Feedback on our visualisation tools

In the context of our research on context-oriented programming, we have developed a feature-based context-oriented software development approach to help software designers and programmers conceive and prototype feature-based context-oriented systems.

Throughout this semester you are asked to play the role of potential designers and programmers using a proposed approach and methodology to develop feature-based context-oriented systems. Through surveys such as this and oral interviews, we will evaluate the strengths and weaknesses of the proposed approach and methodology.

We would like to stress the fact that all work performed in the context of this scientific study will be completely anonymous, in other words we will not know the exact names of who responded what to the different surveys. Because of this we ask you to be as complete and precise as possible when responding to open questions, since we won't be able to contact you for clarifying your responses. This scientific study is part of our ongoing research and will not be taken into account for your course grade. Each question will be asked in English but feel free to respond in French or English according to the language you feel most comfortable with to provide precise answers. You are expected to respond to the current survey by group. Your group is the same as your Moodle group. Use the same unique identifier for your group as you used to complete the previous surveys. This allows us to compare the different surveys of your group and how you learned throughout the study, while still respecting your anonymity.

The current survey aims to gather your feelings on our visualisation tools to assess their usefulness and understandability. For each visualisation tool, you will first have to answer ten questions based on a Likert scale to assess the usability of the visualisation tool according to the "System Usability Scale (SUS)". Then we will ask you some detailed questions about the visualisation tool. Then you will have to answer some remaining questions on the interest of using such tools in our approach.

This form must be filled out by 22nd December 2020, at 11:55 pm.
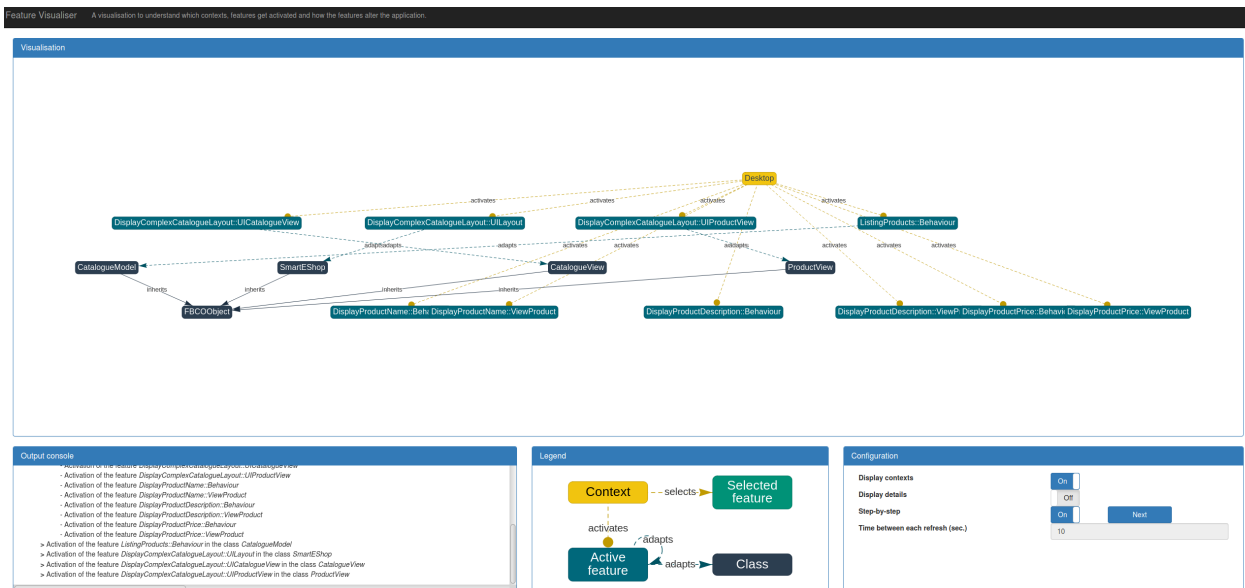*Obligatoire

Anonymous identifier

1. Provide us your anonymous identifier *

   As a reminder, this anonymous identifier allows us to link your responses to the different surveys, while guaranteeing your anonymity. So it is really important that you use the same anonymous identifier during the entire semester!

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Feedback on the Feature Visualiser tool (System Usability Scale)

As a reminder, the Feature Visualiser tool is the following visualisation tool. It allows the developer to inspect which contexts are activated, which features are triggered by which contexts and how the classes of the system are adapted by the activated features.

