

EICS2019

In the context of our research on context-oriented programming, we study an approach that tries to reconcile the notions of contexts and features for building context-aware software systems. In this approach both contexts and features are modeled and implemented according to a feature-modelling approach. To help developers understand, create and debug context-aware applications with our feature-oriented context-aware programming approach, we created a visualization tool that shows, at run-time, the context and feature models, their interactions, and indicates which contexts and features are currently active.

In this experiment, you are asked to play the role of potential programmers using our feature-oriented context-aware programming approach, in order to evaluate the usefulness and understandability of this particular visualization tool.

We would like to stress the fact that this survey will be completely anonymous, in other words we don't know the exact names of who responded what to this survey. Because of this we ask you to be as complete and precise as possible when responding to open questions. This experiment is part of an ongoing research and will not be taken into account for your grade of this course. 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.

For this experiment, the students will be split in two groups (A and B) and will have to conduct two tasks during this study. All students will have to conduct these two different tasks (task 1 and 2) but not in the same order. Subgroup A will start by task 1 first and then continue with task 2. Subgroup B will start by task 2 first and then continue with task 1. For the first task which you have to execute, you are **not** allowed to use the visualization tool. After task 1, you will have to respond to a series of questions. Then, we will present you the visualization tool and ask you to respond to the same questions. Once finished, you start on the second task (task 2 for subgroup A and task 1 for subgroup B) but now you **must** use the visualization tool. After that again you will get a series of questions regarding that task. The main purpose of this experiment is to find out whether the visualization tool helps you in completing such tasks more easily or not. Finally, there will be some overall questions regarding your perception on the usefulness of such a visualization tool and our feature-oriented context-aware programming approach.

This experience was carried out at the Université catholique de Louvain, on 19 December 2018 from 08.30 until 10:30.

Case study

The case study for this experiment is a Risk Information System. This system informs when an emergency occurs and provides specific instructions to citizens about how to act before, during or after such an emergency. It also allows a citizen to consult instructions regarding a particular kind of risk, even if no emergency is currently occurring. The illustrative example shown during the previous session focused on earthquakes. Now we will extend the application for another kind of risk/emergency: floods. The instructions for this new risk or emergency differ from those for an earthquake. In addition, floods have another type of severity and impacted zone. Floods can have a severity within the range: low, medium or high. As opposed to an earthquake, the impacted zone of a flood is not circular but polygonal (delimiting the perimeter that is flooded).

The two tasks for this case study are the following:

- 1) For the task 1, we ask you to implement the characteristics (severity + impacted zone) of a flood emergency.
- 2) For the task 2, you are asked to implement flood-specific instructions. These instructions must be available even when no flood is currently occurring.

Now that we have introduced the case study and both tasks, we provide further instructions on the process of our experiment. Please respect with precision the different steps of the process, in order to be able to answer our questions appropriately.

Participant's background knowledge

1. What is your current age?

2. To which group have you been assigned for this study?

Une seule réponse possible.

☐ Group A

☐ Group B

3. What is your level of expertise in feature modelling?

Une seule réponse possible.

	1	2	3	4	5	
No expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Expert

4. What is your general programming expertise?

Une seule réponse possible.

	1	2	3	4	5	
No expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Expert

5. What is your programming level expertise in object-oriented programming (regardless of your preferred OO language: Java, Python, Ruby, C++, Smalltalk, ...)?

Une seule réponse possible.

	1	2	3	4	5	
No expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Expert

6. What is your level of expertise in the Ruby programming language?

Une seule réponse possible.

	1	2	3	4	5	
No expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Expert

7. What is your level of comprehension of the context-oriented programming paradigm?

Une seule réponse possible.

	1	2	3	4	5	
No expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Expert

8. What is your level of comprehension of our feature-oriented context-aware programming approach?

Une seule réponse possible.

	1	2	3	4	5	
No expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Expert

A first
task to
develop

Now we ask you to perform the first task that was assigned to you depending on your group ID. The tasks were explained previously in the case study section. Students assigned to group A will start by task 1 first and those in group B will start by task 2. For this initial task you are not allowed to use the visualization tool.

After having completed this task, please answer the following questions.

9. Which task did you achieve ?

Une seule réponse possible.

