



Jumping Rivers Ltd



@jumpingrivers@fosstodon.org

**Jumping
Rivers**

Can I trust this package?

Colin Gillespie



Almost ex-academic
25+ years of using R



Almost ex-academic
25+ years of using R
R at Universities



Co-founder of Jumping Rivers

Everything around R & Python

Deployment
Validation
Maintenance

Change: You've decided to move to R



Change: You've decided to move to R

- You've hired clever people
- What packages do you use?
- How do you decide?

Change: You've decided to move to R

- You've hired clever people
- What packages do you use?
- How do you decide?
- Clever people get
 - Frustrated
 - Find workarounds

**Jumping Rivers
does lots of training**

We always get asked



Can we trust this package?

Confession time



Confession time

- Wave hands
- Waffle about CRAN

Confession time

- Wave hands
- Waffle about CRAN
- Common sense
- Change topic

Can we trust “this” R package?



Can we trust “this” R package?

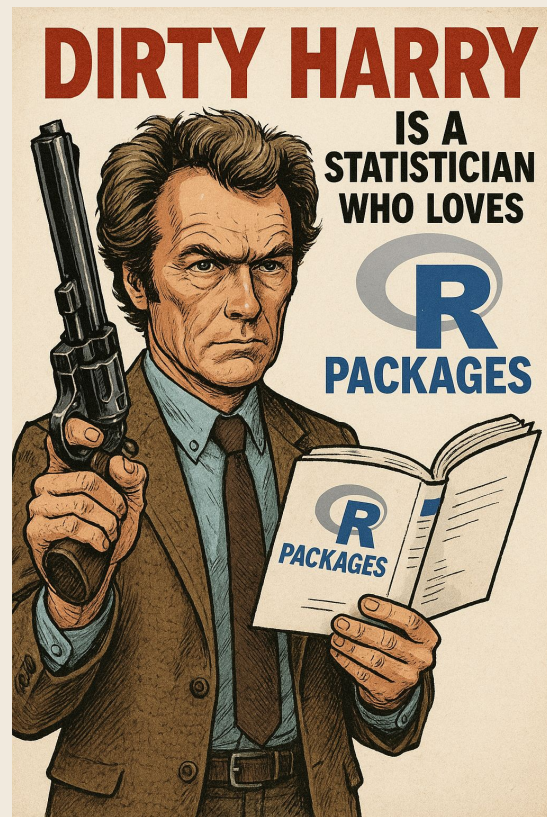
It depends on your **risk appetite**

Can we trust “this” R package?

It depends on your **risk appetite**

So

Do you feel lucky, Punk?*



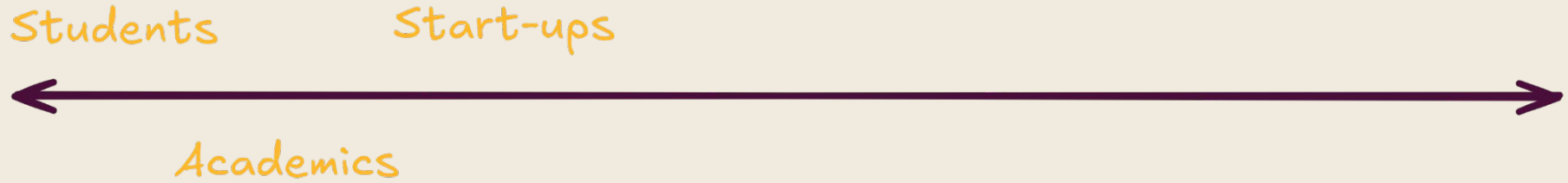
JR

*I realise most people won't get this reference.
Ask your seniors for context.

