

# Assessment of our feature-based context-oriented software development

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

Throughout this semester you played the role of potential designers and programmers using our approach to develop feature-based context-oriented systems. Through several surveys, we will evaluate the strengths and weaknesses of our approach.

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.

In this survey, we will ask you to assess our feature-based context-oriented software development approach. We ask you first to assess the supporting development methodology we used through all the semester, then we ask you to evaluate the proposed programming framework and suggested user interface library. For this survey we ask you to fill in by group. Your group is the same as your Moodle group.

This form must be filled by 31th December 2021.

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**\*Obligatoire**

## Feature-based context-oriented development methodology

1. In your role of context-oriented designers, did the proposed development methodology help you to better elicit the contexts and features of your context-oriented application? \*

*Une seule réponse possible.*

	1	2	3	4	
Not at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Absolutely

2. Did describing the rationale of the non-trivial contexts and non-trivial features help you to decide whether the contexts and features of your context-oriented system are relevant? \*

*Une seule réponse possible.*

	1	2	3	4	
Not at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Absolutely

3. In your role of context-oriented designers, did the proposed development methodology help you to better structure the contexts and features of your context-oriented system? In other words, did it help you to better elaborate and organise your context and feature model? \*

*Une seule réponse possible.*

	1	2	3	4	
Not at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Absolutely

4. In your role of context-oriented designers, did the proposed development methodology help you to define the mapping from contexts to features, in other words what contexts trigger the activation or deactivation of what features? \*

*Une seule réponse possible.*

	1	2	3	4	
Not all all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Absolutely

5. How do you assess the complexity of using this development methodology to design context-oriented systems? (As opposed to not having use such a development methodology) \*

*Une seule réponse possible.*

	1	2	3	4	
Very complex	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very easy

6. Can you mention one or more positive aspects of this proposed development methodology? (What did you like? How did it help you?) \*

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7. Can you mention one or more less interesting aspects of this development methodology? \*

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8. Do you have any further suggestions regarding how to improve the proposed methodology?

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## Feature-based context-oriented programming framework

9. How do you assess the expressiveness of the proposed programming framework to declare the context and feature model? \*

*Une seule réponse possible.*

	1	2	3	4	
Not expressive at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very expressive

10. In a few lines, justify your previous answer by explaining what you liked or not and what aspects can be enhanced. \*

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11. How do you assess the expressiveness of the proposed programming language in the declaration of the mapping model? \*

*Une seule réponse possible.*

	1	2	3	4	
Not expressive at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very expressive

12. In a few lines, justify your previous answer by explaining what you liked or not and what aspects can be enhanced. \*

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13. How do you evaluate the overall complexity of implementing feature definitions? \*

*Une seule réponse possible.*

	1	2	3	4	
Very complex	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very easy

14. What aspects of defining features did you consider easy? Explain. \*

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15. What aspects of defining features did you find complex? Explain. \*

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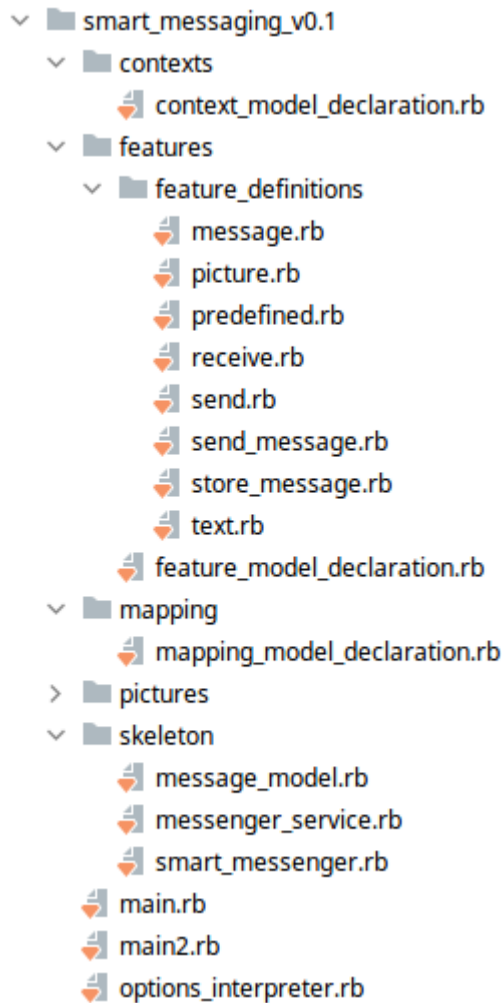
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16. How do you assess the complexity of the imposed files structure of feature-based context-oriented applications? An example of the files structure of a smart messaging system is shown below. \*



*Une seule réponse possible.*

	1	2	3	4	
Very complex	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very easy

17. Explain your previous answer. What did you like or not? Do you have some suggestions to improve it? \*

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18. In hindsight, now that you have implemented a first feature-based context-oriented application, how do you assess the overall complexity of the programming framework? \*

*Une seule réponse possible.*

	1	2	3	4	
Very complex	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very easy

19. Explain your previous answer. \*

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20. Can you mention one or more positive aspects of this proposed programming framework? \*

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21. Can you mention one or more less interesting aspects of this programming framework? \*

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22. Do you think the proposed programming framework helps you in tackling the intrinsic complexity of building of feature-based context-oriented applications while avoiding accidental complexity? (Intrinsic complexity refers to the natural complexity of creating feature-based context-oriented applications while accidental complexity is that added by developers in the programming framework to implement such applications.) \*

*Une seule réponse possible.*

	1	2	3	4	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

23. Explain your previous answer. \*

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24. Do you have any further suggestions regarding how to improve the proposed programming framework?

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### User interface adaptation

Developing context-aware applications without considering the user interface aspect or the core logic aspect is less interesting for programmers since they will not be able to create such real applications.  
Therefore we propose an abstraction of a user interface library in our applicative framework that programmers can use to build and adapt the user interfaces of their applications.  
In the following questions we survey our own implementation that relies on the FXRuby graphical user interface, but we do not want to assess FXRuby.



25. Did you think that the user interface library is sufficiently usable and easy to use? Explain. \*

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26. Do you think that the API (Application Programming Interface) of the proposed user interface library is sufficiently complete? \*

*Une seule réponse possible.*

	1	2	3	4	
Totally incomplete	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Totally complete

27. If you found that the API is not complete, which functions is(are) missing?

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28. Can you mention one or more positive aspects of this proposed user interface library? \*

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29. Can you mention one or more less interesting aspects of this user interface library? \*

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30. Do you have any further suggestions regarding how to improve the proposed user interface library?

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Visualisation tools



33. Can you explain a situation where you used the Context Feature Model Visualiser tool?

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34. Do you have any further suggestions regarding how to improve the proposed visualisation tools? Or can you think of other visualisation tools that could be helpful?

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