- ☐ Task 1 (dedicated for students of the group A) *Passer à la question 12*
- ☐ Task 2 (dedicated for students of the group B) *Passer à la question 18*

10. Did you manage to finish the task in the allotted time (max. 25 minutes)?

Une seule réponse possible.

- ☐ Yes
- ☐ No

11. How much time did you take to finish this task (max. 25 minutes)?

Testing
your
first
task
(only

If you're not in group A, you didn't answer correctly to the previous question ("Which task did you achieve?" in the previous set of questions). In that case, return to the previous page to select the correct achieved task.

It is possible that the names of the contexts or features listed below differ from the names you have chosen in your implementation. However, we tried to provide names that are as explicit as possible so that you know what features and contexts they represent.

group

A)

12. Assume a citizen wants to consult instructions about an earthquake risk (when no earthquake is currently occurring), can you tell us which context(s) is(are) active at that moment?

Plusieurs réponses possibles.

☐ Default Context

☐ Type

☐ Mode

☐ Earthquake

☐ Flood

☐ Active Emergency

☐ Passive Risk

☐ Before Emergency

☐ During Emergency

☐ After Emergency

☐ Before Risk

☐ During Risk

☐ After Risk

13. When the government announces the occurrence of a flood, it will inform the citizens about its characteristics (i.e. its severity and impacted zone). Can you indicate which feature(s) will be *selected* thanks to the context-feature mapping?

Plusieurs réponses possibles.

- ☐ Default Feature
- ☐ Inform
- ☐ Instruct
- ☐ DisplaySeverity
- ☐ ShowImpactedZone
- ☐ EarthquakeInstruct
- ☐ FloodInstruct
- ☐ Standard
- ☐ Richter
- ☐ PolygonImpactedZone
- ☐ CircleImpactedZone
- ☐ EarthquakeEmergencyInstruct
- ☐ EarthquakeRiskInstruct
- ☐ FloodEmergencyInstruct
- ☐ FloodRiskInstruct
- ☐ EarthquakeEmergencyBeforeInstruct
- ☐ EarthquakeEmergencyDuringInstruct
- ☐ EarthquakeEmergencyAfterInstruct
- ☐ EarthquakeRiskBeforeInstruct
- ☐ EarthquakeRiskDuringInstruct
- ☐ EarthquakeRiskAfterInstruct
- ☐ FloodEmergencyBeforeInstruct
- ☐ FloodEmergencyDuringInstruct
- ☐ FloodEmergencyAfterInstruct
- ☐ FloodRiskBeforeInstruct
- ☐ FloodRiskDuringInstruct
- ☐ FloodRiskAfterInstruct

14. When a citizen launches the application, it detects that a new flood is active and receives information about this flood. This information describes that the severity is medium and its impacted zone is near the river. The system informs the citizen about the characteristics of the flood. Can you indicate **all** features in the feature diagram that are currently active?

Plusieurs réponses possibles.

- ☐ Default Feature
- ☐ Inform
- ☐ Instruct
- ☐ DisplaySeverity
- ☐ ShowImpactedZone
- ☐ EarthquakeInstruct
- ☐ FloodInstruct
- ☐ Standard
- ☐ Richter
- ☐ PolygonImpactedZone
- ☐ CircleImpactedZone
- ☐ EarthquakeEmergencyInstruct
- ☐ EarthquakeRiskInstruct
- ☐ FloodEmergencyInstruct
- ☐ FloodRiskInstruct
- ☐ EarthquakeEmergencyBeforeInstruct
- ☐ EarthquakeEmergencyDuringInstruct
- ☐ EarthquakeEmergencyAfterInstruct
- ☐ EarthquakeRiskBeforeInstruct
- ☐ EarthquakeRiskDuringInstruct
- ☐ EarthquakeRiskAfterInstruct
- ☐ FloodEmergencyBeforeInstruct
- ☐ FloodEmergencyDuringInstruct
- ☐ FloodEmergencyAfterInstruct
- ☐ FloodRiskBeforeInstruct
- ☐ FloodRiskDuringInstruct
- ☐ FloodRiskAfterInstruct

Passer à la question 15

Usage of
the
visualization

If you're not in group A, you didn't answer correctly to the previous question ("Which task did you achieve?" in the previous set of questions). In that case, return to the page "A first task to develop" to select the correct achieved task.