Risk Appetite



Risk Appetite



Risk Appetite



Risk Appetite

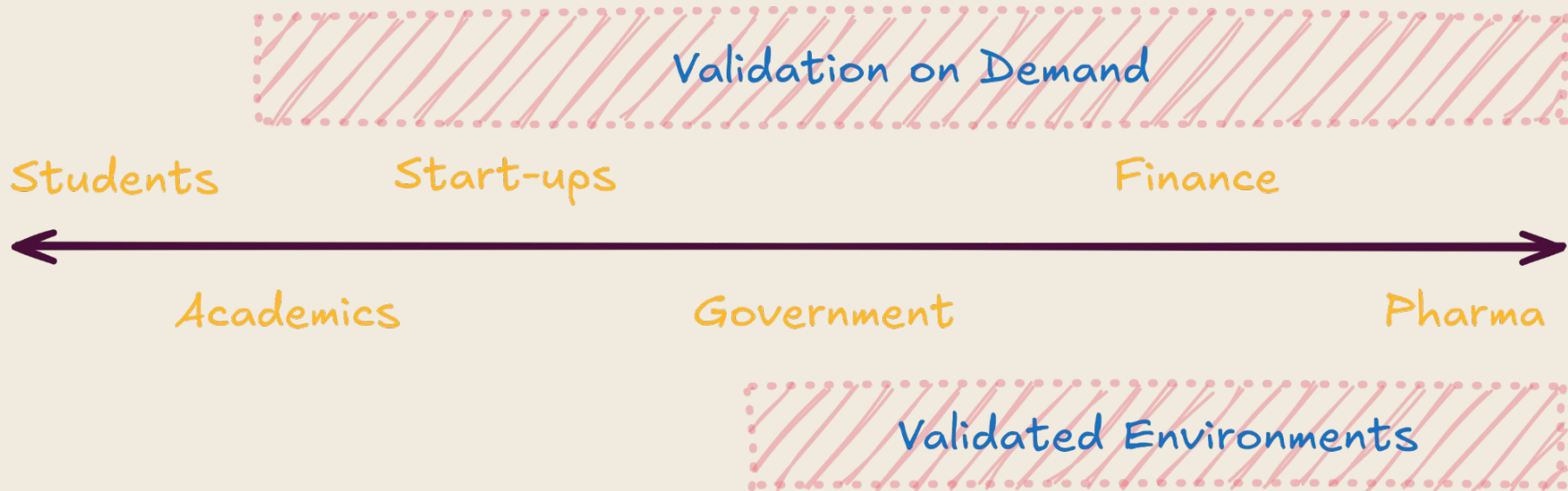
JR



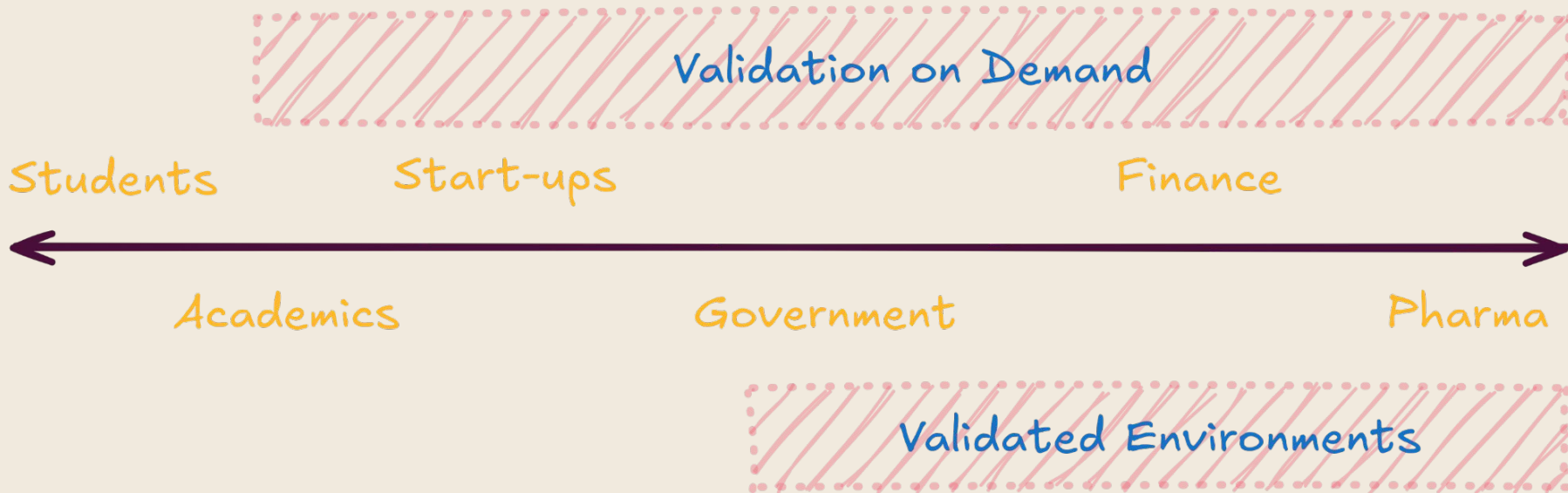
Risk Appetite



Risk Appetite



Risk Appetite



Where are you on this graph?

