

# **Advanced OO Modeling: Metamodels and Notations**

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Building an object-oriented model requires knowledge of process and techniques. Representing the model itself requires the use of a notation underpinned by a rigorous definition. Today, this usually starts with a metamodel. Together, the metamodel and the notation are known as a "modeling language". Two modeling languages are described and compared: UML and OML (a UML variant). Advanced use of both languages is described particularly for concepts such as roles, for stereotypes and for aggregations, associations and other relationships. This tutorial will focus on the formal underpinning of OML and UML by means of metamodels. The OML metamodel itself derives from the 1995 COMMA project in which all then current methodologies were analyzed for their implicit metamodel. In addition, many of the developers of OML were also involved as reviewers for UML. Following the metamodel analysis, the accompanying notations of OML and UML are then described and linked closely to the metamodels previously described. In all cases, the focus is restricted to the core models — namely the static descriptors of concepts and relationships.