Now, you can use the visualisation tool to visualize what happens to answer the same set of questions as before. The instructions on how you must launch the visualisation tool are described in the provided instructions report. Use this tool to be able to answer correctly to the questions and verify if their previous

tool for
your first
task (only
group A)

answers are correct. Play the game and don't modify your previous answers.

It is possible that the names of the contexts or features listed below differ from the names you have chosen in your implementation. However, we tried to provide names that are as explicit as possible so that you know what features and contexts they represent.

15. Assume a citizen wants to consult instructions about an earthquake risk (when no earthquake is currently occurring), can you tell us which context(s) is(are) active?

Plusieurs réponses possibles.

- ☐ Default Context
- ☐ Type
- ☐ Mode
- ☐ Earthquake
- ☐ Flood
- ☐ Active Emergency
- ☐ Passive Risk
- ☐ Before Emergency
- ☐ During Emergency
- ☐ After Emergency
- ☐ Before Risk
- ☐ During Risk
- ☐ After Risk

16. When the government announces the occurrence of a flood, it will inform the citizens about its characteristics (i.e. its severity and impacted zone). Can you indicate which feature(s) will be *selected* thanks to the context-feature mapping?

Plusieurs réponses possibles.

- ☐ Default Feature
- ☐ Inform
- ☐ Instruct
- ☐ DisplaySeverity
- ☐ ShowImpactedZone
- ☐ EarthquakeInstruct
- ☐ FloodInstruct
- ☐ Standard
- ☐ Richter
- ☐ PolygonImpactedZone
- ☐ CircleImpactedZone
- ☐ EarthquakeEmergencyInstruct
- ☐ EarthquakeRiskInstruct
- ☐ FloodEmergencyInstruct
- ☐ FloodRiskInstruct
- ☐ EarthquakeEmergencyBeforeInstruct
- ☐ EarthquakeEmergencyDuringInstruct
- ☐ EarthquakeEmergencyAfterInstruct
- ☐ EarthquakeRiskBeforeInstruct
- ☐ EarthquakeRiskDuringInstruct
- ☐ EarthquakeRiskAfterInstruct
- ☐ FloodEmergencyBeforeInstruct
- ☐ FloodEmergencyDuringInstruct
- ☐ FloodEmergencyAfterInstruct
- ☐ FloodRiskBeforeInstruct
- ☐ FloodRiskDuringInstruct
- ☐ FloodRiskAfterInstruct

17. When a citizen launches the application, it detects that a new flood is active and receives information about this flood. This information describes that the severity is medium and its impacted zone is near the river. The system informs the citizen about the characteristics of the flood. Can you indicate **all** features in the feature diagram that are currently active?

Plusieurs réponses possibles.

- ☐ Default Feature
- ☐ Inform
- ☐ Instruct
- ☐ DisplaySeverity
- ☐ ShowImpactedZone
- ☐ EarthquakeInstruct
- ☐ FloodInstruct
- ☐ Standard
- ☐ Richter
- ☐ PolygonImpactedZone
- ☐ CircleImpactedZone
- ☐ EarthquakeEmergencyInstruct
- ☐ EarthquakeRiskInstruct
- ☐ FloodEmergencyInstruct
- ☐ FloodRiskInstruct
- ☐ EarthquakeEmergencyBeforeInstruct
- ☐ EarthquakeEmergencyDuringInstruct
- ☐ EarthquakeEmergencyAfterInstruct
- ☐ EarthquakeRiskBeforeInstruct
- ☐ EarthquakeRiskDuringInstruct
- ☐ EarthquakeRiskAfterInstruct
- ☐ FloodEmergencyBeforeInstruct
- ☐ FloodEmergencyDuringInstruct
- ☐ FloodEmergencyAfterInstruct
- ☐ FloodRiskBeforeInstruct
- ☐ FloodRiskDuringInstruct
- ☐ FloodRiskAfterInstruct

Passer à la question 24

Testing
your
first
task
(only

If you're not in group B, you didn't answer correctly to the previous question ("Which task did you achieve?" in the previous set of questions). In that case, return to the previous page to select the correct achieved task.