Many organisations are on both sides



Package Risk

How would you assess a package?



How would you assess a package?

Author “fame”

Code coverage

How would you assess a package?

Author “fame”

Code coverage

Vignettes

Source control

Issue closure rate

How would you assess a package?

Author “fame”

License

Code coverage

NEWS

Vignettes

Source control

Issue closure rate

How would you assess a package?

Author “fame”

License

Code coverage

NEWS

Vignettes

Security

Source control

Downloads

Issue closure rate

Rev dependencies

How would you assess a package?

Author “fame”

License

Code coverage

NEWS

Vignettes

Security

Source control

Downloads

Issue closure rate

Rev dependencies

Top 3 assessments?

How would you assess a package?

Author “fame”

Code coverage

Vignettes

Source control

Issue closure rate

License

NEWS

Security

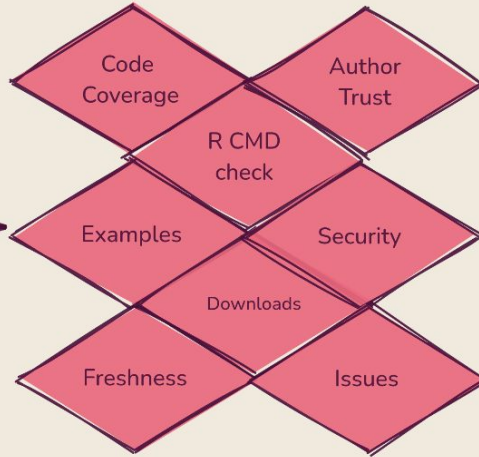
Downloads

Rev dependencies

Top 3 assessments?