2. (SUS 1) We think that we would like to use this visualisation tool frequently when developing feature-based context-oriented systems. *

   Une seule réponse possible.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

3. (SUS 2) We found the visualisation tool unnecessarily complex. *

   Une seule réponse possible.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

4. (SUS 3) We thought the visualisation tool was easy to use. *

Une seule réponse possible.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

5. (SUS 4) We think that we would need the support of a technical person to be able to use this visualisation tool. *

Une seule réponse possible.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

6. (SUS 5) We found the various functions in this visualisation tool were well integrated. *

Une seule réponse possible.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

7. (SUS 6) We thought there was too much inconsistency in this visualisation tool. *

Une seule réponse possible.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

8. (SUS 7) We would imagine that most people would learn to use this visualisation tool very quickly. *

Une seule réponse possible.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

9. (SUS 8) We found the visualisation tool very cumbersome to use. *

Une seule réponse possible.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

10. (SUS 9) We felt very confident using the visualisation tool. *

Une seule réponse possible.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

11. (SUS 10) We needed to learn a lot of things before we could get going with this visualisation tool. *

Une seule réponse possible.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

Feedback on the Feature Visualiser tool (Some more detailed questions)

Below you can find more detailed questions about this same visualisation tool.

12. Is the dynamic representation of the activated entities (contexts, features, …) in the visualisation tool understandable? *

Une seule réponse possible.

	1	2	3	4	5	
Incomprehensible	◯	◯	◯	◯	◯	Easy to understand

13. Is the control flow of the architecture of our programming approach clear in this visualisation? *

Une seule réponse possible.

	1	2	3	4	5	
Not clear at all	◯	◯	◯	◯	◯	Totally clear

14. Can this visualisation tool help you to better understand a program developed using this programming approach? *

Une seule réponse possible.

	1	2	3	4	5	
Not at all	◯	◯	◯	◯	◯	Absolutely

15. Explain how/why this visualisation can/cannot help you to better understand a program developed using this programming approach. (Optional)

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16. Can this visualisation tool help you to better debug such a program? *

    Une seule réponse possible.

	1	2	3	4	5	
Not at all	◯	◯	◯	◯	◯	Absolutely

17. Explain how/why this visualisation can/cannot help you to debug such a program. (Optional)

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18. Mention some positive aspects of this proposed visualisation tool. *

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19. Mention some less interesting aspects of this proposed visualisation tool. *

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20. Do you have any further suggestions regarding how to improve the proposed visualisation tool to make it easier to unerstand/develop/debug feature-based context-oriented systems? (Optional)

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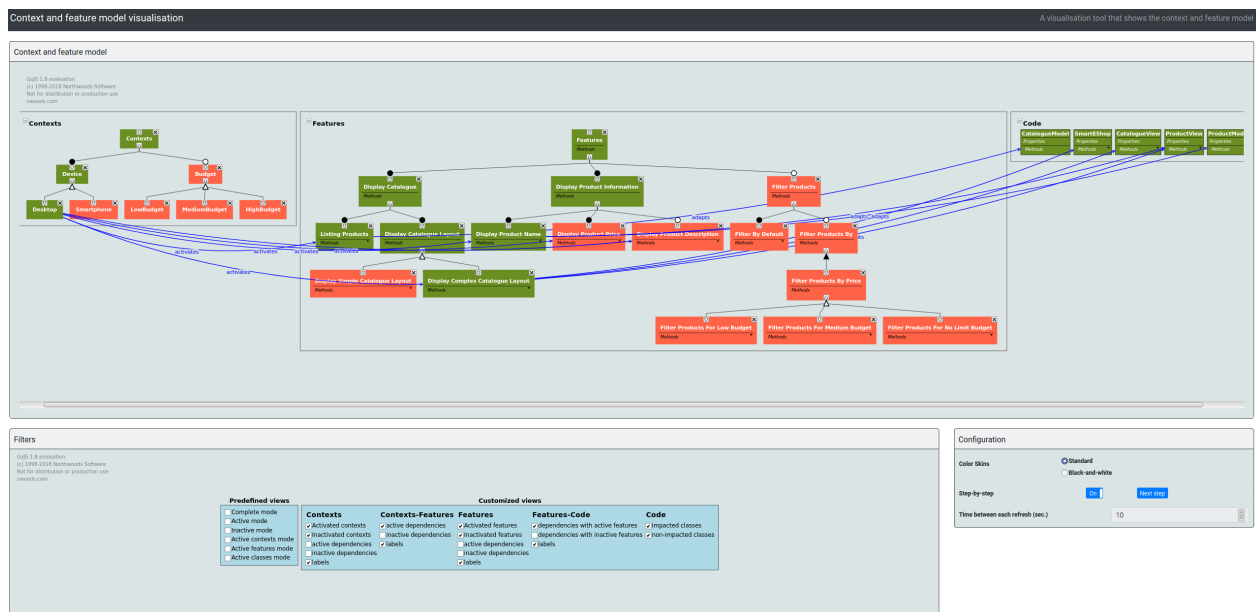_____

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Feedback on the Context and Feature Model Visualiser tool (System Usability Scale)

As a reminder, the Context and Feature Model Visualiser tool is the following visualisation tool. It allows the developer to have a complete overview (i.e. the active and unactive entities) of the feature-based context-oriented system. It displays the context and feature model as well as the mapping model between them, and also shows which classes of the system are/have to be adapted by which features.