It is possible that the names of the contexts or features listed below differ from the names you have chosen in your implementation. However, we tried to provide names that are as explicit as possible so that you know what features and contexts they represent.

group

B)

18. Assume a citizen wants to consult instructions about an earthquake risk (when no earthquake is currently occurring), can you tell us which context(s) is(are) active?

Plusieurs réponses possibles.

- ☐ Default Context
- ☐ Type
- ☐ Mode
- ☐ Earthquake
- ☐ Flood
- ☐ Active Emergency
- ☐ Passive Risk
- ☐ Before Emergency
- ☐ During Emergency
- ☐ After Emergency
- ☐ Before Risk
- ☐ During Risk
- ☐ After Risk

19. Considering that the government detects a new flood, it will provide the citizens which instructions they must act during a flood. Can you indicate which feature(s) will be *selected* thanks to the context-feature mapping?

Plusieurs réponses possibles.

- ☐ Default Feature
- ☐ Inform
- ☐ Instruct
- ☐ DisplaySeverity
- ☐ ShowImpactedZone
- ☐ EarthquakeInstruct
- ☐ FloodInstruct
- ☐ Standard
- ☐ Richter
- ☐ PolygonImpactedZone
- ☐ CircleImpactedZone
- ☐ EarthquakeEmergencyInstruct
- ☐ EarthquakeRiskInstruct
- ☐ FloodEmergencyInstruct
- ☐ FloodRiskInstruct
- ☐ EarthquakeEmergencyBeforeInstruct
- ☐ EarthquakeEmergencyDuringInstruct
- ☐ EarthquakeEmergencyAfterInstruct
- ☐ EarthquakeRiskBeforeInstruct
- ☐ EarthquakeRiskDuringInstruct
- ☐ EarthquakeRiskAfterInstruct
- ☐ FloodEmergencyBeforeInstruct
- ☐ FloodEmergencyDuringInstruct
- ☐ FloodEmergencyAfterInstruct
- ☐ FloodRiskBeforeInstruct
- ☐ FloodRiskDuringInstruct
- ☐ FloodRiskAfterInstruct

20. When a citizen launches the application, it detects that a new flood is active. The system provide the citizens on how they must act during a flood. Can you indicate *all* features in the feature diagram that are currently active?

Plusieurs réponses possibles.

- ☐ Default Feature
- ☐ Inform
- ☐ Instruct
- ☐ DisplaySeverity
- ☐ ShowImpactedZone
- ☐ EarthquakeInstruct
- ☐ FloodInstruct
- ☐ Standard
- ☐ Richter
- ☐ PolygonImpactedZone
- ☐ CircleImpactedZone
- ☐ EarthquakeEmergencyInstruct
- ☐ EarthquakeRiskInstruct
- ☐ FloodEmergencyInstruct
- ☐ FloodRiskInstruct
- ☐ EarthquakeEmergencyBeforeInstruct
- ☐ EarthquakeEmergencyDuringInstruct
- ☐ EarthquakeEmergencyAfterInstruct
- ☐ EarthquakeRiskBeforeInstruct
- ☐ EarthquakeRiskDuringInstruct
- ☐ EarthquakeRiskAfterInstruct
- ☐ FloodEmergencyBeforeInstruct
- ☐ FloodEmergencyDuringInstruct
- ☐ FloodEmergencyAfterInstruct
- ☐ FloodRiskBeforeInstruct
- ☐ FloodRiskDuringInstruct
- ☐ FloodRiskAfterInstruct

Passer à la question 21

A first
usage of
the
visualization
tool for
your first

If you're not in group B, you didn't answer correctly to the previous question ("Which task did you achieve?" in the previous set of questions). In that case, return to the page "A first task to develop" to select the correct achieved task.

Now, you must use the visualisation tool to answer the same set of questions. The instructions on how you must launch the visualisation tool are described in the provided instructions report. Use this tool to be able to answer correctly to the questions and verify if their previous answers are correct. Play the game and don't modify your previous answers.

It is possible that the names of the contexts or features listed below differ from

task (only
group B)

the names you have chosen in your implementation. However, we tried to provide names that are as explicit as possible so that you know what features and contexts they represent.