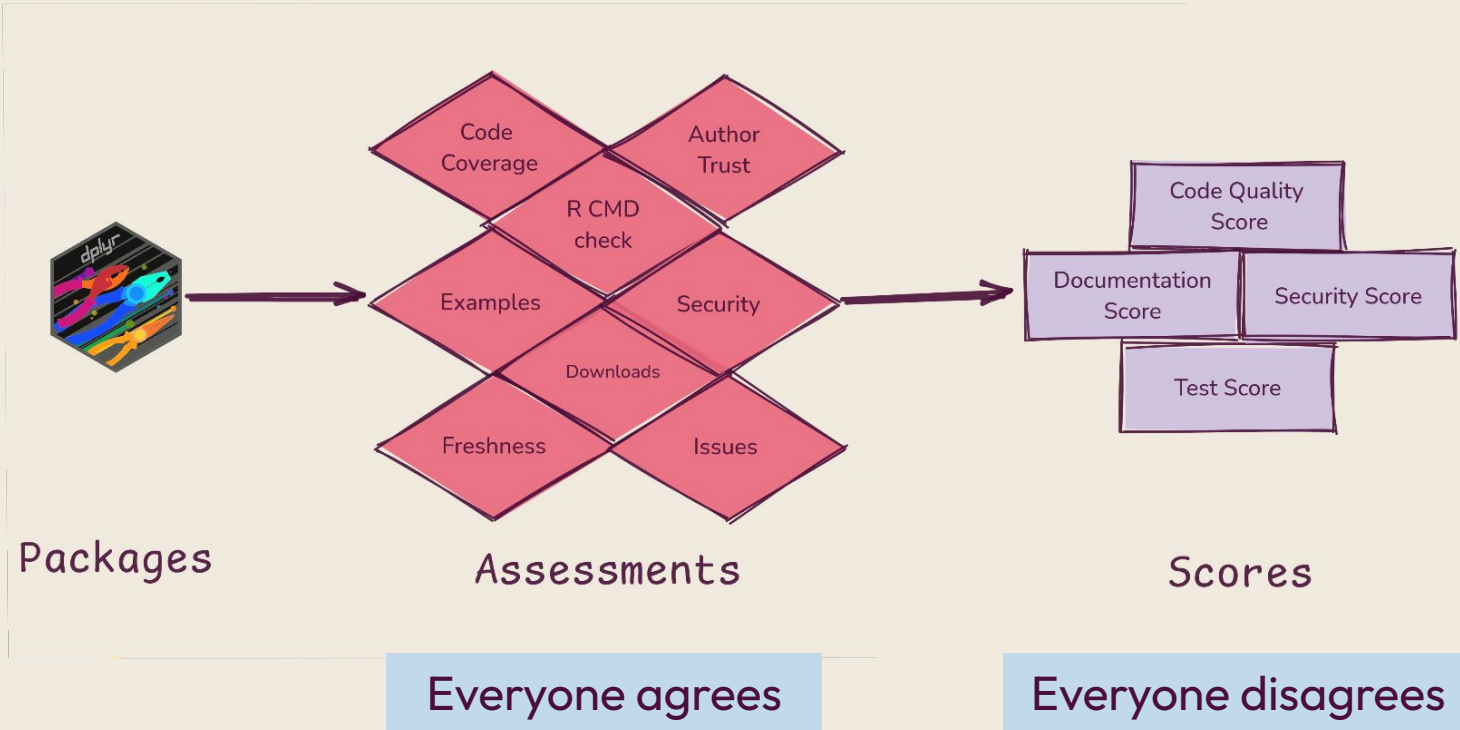
Packages

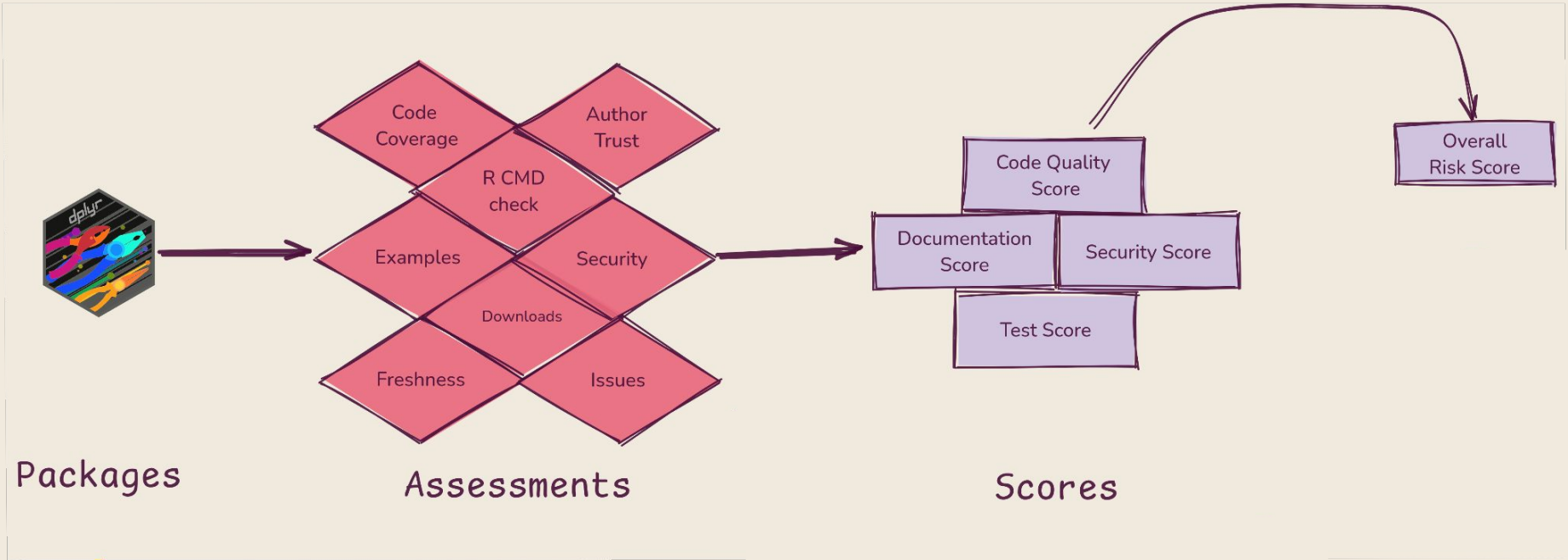


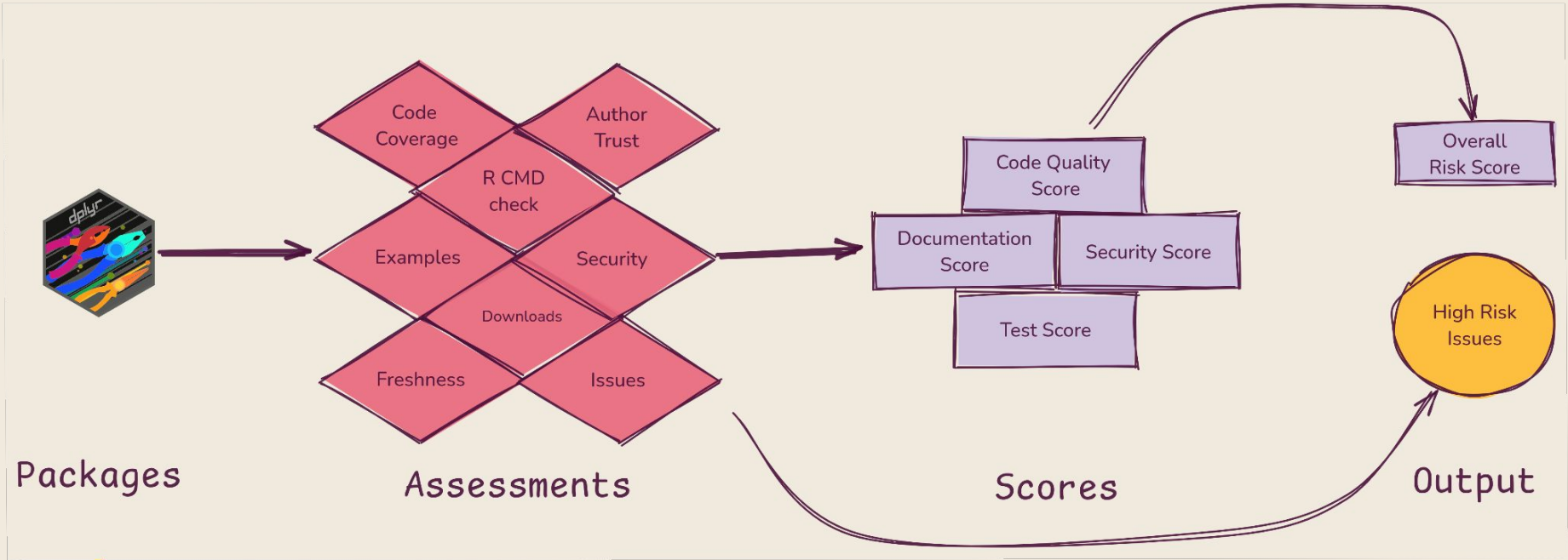
Packages

Assessments

Everyone agrees







How do you score a package?



Vignettes (extra documentation)

- Binary score: 0 or 1

Vignettes (extra documentation)

- Binary score: 0 or 1

What about multiple vignettes?

Do they get a higher score?

Vignettes (extra documentation)

- Binary score: 0 or 1

What about multiple vignettes?

Do they get a higher score?

