Software Portfolio Visualization - Information Needs

This survey contains a few questions about information needs of software quality managers.

The results of these interviews should help by defining the requirements of an expert visualization system for monitoring and analyzing software portfolios.

General questions	These questions should identifying the stake holders and use cases in the area of Software Portfolio Quality Analysis.

1. **What is your current job description?**

   This question is just for getting an overview of the different jobs related to software portfolio and quality management

2. **How is your current work related to software quality aspects or software quality management?**

   Software quality aspects can often be part of a job, even if not named explicitly in the job title.

3. **Could you please describe your daily work in the area of software quality management in one or two short sentences?**

   This question helps identifying possible use cases regarding software portfolio quality analysis.

Definition: Software Portfolio

A software portfolio describes a set of software projects/repositories that are grouped together in that way, that monitoring and comparing the quality attributes within this group would deliver meaningful results. Examples:

- The product suite developed by a company if monitored with company-wide quality standards

- Different, not directly related projects that are comparable on a technical or domain level

- A single software system, available in different, client-specific variations and releases (i.e. Framework based architectures etc...)

4. **How many software repositories are (on average) part of your software portfolio?**

   This question should help to define the average scope of a software portfolio

   _____

5. **How large is the biggest project within your portfolio (in Lines of Code)?**

   This question should help to define the dimensions which have to be handled during software portfolio analysis.

   Markieren Sie nur ein Oval.

   ◯ Less than 10 000 LOC

   ◯ 10 000 to 100 000 LOC

   ◯ 100 000 to 500 000 LOC

   ◯ 500 000 to 1 Mio LOC

   ◯ More than 1 Mio LOC

Software Portfolio Quality Tools

The goal here is to collect some information about the current market situation and popular features

6. Do you know any of the following Software Quality Managment Tools?

multiple answers possible

Wählen Sie alle zutreffenden Antworten aus.

- [ ] SonarQube (https://www.sonarqube.org/)
- [ ] SonarCloud (https://sonarcloud.io/)
- [ ] CodeClimate (https://codeclimate.com/)
- [ ] Codacy (https://www.codacy.com/)
- [ ] GrimoireLab (https://chaoss.github.io/grimoirelab/)
- [ ] VeraCode (https://www.veracode.com/)

7. Which tools do you use for your software quality tasks?

These can be all kind of tools, like specific dedicated software quality analysis applications like the ones in the question before, but also programs like Excel, Word or any general purpose or domain specific programming languages.

8. Regarding the tools you use, which features related to software quality analysis do you value most in these tools?

please give a short description of your favorite featue and why it is so valuable for you

9. What would be a feature you wish would be supported by your tool of choice but currently is not?

    please give a short description of the feature you wish would be available in any tool

    _____

    _____

    _____

    _____

    _____

Visualization

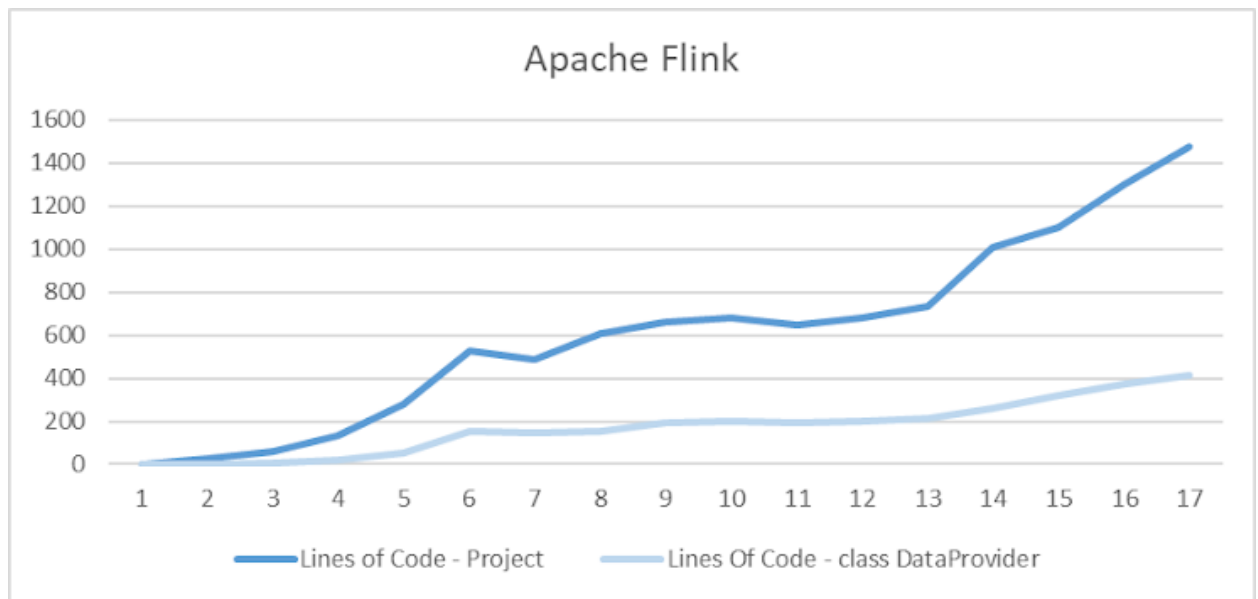Questions related to the visualization of software portfolio analysis data.