21. Assume a citizen wants to consult instructions about an earthquake risk (when no earthquake is currently occurring), can you tell us which context(s) is(are) active?

Plusieurs réponses possibles.

- ☐ Default Context
- ☐ Type
- ☐ Mode
- ☐ Earthquake
- ☐ Flood
- ☐ Active Emergency
- ☐ Passive Risk
- ☐ Before Emergency
- ☐ During Emergency
- ☐ After Emergency
- ☐ Before Risk
- ☐ During Risk
- ☐ After Risk

22. Considering that the government detects a new flood, it will provide the citizens which instructions they must act during a flood. Can you indicate which feature(s) will be *selected* thanks to the context-feature mapping?

Plusieurs réponses possibles.

- ☐ Default Feature
- ☐ Inform
- ☐ Instruct
- ☐ DisplaySeverity
- ☐ ShowImpactedZone
- ☐ EarthquakeInstruct
- ☐ FloodInstruct
- ☐ Standard
- ☐ Richter
- ☐ PolygonImpactedZone
- ☐ CircleImpactedZone
- ☐ EarthquakeEmergencyInstruct
- ☐ EarthquakeRiskInstruct
- ☐ FloodEmergencyInstruct
- ☐ FloodRiskInstruct
- ☐ EarthquakeEmergencyBeforeInstruct
- ☐ EarthquakeEmergencyDuringInstruct
- ☐ EarthquakeEmergencyAfterInstruct
- ☐ EarthquakeRiskBeforeInstruct
- ☐ EarthquakeRiskDuringInstruct
- ☐ EarthquakeRiskAfterInstruct
- ☐ FloodEmergencyBeforeInstruct
- ☐ FloodEmergencyDuringInstruct
- ☐ FloodEmergencyAfterInstruct
- ☐ FloodRiskBeforeInstruct
- ☐ FloodRiskDuringInstruct
- ☐ FloodRiskAfterInstruct

23. When a citizen launches the application, it detects that a new flood is active. The system provide the citizens on how they must act during a flood. Can you indicate *all* features in the feature diagram that are currently active?

Plusieurs réponses possibles.

- ☐ Default Feature
- ☐ Inform
- ☐ Instruct
- ☐ DisplaySeverity
- ☐ ShowImpactedZone
- ☐ EarthquakeInstruct
- ☐ FloodInstruct
- ☐ Standard
- ☐ Richter
- ☐ PolygonImpactedZone
- ☐ CircleImpactedZone
- ☐ EarthquakeEmergencyInstruct
- ☐ EarthquakeRiskInstruct
- ☐ FloodEmergencyInstruct
- ☐ FloodRiskInstruct
- ☐ EarthquakeEmergencyBeforeInstruct
- ☐ EarthquakeEmergencyDuringInstruct
- ☐ EarthquakeEmergencyAfterInstruct
- ☐ EarthquakeRiskBeforeInstruct
- ☐ EarthquakeRiskDuringInstruct
- ☐ EarthquakeRiskAfterInstruct
- ☐ FloodEmergencyBeforeInstruct
- ☐ FloodEmergencyDuringInstruct
- ☐ FloodEmergencyAfterInstruct
- ☐ FloodRiskBeforeInstruct
- ☐ FloodRiskDuringInstruct
- ☐ FloodRiskAfterInstruct

Passer à la question 24

**A
second
task to
develop**

After working on the first task and testing your knowledge in this task, your are asked to do the second task that we assign you depending on your group id. The tasks are explained above in the case study section. Students assigned to group A will continue with the task 2 first and group B will continue with the task 1. For this task 2 you must use the visualisation tool. The instructions to launch the visualisation tool is described in the instructions report.

After developed this task, please answer to the following questions.

24. Which task did you achieve ?

Une seule réponse possible.

- ☐ Task 2 (dedicated for students of the group A) *Passer à la question 27*
- ☐ Task 1 (dedicated for students of the group B) *Passer à la question 29*

25. Did you manage to finish the task in time (max. 25 minutes)?

Une seule réponse possible.