Told you we would disagree on scores

Dependencies

- How big is the Imports list

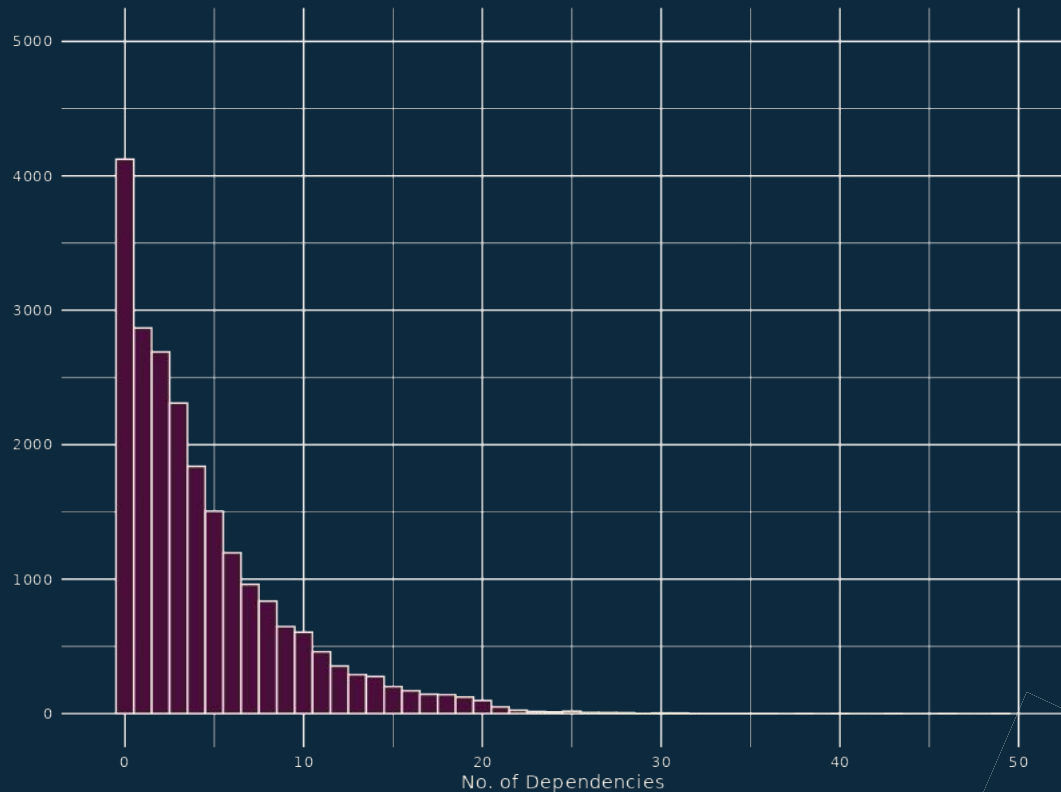
Dependencies

- How big is the Imports list
- Everyone has an opinion
 - So we cheated!
- Analysed all CRAN packages