Feature Evaluation

Now comes a list of possible features a software portfolio analysis tool could provide.
The features will start at a very granular level (repositories and artifacts within repositories) and will then move up to a bird-eye Portfolio view.

For every feature, please rate on a scala from 1 (very important for you) to (5 = not important for you), how much you would like to have this feature available in your tool of choice.

10. Comparing metrics of single artefacts in relation to the project/portfolio

For example, to check how the metrics of a single file or class evolves compared to the overall trend of a project or portfolio
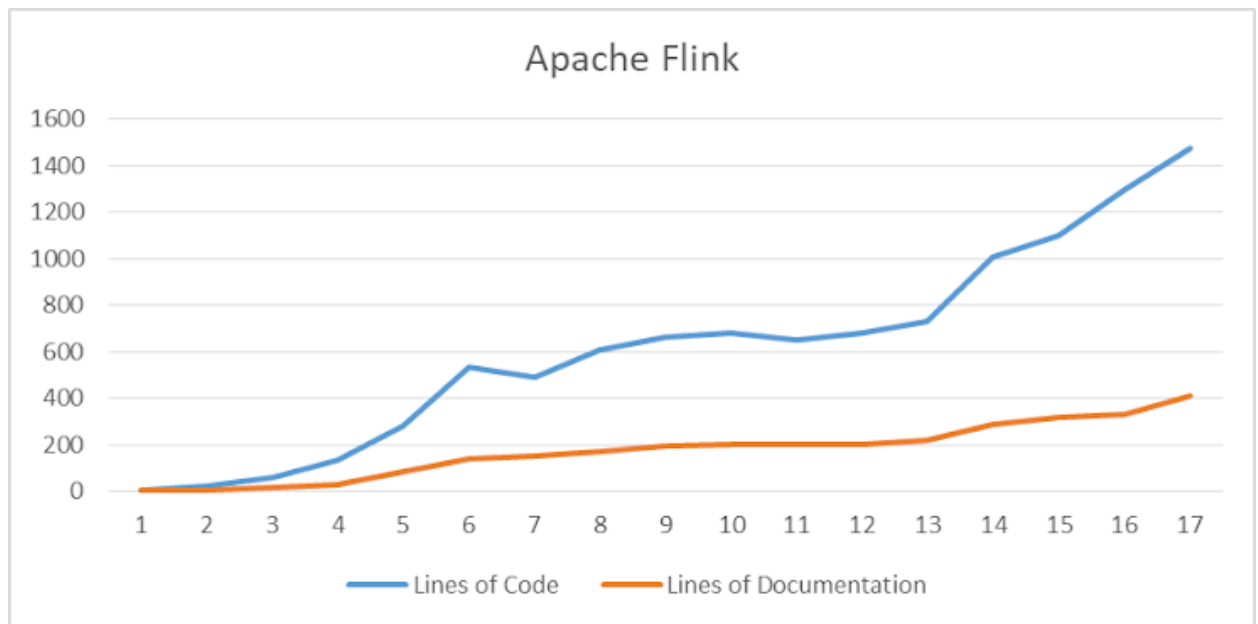

Markieren Sie nur ein Oval.