- ☐ Yes
- ☐ No

26. How much time did you take to finish this task (max. 25 minutes)?

Testing
your
second
task
(only
group
A)

If you're not in group A, you didn't answer correctly to the previous question ("Which task did you achieve?" in the previous set of questions). In that case, return to the page "A second task to develop" to select the correct achieved task.

Now, you must use the visualisation tool to answer the following set of questions. The instructions on how you must launch the visualisation tool are described in the provided instructions report.

It is possible that the names of the contexts or features listed below differ from the names you have chosen in your implementation. However, we tried to provide names that are as explicit as possible so that you know what features and contexts they represent.

27. Considering that the government detects a new flood, it will provide the citizens which instructions they must act during a flood. Can you indicate which feature(s) will be *selected* thanks to the context-feature mapping?

Plusieurs réponses possibles.

- ☐ Default Feature
- ☐ Inform
- ☐ Instruct
- ☐ DisplaySeverity
- ☐ ShowImpactedZone
- ☐ EarthquakeInstruct
- ☐ FloodInstruct
- ☐ Standard
- ☐ Richter
- ☐ PolygonImpactedZone
- ☐ CircleImpactedZone
- ☐ EarthquakeEmergencyInstruct
- ☐ EarthquakeRiskInstruct
- ☐ FloodEmergencyInstruct
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- ☐ EarthquakeEmergencyBeforeInstruct
- ☐ EarthquakeEmergencyDuringInstruct
- ☐ EarthquakeEmergencyAfterInstruct
- ☐ EarthquakeRiskBeforeInstruct
- ☐ EarthquakeRiskDuringInstruct
- ☐ EarthquakeRiskAfterInstruct
- ☐ FloodEmergencyBeforeInstruct
- ☐ FloodEmergencyDuringInstruct
- ☐ FloodEmergencyAfterInstruct
- ☐ FloodRiskBeforeInstruct
- ☐ FloodRiskDuringInstruct
- ☐ FloodRiskAfterInstruct

28. When a citizen launches the application, it detects that a new flood is active. The system provide the citizens on how they must act during a flood. Can you indicate *all* features in the feature diagram that are currently active?

Plusieurs réponses possibles.

- ☐ Default Feature
- ☐ Inform
- ☐ Instruct
- ☐ DisplaySeverity
- ☐ ShowImpactedZone
- ☐ EarthquakeInstruct
- ☐ FloodInstruct
- ☐ Standard
- ☐ Richter
- ☐ PolygonImpactedZone
- ☐ CircleImpactedZone
- ☐ EarthquakeEmergencyInstruct
- ☐ EarthquakeRiskInstruct
- ☐ FloodEmergencyInstruct
- ☐ FloodRiskInstruct
- ☐ EarthquakeEmergencyBeforeInstruct
- ☐ EarthquakeEmergencyDuringInstruct
- ☐ EarthquakeEmergencyAfterInstruct
- ☐ EarthquakeRiskBeforeInstruct
- ☐ EarthquakeRiskDuringInstruct
- ☐ EarthquakeRiskAfterInstruct
- ☐ FloodEmergencyBeforeInstruct
- ☐ FloodEmergencyDuringInstruct
- ☐ FloodEmergencyAfterInstruct
- ☐ FloodRiskBeforeInstruct
- ☐ FloodRiskDuringInstruct
- ☐ FloodRiskAfterInstruct

Passer à la question 31

Testing
your
second
task
(only
group

If you're not in group B, you didn't answer correctly to the previous question ("Which task did you achieve?" in the previous set of questions). In that case, return to the page "A second task to develop" to select the correct achieved task.

Now, you must use the visualization tool to answer the following set of questions. The instructions on how you must launch the visualization tool are described in the provided instructions report.

It is possible that the names of the contexts or features listed below differ from the names you have chosen in your implementation. However, we tried to provide names that are as explicit as possible so that you know what features and contexts they

B)

represent.

29. When the government announces the occurrence of a flood, it will inform the citizens about its characteristics (i.e. its severity and impacted zone). Can you indicate which feature(s) will be *selected* thanks to the context-feature mapping?

Plusieurs réponses possibles.