Dependencies

- Q1: 1 dep'
- Q2: 3 dep'
- Q3: 6 dep'
- Max: 49

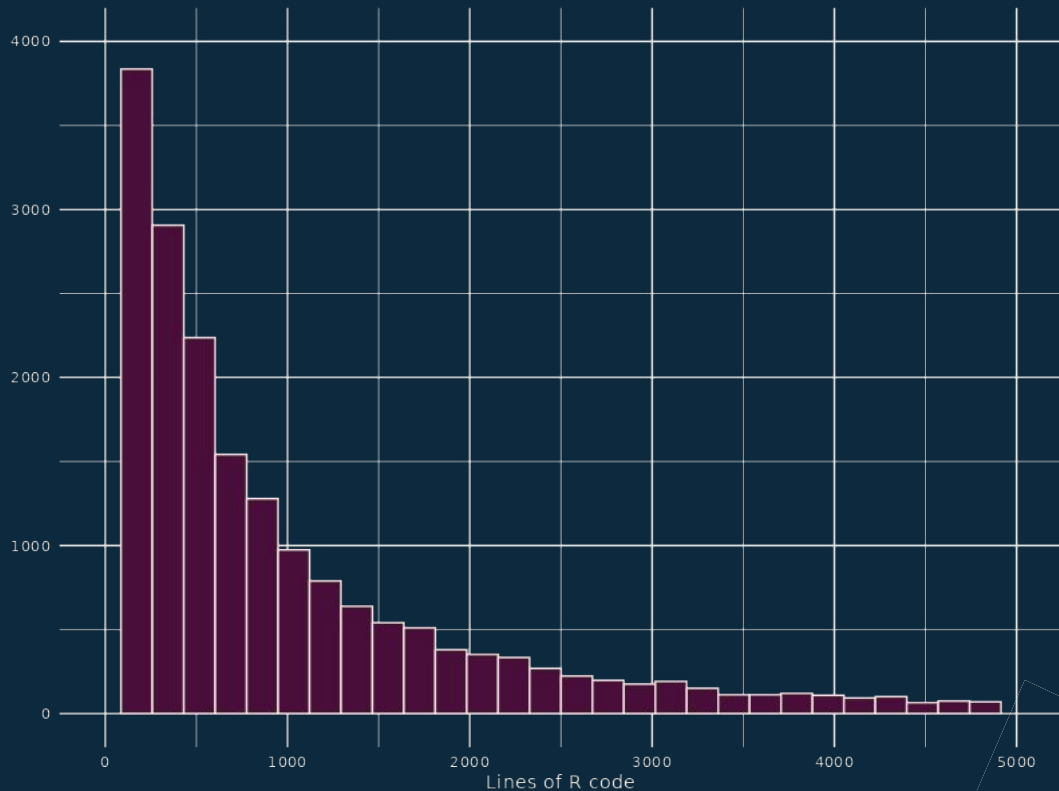
Map ECDF to score



Codebase Size

- Q1: 200 Lines
- Q2: 600 Lines
- Q3: 1500 Lines
- Max: 100,000+

Map ECDF to score



Moving to R

- Be proactive
- What's your procedure for assessing packages
 - Needs to be dynamic

