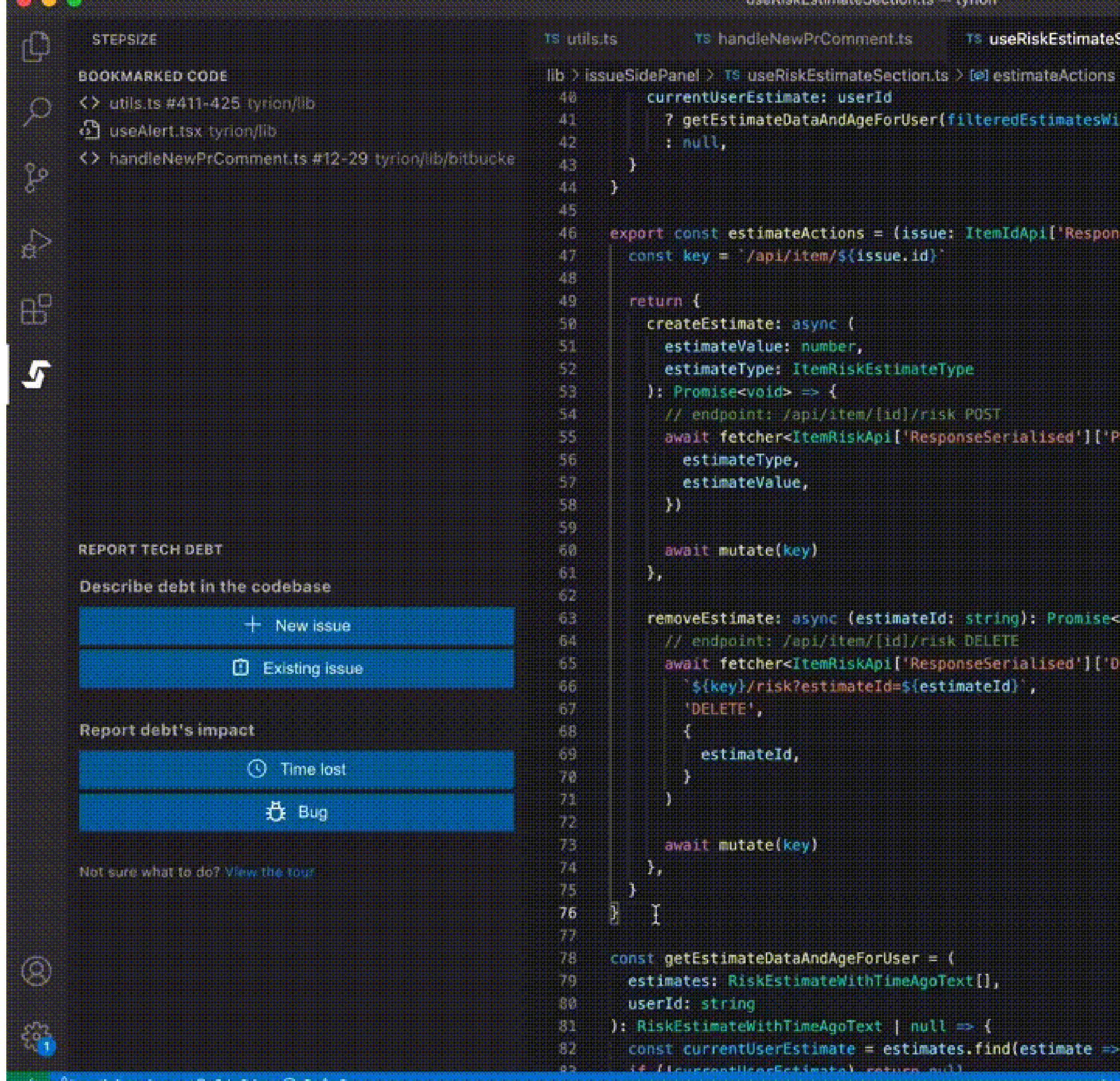Not sure what to do? View the tour

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```
lib > issueSidePanel > TS useRiskEstimateSection.ts > [∅] estimateActions
40          currentUserEstimate: userId
41            ? getEstimateDataAndAgeForUser(filteredEstimatesWi
42            : null,
43          }
44        }
45
46    export const estimateActions = (issue: ItemIdApi['Respon
47      const key = `/api/item/${issue.id}`
48
49      return {
50        createEstimate: async (
51          estimateValue: number,
52          estimateType: ItemRiskEstimateType
53        ): Promise<void> => {
54          // endpoint: /api/item/[id]/risk POST
55          await fetcher<ItemRiskApi['ResponseSerialised']['P
56            estimateType,
57            estimateValue,
58          })
59
60          await mutate(key)
61        },
62
63        removeEstimate: async (estimateId: string): Promise<
64          // endpoint: /api/item/[id]/risk DELETE
65          await fetcher<ItemRiskApi['ResponseSerialised']['D
66            `${key}/risk?estimateId=${estimateId}`,
67            'DELETE',
68            {
69              estimateId,
70            }
71          )
72
73          await mutate(key)
74        },
75      }
76    }    I
77
78    const getEstimateDataAndAgeForUser = (
79      estimates: RiskEstimateWithTimeAgoText[],
80      userId: string
81    ): RiskEstimateWithTimeAgoText | null => {
82      const currentUserEstimate = estimates.find(estimate =>
```

10x engineers do not exist

100x codebases do

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@AlexOmeyer
@StepsizeHQ

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