Describing the capabilities and cases of uses for sequence diagrams in software engineering *

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Abstract

The article will describe the general principles of constructing sequence diagrams, and provide optimal cases of their use in the field of software engineering modeling.

The main structural elements of a sequence diagram will be described, the rules for their use with corresponding examples.

1 Introduction

In the well-known graphical description language for modeling in the field of software development, UML, there are several types of diagrams, each of which has its own advantages and disadvantages.

Among the popular types of diagrams are class diagrams, component diagrams, and activity diagrams.

The problem with all the above diagrams is that they cannot simulate the dynamics of the model, the behavior and the relationship between "actors" over time. They represent the structure, but not the behavior of the model on the timeline.

To solve this problem, a sequence diagram was created. It, unlike other types of diagrams, shows the interactions of "actors" on the timeline, the exchange of "messages" (data) between them. And, again, this is all shown in projection on the time axis. That is, it allows you to explore the model in dynamics.

When to use a sequence diagram is detailed in the Part 2. Details about sequence diagram notation are in a 3 Part. In a 4 Part there are tips about creating sequence diagram. And the 5 Part is a Conclusion of this article.

2 When to use a sequence diagram

A sequence diagram should be used primarily to visualize relationships between objects, taking into account the sequence of these very relationships. [1]

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This diagram is very useful for modeling synchronous services, it allows you to think through all the interactions between "actors" from the beginning to the end of the service life cycle on the timeline.

3 The notation

Niekedy treba uviesť zoznam:

- jedna vec
- druhá vec
  - x
  - y

Ten istý zoznam, len číslovaný:

1. jedna vec
2. druhá vec
   (a) x
   (b) y

Veľmi dôležitá poznámka. Niekedy je potrebné nadpisom označiť odsek. Text pokračuje hneď za nadpisom.

4 Building a Sequence Diagram

5 Conclusion

References

[1] Donald Bell. Explore the uml sequence diagram. `https://developer.ibm.com/articles/the-sequence-diagram/`.