<https://litmus-dashboard.jmpr.io/>

Dashboard: Overview of all packages



918

Package Collection



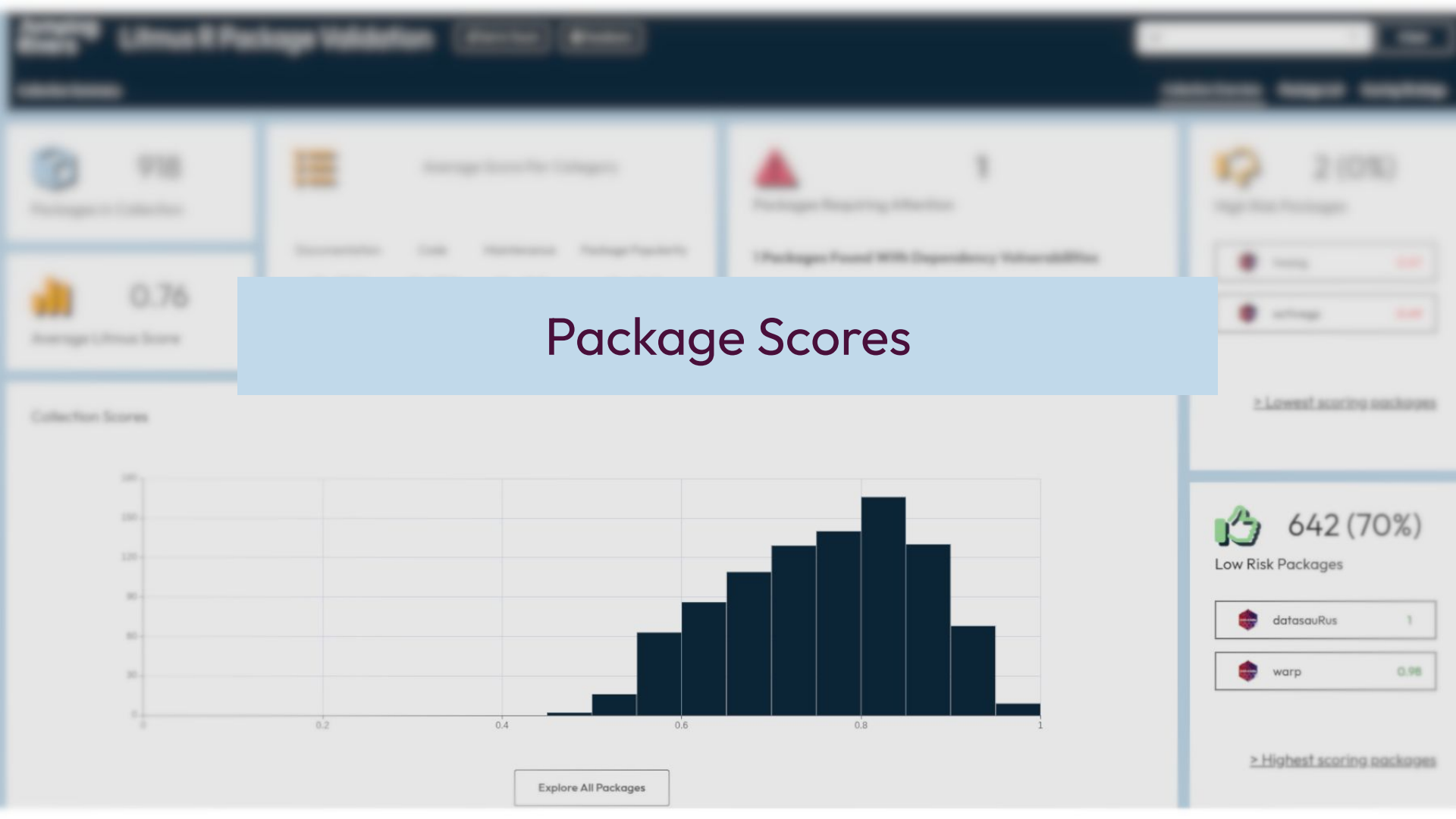
918

Package Collection




2 (0%)

Package Collection



Collection Summary




918

Packages in Collection




0.76

Average Litmus Score



Average Score Per Category

Documentation	Code	Maintenance	Package Popularity
0.72	0.71	0.81	0.98



Packages Requiring Attention

1 Packages Passed With Dependent Vulnerabilities

0 Packages With Critical Issues

Score Breakdown

High risk packages



[Return to Package List](#)

Package: dotwhisker

Version: 0.8.3

Litmus Score: 0.72

Maintainer: Yue Hu <yuehu@tsinghua.edu.cn>

Website: <https://fsolt.org/dotwhisker/>

Diffify: <https://diffify.com/R/dotwhisker>

Score Breakdown

Decision Records

JR Decision Support Data

Search

Package Drill down

Category	Score
Contribution	Contribution

Litmus Score: 0.72



Scores per metric

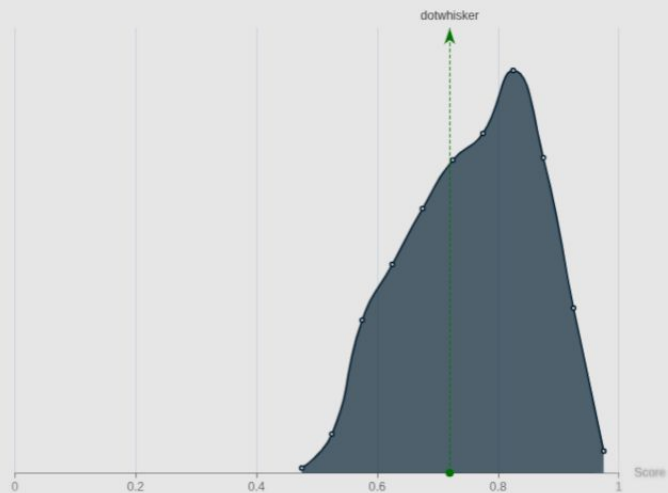
Search

Category	Metric	Score ↓	Category Contribution ↓	Score Contribution ↑
▼ documentation (6)				
○	Examples: Proportion of Help Pages	0.86	36%	5%
○	Has News	1.00	14%	2%
○	Exported Objects Documentation	1.00	14%	2%
○	NEWS Updated to Current Version	1.00	14%	2%
○	Has Vignettes Files	1.00	14%	2%
○	Has Website URL	1.00	7%	1%
▼ code (7)				
○	Unit Test Coverage	0.00	31%	16%
○	Vulnerabilities	1.00	31%	16%
○	Package Dependencies	0.16	16%	8%
○	Exported Functions Coverage	0.00	6%	3%
○	Codebase Size	0.58	6%	3%
○	Check Results Score	1.00	6%	3%
○	Exported Objects	0.71	3%	2%



Comparison with other packages

Performance in Collection



Do you feel lucky, Punk?

Luck has nothing to do with it

Summary

JR

- A little bit of thought goes a long way
- Sensible infrastructure
- Validation
- **diffify.com**
- Shiny in Production Conference
 - Discount code: JRFRIENDS
 - <https://sip.jmpr.io/>



Questions: **colin@jumpingrivers.com**