Task 1: Investigating Source Code Files and Expert Recommendations Feature

Use GitHub to identify experts for a file on Any23 project:

1. Visit the following link to access the source code file: Any23.java on GitHub
2. Use your preferred method to identify expert(s) on this file

* Zorunlu soruyu belirtir

1. E-posta *

Use SAA to identify experts for the same file:
Open the SAA by using the file path as a query parameter *(http://saa.cs.bilkent.edu.tr/?name={file_path}):*
URL: http://saa.cs.bilkent.edu.tr/?name=core/src/main/java/org/apache/any23/Any23.java

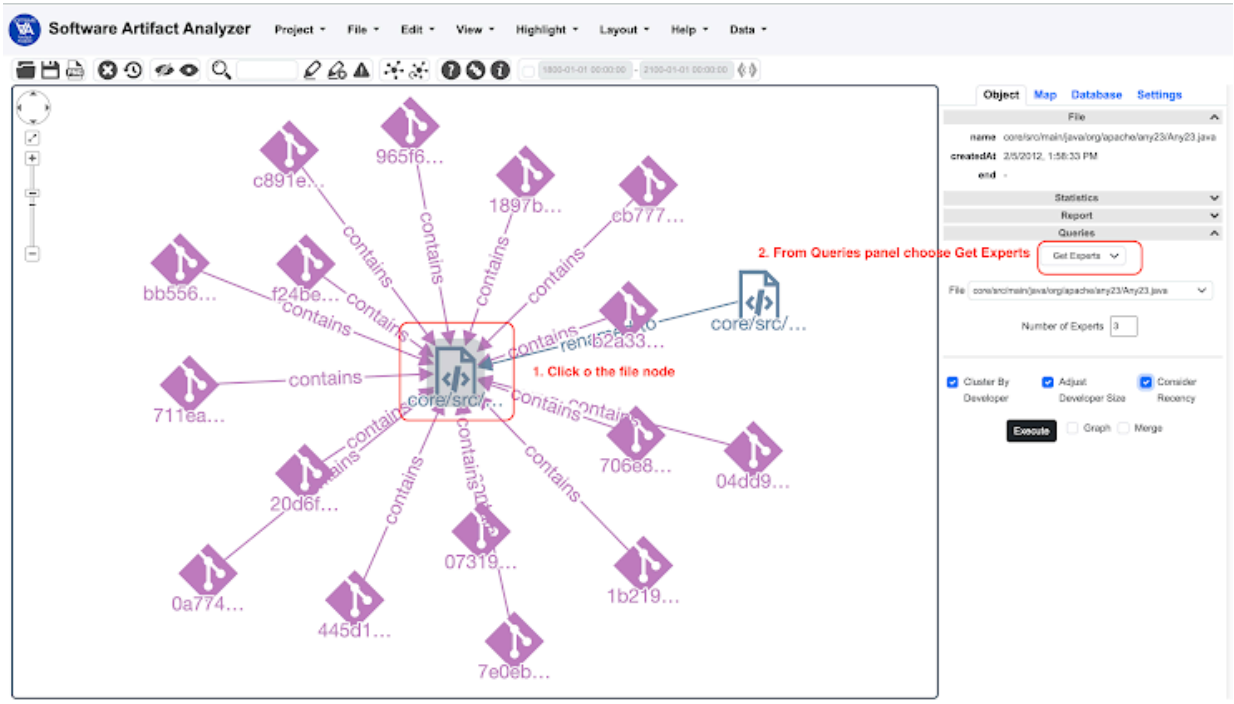
Alternatively, navigate to the **Map** tab and construct a query by rule under **Query by Rule**.

Then:
- click on the **file** in the graph to inspect it,
- navigate to **Object > Queries > Get Experts**,
- check desired options and **Execute** to get the recommendation**s.**

Try this with both **Recency** option checked and unchecked to see how weighting recent contributions more makes a difference in results.

Compare the contributors identified through Git Blame and Git Contributions in associated GitHub page with the expert recommendations obtained from SAA.

Now answer the following.



2. 1. Who would you select as the expert for the source code file "Any23.java"? Please choose **two** developers.

Uygun olanların tümünü işaretleyin.

- [ ] Hans Brende (HansBrende)
- [ ] Lewis John McGibbney (lewismc)
- [ ] Michele Mostarda(michelemostarda)
- [ ] Peter Ansell (ansell)

3. 2. From your experience with analyzing the source code file "Any23.java" using your method and considering the expert recommendations from SAA, **which source offers more relatable and sensible results** in terms of identifying contributors or expertise related to the file?

Yalnızca bir şıkkı işaretleyin.

- ◯ Git Blame
- ◯ Git Contributors
- ◯ Expert Recommendations from SAA (with recency)
- ◯ Expert Recommendations fromSAA (without recency)
- ◯ None of them / Other / Undecided

4. 3. If you consider the results obtained from the expert **recommendations in SAA as less relatable**, what do you think could be the possible reasons for your doubts?

Uygun olanların tümünü işaretleyin.

