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# UML 2 – Zertifizierung:

**Fundamental, Intermediate und Advanced**

Test-Vorbereitung zum  
OMG Certified UML Professional

Mit einem Geleitwort von Richard M. Soley



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Wenn die Sprache nicht stimmt, ist das, was gesagt wird, nicht das,  
was gemeint ist.

*Konfuzius*



## Geleitwort von Richard M. Soley

The Unified Modeling Language (UML) is one of the biggest success stories in the Information Technology (IT) industry. Once used solely as a way to sketch the possible requirements or operations of an IT system, UML is now used in an array of ways by professionals with a wide variety of backgrounds, for example:

- Business planners use UML as a language to specify the planned operation of a business process, perhaps in concert with a business process language such as the Business Process Modeling Notation (BPMN).
- Consumer device engineers use UML as a way to outline the requirements for an embedded device and how it is to be used by an end-user.
- Software architects use UML as an overall design for major stand-alone software products.
- IT professionals use UML as an agreed set of models to integrate existing applications.
- Database professionals use UML to manage the integration of databases within a data warehouse, perhaps in concert with a data warehousing language such as the Common Warehouse Metamodel (CWM).
- Software developers use UML to develop systems that are flexible in the face of changing business requirements or implementation infrastructure.

These are just a few examples of ways in which UML may be used; there are many more. Since the creation of the UML standard in 1997, the language has been extended into a full systems engineering language (known as SysML) to solve the integrated development problem of systems development professionals.

Clearly, there is some utility and expressibility in a language that has many dozens of implementations, both open-source and closed, that has found its way into every major (and most not-so-major) integrated development environment. However, that is not enough for a language to be successful; an entire ecosystem is needed to make a standard such as UML successful. One must be able to find, train and evaluate modeling professionals to ensure that one's projects will actually be carried out on time, on budget, and within constraints. This means that change must be instilled in the IT organization. It's wonderful that the UML standard, and related standards like the Meta Object Facility (MOF) and XML Metadata Interchange (XMI), allow tools to share models and diagrams; this means that developers can choose and

easily implement their own tool chains, integrating the correct reverse-engineering tool, with the correct model display tool, with the correct code generator. Yet, all of this technical infrastructure is pointless unless the human dimension is covered too. Development teams that rely on UML, from business analysts, to architects, to systems analysts, to programmers, must learn to speak the lingo.

While the OMG's standards specifications (found at <http://www.omg.org/>) define the norms, more is needed to ensure that team builders are hiring, building, and delivering quality results to their internal and external customers. In 2003, the Object Management Group teamed up with the UML Technology Institute to address this issue, resulting in the development of the OMG-Certified UML Professional (OCUP) program. The OCUP program defines UML expertise at three different professional levels (Fundamental, Intermediate, and Advanced), and it tests ability against those measures in a fair, unbiased, worldwide testing program. The OCUP UML Intermediate test taken in Bangalore is equivalent to the OCUP UML Intermediate test taken in Paris. Passing these tests clearly confirms that the test-taker is a leader in the field; one who understands the need for expertise in modeling, as well as one who has taken the time and effort to improve his or her development skills.

OCUP allows developers to show what they know. Passing the OCUP test marks you as a leader.

This ground-breaking book focuses on preparing you for the first two steps; to pass the OCUP Fundamental and Intermediate tests. This will allow you to show yourself, your peers, and your employer that you understand the value of modeling to the creation of quality systems that are delivered faster, better, and cheaper. The authors of this tome have not only proven their mettle by passing both tests themselves, but by teaching UML expertise in classroom and conference settings that led to remarkably high OCUP test passing rates – even just weeks after the OCUP Program became available worldwide. You have made the right decision in your journey to exhibit proof of your expertise, and this book will help you take this important first step!

*Richard Mark Soley, Ph.D.  
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Object Management Group, Inc.  
7 August 2006*

## Geleitwort von Ivar Jacobson zur 1. Auflage UML 2-Zertifizierung: Intermediate-Stufe

The Unified Modeling Language (UML) can be used like any other natural language. It is spoken in several ways:

Some people use UML slang to sketch a model to communicate with colleagues or to store some notes.

Others speak a UML dialect. They use some vocabulary that is not formally defined, but which is easy to use, pragmatic, and a lot of people understand the right thing.

Most software developers speak pragmatic UML. Not perfect, some special words are rarely or never used. Sometimes the blur of their models leads to misunderstandings. However, generally speaking it works well.

Some people are real UML virtuosos. So to speak the Goethe's, Schiller's, and Lessing's of the UML. They know every detail of the UML and know how to use it.

Today it is a must for a software developer to communicate with UML. Sureley it is more important to know how to use UML instead of knowing each vocabulary or every grammar rule of the UML. However, just like in natural languages you can battle your way with basic knowledge of language formalism. Although the content is correct and good, a missing knowledge of language formalism can lead to misunderstandings, wrong or laborious models.

If you would like to use UML professionally you should well know the language. The three UML certification levels define the level of language knowledge. The fundamental level makes sense for all UML users. This book prepares you for the intermediate level. That level is important for every developer who is more than a simple UML user; like architects, instructors, coaches, tool vendors, senior developers, MDA developers, and so on.

For these persons UML diagrams are not simple pictures for communication and documentation purposes. A UML diagram is a view of a formally defined model. That is the content of the intermediate certification. It is only this formal foundation which turns the UML into something powerful.. In contrast to natural languages like Swedish or German, UML is understandable for computers. And in contrast to programming languages like C++, Java, C#, and Co. UML is easy to read by humans. A pictures is much more expressive than thousand words.

Developers who know this level can clearly, concisely, and unambiguously communicate sophisticated and complex facts. Their models are less mistakable and have less margin of interpretation. Finally they can work more effectively and efficiently.

This book is focused on preparing you to pass the OCUP intermediate exam and show yourself, your peers and your employer that you understand the value of modeling to the creation of quality software that is delivered better, faster and cheaper. The authors have proven their mettle not only by passing the tests themselves, but by teaching UML expertise in classroom settings that led to remarkably high OCUP test passing rates, just weeks after the OCUP Program became available worldwide. You have taken the right first step, to prepare yourself to show what you know – and this book is the right precursor to get you there!

*Ivar Jacobson*  
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