KDM Analytics

Working Together to Build Confidence

Knowledge Discovery Metamodel (KDM) Software Development Kit

KDM SDK is an **Eclipse ™ plugin** which provides a set of tools for working with KDM. KDM SDK v.2.0 consists of the following components:

- KDM graphical **wizard** which allows opening existing KDM XMI files, browsing them, editing them, including drag-and-drop restructuring, editing of the attributes, adding deleting model elements, etc. and saving models in XMI.
- Comprehensive set of **examples** for the KDM specification
- KDM XMI 2.1 **export** facility; exports KDM in latest version of OMG XMI 2.1
- KDM model management factory; a set of **Java interface** definitions and classes to create KDM models, query KDM models and export/import them in XML Metadata Interchange (XMI) format

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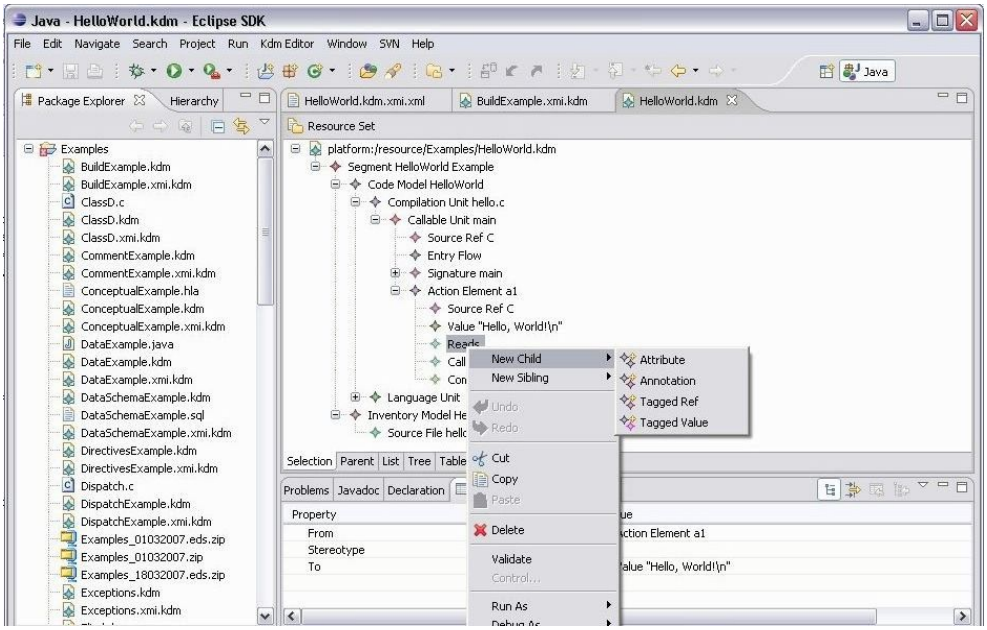
Knowledge Discovery Metamodel (KDM) is the OMG's publicly available specification (http://www.omg.org). KDM provides a common intermediate representation of existing software systems and their operating environments. It is a vendor-neutral representation that is independent of a programming language and platform. It is designed as the OMG's foundation for the Software Modernization and Software Assurance. KDM is a MOF metamodel that defines XMI interchange format between existing tools that work with existing software. It also defines the API on which next generation tools for modernization and software assurance can be built .



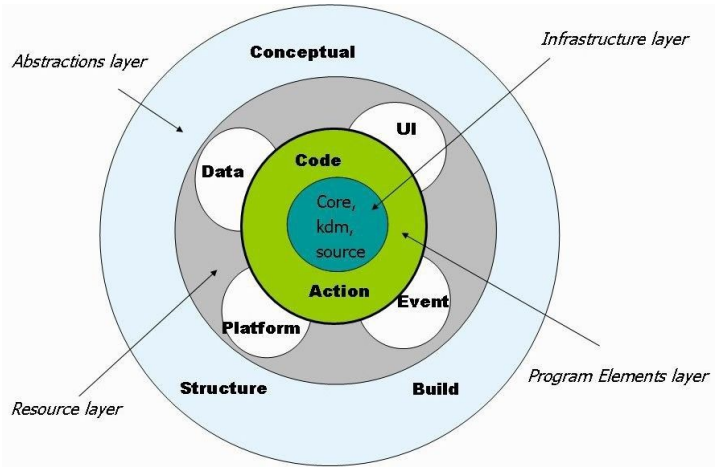
KDM SDK from KDM Analytics is a "**springboard" for adopting KDM**. The product supports the publicly available KDM 1.0 specification.

The product is aimed at developers, researchers, technologists as well as trainers and students. The product will help them understand the KDM specification, facilitate design of the mapping from proprietary internal representation into KDM and jumpstart development of the KDM tools.

Why KDM ?

KDM provides a common ***intermediate representation*** of existing software systems and their operating environments. The goal is to dramatically increase the ***interoperability*** between existing maintenance, evolution, assessment and modernization tools, to fully support today's increasingly complex and interconnected software systems. It defines an ontology for describing the key aspects of knowledge related to the various facets of enterprise software. KDM support means investment into the KDM ecosystem - a growing open-standard based cohesive community of tool vendors, service providers, and commercial components.

KDM represents entire enterprise software systems, not just code. It provides a high-fidelity intermediate representation which can be used for performing static analysis of existing software systems. KDM facilitates incremental analysis of software systems. The initial KDM system knowledge is obtained directly from the software system. This knowledge is augmented through incremental analysis of the initial KDM, producing more pieces of knowledge by operating entirely within the KDM technology space. The steps of the knowledge extraction process can be performed by tools, and may involve the analyst.



KDM is the uniform language and platform independent representation. Its extensibility mechanism allows addition of domain, application and implementation specific knowledge.

KDM packages are arranged into the following four layers:

Infrastructure Layer consists of the **Core**, **kdm**, and **Source** packages which provide a small common core for all other packages, the inventory model of the artifacts of the existing system and full traceability between the meta-model elements as links back to the source code of the artifacts, as well as the uniform extensibility mechanism. The Core package determines several of patterns that are reused by other KDM packages.

Program Elements Layer consists of the **Code** and **Action** packages.

Code package represents programming elements as determined by programming languages, for example data types, procedures, classes, methods, variables, etc. This package is similar in purpose to the Common Application Meta-model (CAM) from another OMG specification, called Enterprise Application Integration (EAI). KDM Code package provides greater level of detail and is seamlessly integrated with the architecturally significant views of the software system.

Action package captures the low level behaviour elements of applications, including detailed control- and data flow between statements. Code and Action package in combination provide a high-fidelity intermediate representation of each component of the enterprise software system.

Resource Layer represents the operational environment of the existing software system.

Platform package represents the operating environment of the software, related to the operating system, middleware, etc. including the control flows between components as they are determined by the runtime platform.

UIpackage represents the knowledge related to the user interfaces of the existing software system.

Event package represents the knowledge related to events and state-transition behaviour of the existing software system.

Data package represents the artifacts related to persistent data, such as indexed files, relational databases, and other kinds of data storage. The Data package is aligned with another OMG specification, called Common Warehouse Meta-model (CWM).

Abstractions Layer represents domain and application abstractions.

Conceptual package represent business domain knowledge and business rules, insofar as this information can be mined from existing applications. These packages are aligned with another OMG specification, called Semantics of Business Vocabulary and Rules (SBVR).

Structure package describes the meta-model elements for representing the logical organization of the software system into subsystems, layers and components.

Build package represents the engineering view of the software system

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