- [ ] Lack of explanation (not adequately explained or transparent)
- [ ] Limited context (not consider the broader context of the project)
- [ ] Bias or limitations (potential biases in the analysis process or limitations in capabilities)
- [ ] Complexity (too complex or difficult to understand underlying methodology)
- [ ] Limited or inaccurate data used for analysis
- [ ] Diğer: _____

5. 4. If you consider the results obtained from **Git Blame as less relatable**, what do you think could be the possible reasons for your doubts? Please select all that apply:

Uygun olanların tümünü işaretleyin.

- [ ] Lack of explanation (not adequately explained or transparent)
- [ ] Limited context (not consider the broader context of the project)
- [ ] Bias or limitations (potential biases in the analysis process or limitations in capabilities)
- [ ] Complexity (too complex or difficult to understand underlying methodology)
- [ ] Limited or inaccurate data used for analysis
- [ ] Diğer: _____

6. 5. On a scale of 1 to 5, to what extent do you believe that **visualizing results with software artifact traceability graphs** helps you comprehend the results more effectively?

Yalnızca bir şıkkı işaretleyin.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Very much so

7. 6. On a scale of 1 to 5, to what extent do you believe that **visual cues** such as node clustering and badges that align with the analysis findings make the results more relatable and understandable?

Yalnızca bir şıkkı işaretleyin.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Very much so

8. 7. Is using SAA easier or harder compared to your usual method for finding reviewers?

   Yalnızca bir şıkkı işaretleyin.

   - ◯ Much harder
   - ◯ Harder
   - ◯ Same effort
   - ◯ Easier
   - ◯ Much easier

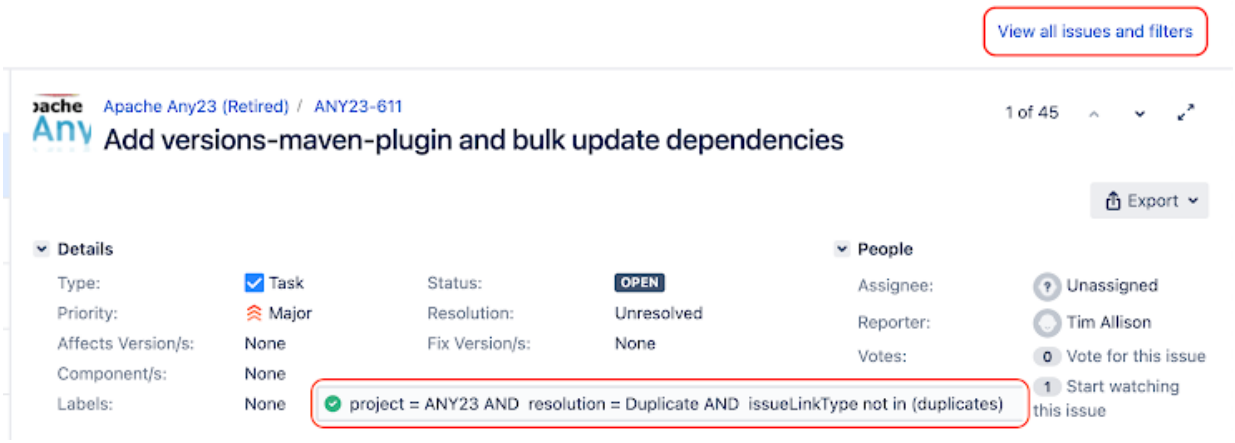
Task 2: Bug Process Anomaly Detection

SAA enables users to detect **11 type of process smells/anomalies**, list of anomalies given below as discussed in the presentation.

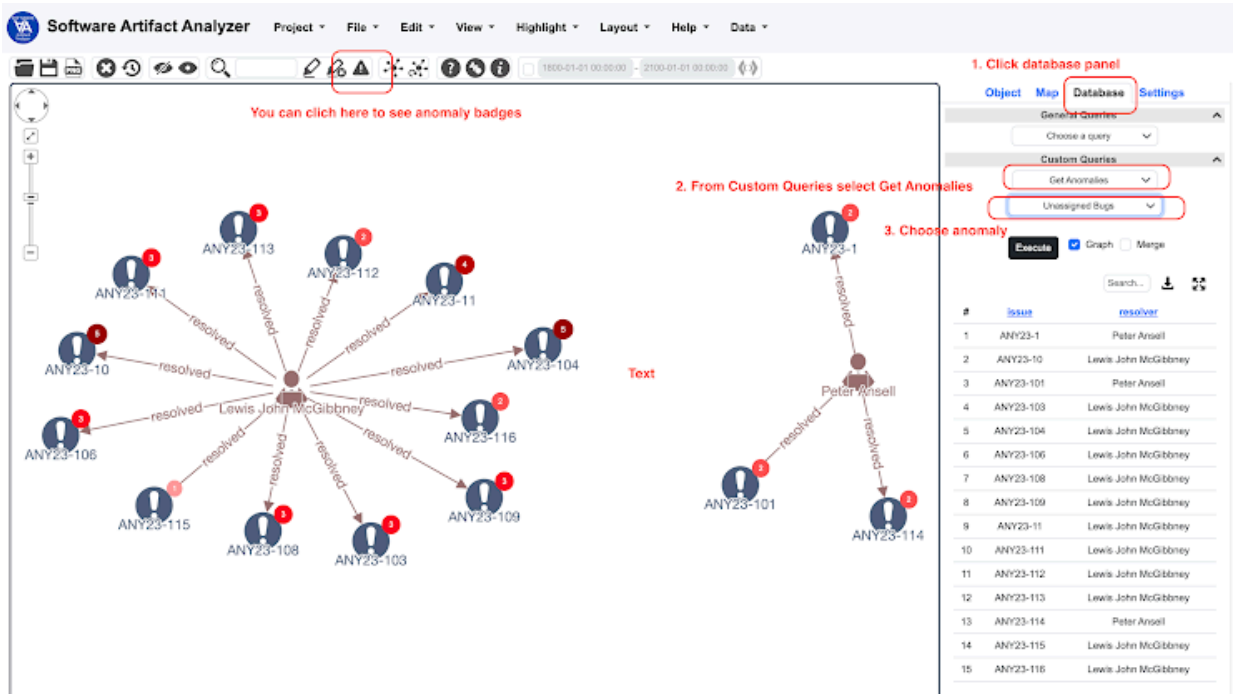
1. Unassigned Bugs
2. No Link to Bug-Fixing Commit
3. Ignored Bugs
4. Missing Priority
5. Not Referenced Duplicates
6. Missing Environment Information
7. Reassignment of Bug Assignee
8. No Comment Bugs
9. Non-Assignee Resolver of Bug
10. Closed-Reopen Ping Pong
11. Same Resolver Closer