	1	2	3	4	5	
very important	◯	◯	◯	◯	◯	not important at all

11. Comparing metrics within the same project

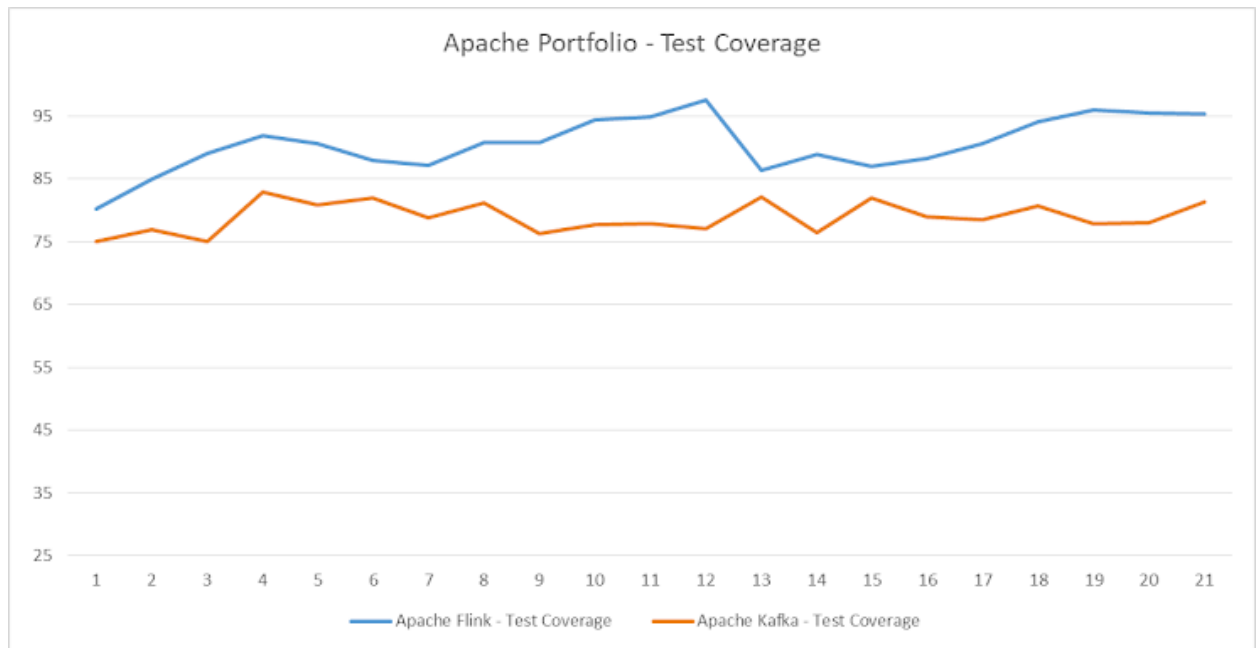For example to find correlations between different metrics (like Cyclomatic Complexiy and LOC) within a given project

Markieren Sie nur ein Oval.

	1	2	3	4	5	
very important	( )	( )	( )	( )	( )	not important at all

12. **Comparing metric trends of different projects within the same portfolio**

For example to check how the metrics of one projects have evolved compared to other projects

Markieren Sie nur ein Oval.

	1	2	3	4	5	
very important	( )	( )	( )	( )	( )	not important at all

13. **Determining the overall portfolio health by a custom aggregated indicator (like a star-rating or grading scheme)**

Which metrics or aspects of a project or portfolio should be taken into account by such an indicator?

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_____

14. How valuable would you rate such an indicator to determine the overall portfolio/project health?

Markieren Sie nur ein Oval.

	1	2	3	4	5	
very important	◯	◯	◯	◯	◯	not important at all

15. Navigate to "Hot Spots" within the trend graph

Automatically navigate to points in time where the trend graph changed significantly (e.g. a metric went under a threshold, the change of a metric was more than 10% etc..., the relation between two metrics changed significantly)

Markieren Sie nur ein Oval.

	1	2	3	4	5	
very important	◯	◯	◯	◯	◯	not important at all

16. What could be a possible Project or Portfolio "Hot Spots" that would be interesting for you?

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_____

Metrics

This section is about the software metrics which are gathered and used to evaluate the health state of a software portfolio.

17. Which are the five most important metrics you use for your software quality analysis?
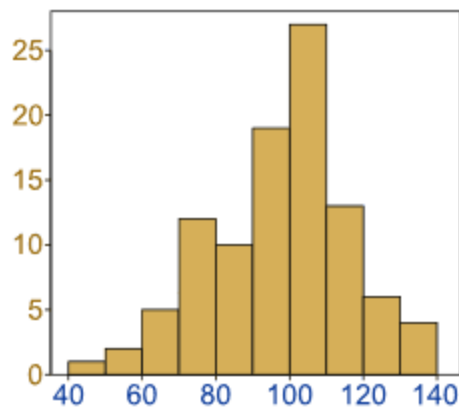
Please name or describe these metrics

_____

_____

_____

_____

_____

18. Regarding cumulated metric values for a project or portfolio, in which values would you be interested in?

Distribution

Wählen Sie alle zutreffenden Antworten aus.

	Very interested	Interested	Neither	Not interested	Not interested at all
Average values (for instance, average Inheritance deep of all classes in a project)	☐	☐	☐	☐	☐
Median values (for instance, median of the inheritance deep for all classes in a project)	☐	☐	☐	☐	☐
Min/Max values (like the minimum/maximum test coverage a project can have over time)	☐	☐	☐	☐	☐
Distribution (for example, how are the lines of code per file distributed in a project)	☐	☐	☐	☐	☐
Thresholds (when does a specific metric violate a given threshold?)	☐	☐	☐	☐	☐

19. Do you have any specific thresholds for your metrics you use to define the health of a project? If yes, how have you determined the concrete values for your thresholds?

Please choose a possible answer for how you got your threshold values

Markieren Sie nur ein Oval.

- ( ) From personal experience
- ( ) From literature
- ( ) Suggested values from analysis tools like SonarQube
- ( ) I don't use any metric thresholds
- ( ) Sonstiges: _____