21. (SUS 1) We think that we would like to use this visualisation tool frequently when developing feature-based context-oriented systems. *

    Une seule réponse possible.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

22. (SUS 2) We found the visualisation tool unnecessarily complex. *

    Une seule réponse possible.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

23. (SUS 3) We thought the visualisation tool was easy to use. *

    Une seule réponse possible.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

24. (SUS 4) We think that we would need the support of a technical person to be able to use this visualisation tool. *

    Une seule réponse possible.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

25. (SUS 5) We found the various functions in this visualisation tool were well integrated. *

Une seule réponse possible.

	1	2	3	4	5	
Strongly disagree	○	○	○	○	○	Strongly agree

26. (SUS 6) We thought there was too much inconsistency in this visualisation tool. *

Une seule réponse possible.

	1	2	3	4	5	
Strongly disagree	○	○	○	○	○	Strongly agree

27. (SUS 7) We would imagine that most people would learn to use this visualisation tool very quickly. *

Une seule réponse possible.

	1	2	3	4	5	
Strongly disagree	○	○	○	○	○	Strongly agree

28. (SUS 8) We found the visualisation tool very cumbersome to use. *

Une seule réponse possible.

	1	2	3	4	5	
Strongly disagree	○	○	○	○	○	Strongly agree

29. (SUS 9) We felt very confident using the visualisation tool. *

    Une seule réponse possible.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

30. (SUS 10) We needed to learn a lot of things before we could get going with this visualisation tool. *

    Une seule réponse possible.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

Feedback on the Context and Feature Model Visualiser tool (Some more detailed questions)

Below you can find more detailed questions about this same visualisation tool.

31. Is the *static* representation of the models (context model, feature model, ...) in this visualisation tool understandable? *

    Une seule réponse possible.

	1	2	3	4	5	
Hard to understand	◯	◯	◯	◯	◯	Easy to understand

32. Is the *dynamic* representation of the models (context model, feature model, ...) in this visualisation tool understandable? *

    Une seule réponse possible.

	1	2	3	4	5	
Hard to understand	◯	◯	◯	◯	◯	Easy to understand

33. Do you think this visualization tool is more interesting with regard to its static or its dynamic visualisation aspects? *

Une seule réponse possible.

	1	2	3	4	5	
Static	◯	◯	◯	◯	◯	Dynamic

34. Does such a visualisation tool help you to better understand such an approach when you develop feature-based context-oriented programs? *

Une seule réponse possible.

	1	2	3	4	5	
Not at all	◯	◯	◯	◯	◯	Absolutely

35. Explain how/why you think this visualisation tool helps you to better understand or not such an approach when you develop feature-based context-oriented systems. (Optional)

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36. Mention some positive aspects of this proposed visualisation tool. *

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37. Mention some less interesting aspects of this proposed visualisation tool. *

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38. Do you have any further suggestions regarding how to improve the proposed visualisation tool to make it easier to unerstand/develop/debug feature-based context-oriented systems? (Optional)

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Collecting some more information

39. After using our visualisation tools, how complementary do you think that these two visualisation tools are? *

Une seule réponse possible.

	1	2	3	4	5	
Not complementary at all	◯	◯	◯	◯	◯	Totally complementary

40. Explain how/why you think both visualisation tools are complementary or not? (Optional)

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41. Do you think in general that such visualisation tools can help you to better understand our feature-based context-oriented approach? *

    Une seule réponse possible.

	1	2	3	4	5	
Not at all	◯	◯	◯	◯	◯	Absolutely

42. Assume we gave you these visualisation tools at the beginning of your development stage, how would you have assessed the complexity of their use? *

    Une seule réponse possible.

	1	2	3	4	5	
Really complex	◯	◯	◯	◯	◯	Really easy

43. Assume we gave you these visualisation tools at the beginning of your development stage, do you think you would have understood better our underlying architecture and approach? *

    Une seule réponse possible.

	1	2	3	4	5	
Not at all	◯	◯	◯	◯	◯	Absolutely

44. If we would conduct a similar experiment in the future, do you think we should provide these visualisation tools earlier on? Explain why.

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