Click here to access an ANY23 Jira issue instance, then perform the following exercises.

9. 8. Now use **Jira** to detect issues in project Any23 having the anomaly of type "**Not referenced duplicates**"? Enter the number of issues that you found.
   ***Tip**: You may write JQL scripts or use other tools to achieve this (View All Issues and Filters > Advanced).*



10. 9. Now use **SAA** to detect issues in project ANY23 having the anomaly of type "**Not referenced duplicates**"? Enter the number of issues that you found.



11. 10. Now use **Jira** to detect issues in project ANY23 having the anomaly of type "**Unassigned Bugs**"? Enter the number of issues that you found. *
***Tip**: You may write JQL scripts or use other tools to achieve this.*

12. 11. Now use **SAA** to detect issues in project ANY23 having the anomaly type of "**Unassigned Bugs**"? Enter the number of issues that you found. *

13. 12. Now use **Jira** to detect issues in project ANY23 having the anomaly type of "**Non-Assignee Resolver Bug**"? Enter the number of issues that you found. *
***Tip**: You may write JQL scripts or use other tools to achieve this.*

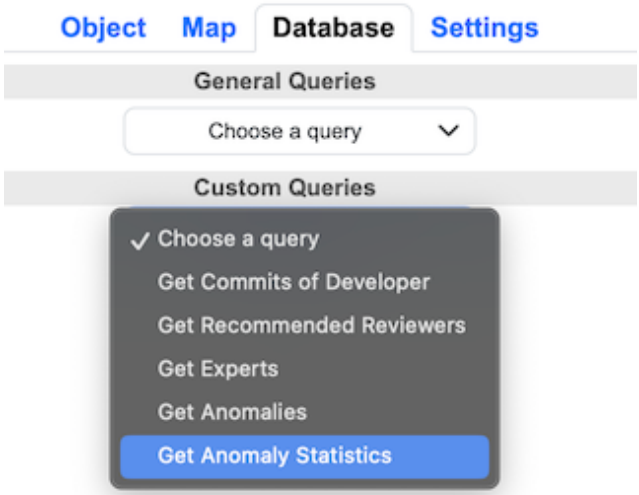
14. 13. Now use **SAA** to detect issues in project ANY23 having the anomaly of type "**Non-Assignee Resolver of Bug**" ? Enter the number of issues that you found. *

15. 14. How was your experience in detecting various types of anomalies with **Jira vs SAA**?

Yalnızca bir şıkkı işaretleyin.

- Jira was a lot more useful in finding such anomalies than SAA.
- Jira was somewhat more useful in finding such anomalies than SAA.
- The experience was about the same both ways.
- SAA was somewhat more useful in finding such anomalies than Jira.
- SAA was a lot more useful in finding such anomalies than Jira.

16. 15. Now find issues with a specific number of anomalies from the anomalies statistics section in SAA.
- Click on the **Database** tab on the right,
- Choose **Get Anomaly Statistics** under **Custom Queries**
Then, visit the issues bug report from Atlassian Jira? You can access it from the issue object panel. How many anomalies can you detect manually by inspecting the issue panel?



Yalnızca bir şıkkı işaretleyin.

- ( ) None
- ( ) Some of them
- ( ) Many of them
- ( ) Most of them
- ( ) All of them

17. 16. Is using SAA easier or harder compared to your usual method for detecting anomalies in your project's bug tracking process (if you have one)? *

Yalnızca bir şıkkı işaretleyin.

- [ ] Much harder
- [ ] Harder
- [ ] Same effort
- [ ] Easier
- [ ] Much easier
- [ ] I do not use any methods/tools to detect bug process anomalies