- ☐ Default Feature
- ☐ Inform
- ☐ Instruct
- ☐ DisplaySeverity
- ☐ ShowImpactedZone
- ☐ EarthquakeInstruct
- ☐ FloodInstruct
- ☐ Standard
- ☐ Richter
- ☐ PolygonImpactedZone
- ☐ CircleImpactedZone
- ☐ EarthquakeEmergencyInstruct
- ☐ EarthquakeRiskInstruct
- ☐ FloodEmergencyInstruct
- ☐ FloodRiskInstruct
- ☐ EarthquakeEmergencyBeforeInstruct
- ☐ EarthquakeEmergencyDuringInstruct
- ☐ EarthquakeEmergencyAfterInstruct
- ☐ EarthquakeRiskBeforeInstruct
- ☐ EarthquakeRiskDuringInstruct
- ☐ EarthquakeRiskAfterInstruct
- ☐ FloodEmergencyBeforeInstruct
- ☐ FloodEmergencyDuringInstruct
- ☐ FloodEmergencyAfterInstruct
- ☐ FloodRiskBeforeInstruct
- ☐ FloodRiskDuringInstruct
- ☐ FloodRiskAfterInstruct

30. When a citizen launches the application, it detects that a new flood is active and receives information about this flood. This information describes that the severity is medium and its impacted zone is near the river. The system informs the citizen about the characteristics of the flood. Can you indicate **all** features in the feature diagram that are currently active?

Plusieurs réponses possibles.

- ☐ Default Feature
- ☐ Inform
- ☐ Instruct
- ☐ DisplaySeverity
- ☐ ShowImpactedZone
- ☐ EarthquakeInstruct
- ☐ FloodInstruct
- ☐ Standard
- ☐ Richter
- ☐ PolygonImpactedZone
- ☐ CircleImpactedZone
- ☐ EarthquakeEmergencyInstruct
- ☐ EarthquakeRiskInstruct
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- ☐ EarthquakeEmergencyBeforeInstruct
- ☐ EarthquakeEmergencyDuringInstruct
- ☐ EarthquakeEmergencyAfterInstruct
- ☐ EarthquakeRiskBeforeInstruct
- ☐ EarthquakeRiskDuringInstruct
- ☐ EarthquakeRiskAfterInstruct
- ☐ FloodEmergencyBeforeInstruct
- ☐ FloodEmergencyDuringInstruct
- ☐ FloodEmergencyAfterInstruct
- ☐ FloodRiskBeforeInstruct
- ☐ FloodRiskDuringInstruct
- ☐ FloodRiskAfterInstruct

Passer à la question 31

**Feedback
on the
visualisation
tool**

After having seen the visualisation tool at work in one of your previous tasks, we now ask you to take a step back and respond to some more high-level questions regarding to potential usefulness of such a tool, by relying on your experience as a programmer, while still playing the role of a potential developer using this new programming technology.

31. Is the representation of the models (context model, feature model, ...) in the visualisation tool understandable? (You must take into account the static representation of the models.)

Une seule réponse possible.

	1	2	3	4	5	
Hard to understand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Easy to understand

32. Is the representation of the models (context model, feature model, ...) in the visualisation tool understandable? (You must take into account the dynamic representation of the models.)

Une seule réponse possible.

	1	2	3	4	5	
Hard to understand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Easy to understand

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

Une seule réponse possible.

	1	2	3	4	5	
Static	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Dynamic

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

Une seule réponse possible.

	1	2	3	4	5	
Not at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Absolutely

35. Do you think this visualisation tool is easy to use?

Une seule réponse possible.

	1	2	3	4	5	
Not at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Absolutely

36. What particular functionalities of this visualisation tool can improve a developer's experience with this programming approach and why?

37. What could or should be improved in the visualisation tool to further enhance a developer's experience, and why?

Passer à la question 38

**Feedback
on the
approach**

After having evaluating the visualisation tool, we now ask you to take a step back and respond to some more high-level questions regarding to potential usefulness of such an approach, by relying on your experience as a programmer, while still playing the role of a potential developer using this new programming technology.

38. Is the language for declaring the models clear?

Une seule réponse possible.

	1	2	3	4	5	
Not at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Absolutely

39. Is the language for designing the mapping between contexts and features clear?

Une seule réponse possible.

	1	2	3	4	5	
Not at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Absolutely

40. What could or should be improved in this language to help the developer in his programming tasks, and why?

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