

Group Discussion - The flow from Class Diagram to Sequence Diagram to running code

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Activity Kind

Group Discussion

Purpose

The purpose of this activity is to reflect on this design and prototyping experience in order to recognize an important work pattern.

Pre-requisite

Students are expected to have completed

- Small Group Activity - Complete the creation of the UML Sequence Diagram

Tasking

This mentor-driven discussion focuses on the iterative process of design, use of UML, and prototyping. Many might assume that the “right” process is to:

1. Capture the requirements
2. Select an appropriate architecture as a base and refine it
3. Select an appropriate detailed design and refine it
4. Implement the design

Unfortunately, this **seldom** works well and effort to add more activities to this basic waterfall model have seldom resulted in an improvement. In fact, those efforts failed so spectacularly that the Agile movement was formed in response. From the perspective of many, Agile was a dramatic improvement, especially for those medium to small systems that are constantly changing and updating. There are, however, too many complexities and subtle issues that cause serious problems as the size of the software grows as well as the demands for more sophistication in what it does and how it works.

We have been iterating toward a system solution at several levels at the same time. At the macro level, we have been delivering incremental enhancements to the calculator, once each week. In parallel with that, we have been doing experiments and much smaller iterations on small aspects that eventually make it into the calculator.

The most recent iteration with UML Class and Sequence diagrams demonstrates doing what you know and can do, with exploration on new ideas, and cycling back and enhancing the design and the implementation, leveraging what the exploration has taught us.

Would it have been possible to produce a useful UML Class Diagram at the beginning without going through the steps we did? That is a very good question. The answer is, “It depends.”

Which of those steps, in your opinion helped you produce a meaningful Class Diagram? How did the information from the process producing the Class Diagram help you produce the Sequence Diagram? Could you have produced a useful Sequence Diagram correct the first time if you had just tried harder? What was it from the prototyping effort that helped you come up with a better Sequence Diagram? Do you think the prototyping was important or could you have accomplished just as much spending that extra time from the prototyping and the second Sequence Diagram effort on the first Sequence Diagram activity?

As these questions are asked, try to come up with your own answer in your ENB prior to someone else answering the question. Don't be shy about offering up your perspective. Listen to what others have to say and capture the good ideas that you did not see when you produced your answer. This is a golden opportunity to learn and grow.

Deliverable

Each student is expected to provide evidence of their active participation by the things they write in their ENB prior to someone answering the question. Don't just write down what others say.

The students **must** also take notes during the activity and record any concerns, doubts, or new insights in their ENB. If there are no notes from this activity in an individual's engineering notebook, our only conclusion must be that you did not participate.

Submission

Students are expected to **complete** this part of their ENB prior to starting the next activity.