.NET Domain Driven Design With C

Domain-driven design

Domain-driven design (DDD) is a major software design approach, focusing on modeling software to match a domain according to input from that domain's - Domain-driven design (DDD) is a major software design approach, focusing on modeling software to match a domain according to input from that domain's experts. DDD is against the idea of having a single unified model; instead it divides a large system into bounded contexts, each of which have their own model.

Under domain-driven design, the structure and language of software code (class names, class methods, class variables) should match the business domain. For example: if software processes loan applications, it might have classes like "loan application", "customers", and methods such as "accept offer" and "withdraw".

Domain-driven design is predicated on the following goals:

placing the project's primary focus on the core domain and domain logic layer;

basing complex designs on a model of the domain;

initiating a creative collaboration between technical and domain experts to iteratively refine a conceptual model that addresses particular domain problems.

Critics of domain-driven design argue that developers must typically implement a great deal of isolation and encapsulation to maintain the model as a pure and helpful construct. While domain-driven design provides benefits such as maintainability, Microsoft recommends it only for complex domains where the model provides clear benefits in formulating a common understanding of the domain.

The term was coined by Eric Evans in his book of the same name published in 2003.

Model-driven engineering

Model-driven engineering (MDE) is a software development methodology that focuses on creating and exploiting domain models, which are conceptual models - Model-driven engineering (MDE) is a software development methodology that focuses on creating and exploiting domain models, which are conceptual models of all the topics related to a specific problem. Hence, it highlights and aims at abstract representations of the knowledge and activities that govern a particular application domain, rather than the computing (i.e. algorithmic) concepts.

MDE is a subfield of a software design approach referred as round-trip engineering. The scope of the MDE is much wider than that of the Model-Driven Architecture.

Domain-specific language

a domain-specific language for data-driven websites. This scripting language is used to weave together languages and services such as Java, .NET, C++ - A domain-specific language (DSL) is a computer language specialized to a particular application domain. This is in contrast to a general-purpose language (GPL), which is broadly applicable across domains. There are a wide variety of DSLs, ranging from widely used languages for common domains, such as HTML for web pages, down to languages used by only one or a few pieces of software, such as MUSH soft code. DSLs can be further subdivided by the kind of language, and include domain-specific markup languages, domain-specific modeling languages (more generally, specification languages), and domain-specific programming languages. Special-purpose computer languages have always existed in the computer age, but the term "domain-specific language" has become more popular due to the rise of domain-specific modeling. Simpler DSLs, particularly ones used by a single application, are sometimes informally called mini-languages.

The line between general-purpose languages and domain-specific languages is not always sharp, as a language may have specialized features for a particular domain but be applicable more broadly, or conversely may in principle be capable of broad application but in practice used primarily for a specific domain. For example, Perl was originally developed as a text-processing and glue language, for the same domain as AWK and shell scripts, but was mostly used as a general-purpose programming language later on. By contrast, PostScript is a Turing-complete language, and in principle can be used for any task, but in practice is narrowly used as a page description language.

Anemic domain model

Height * Width; } } Plain old Java object Domain-driven design GRASP information expert, an anemic domain model is the typical result of not applying - The anemic domain model is described as a programming anti-pattern where the domain objects contain little or no business logic like validations, calculations, rules, and so forth. The business logic is thus baked into the architecture of the program itself, making refactoring and maintenance more difficult and time-consuming.

Model-driven architecture

which are expressed as models. Model Driven Architecture is a kind of domain engineering, and supports model-driven engineering of software systems. It - Model-driven architecture (MDA) is a software design approach for the development of software systems. It provides a set of guidelines for the structuring of specifications, which are expressed as models. Model Driven Architecture is a kind of domain engineering, and supports model-driven engineering of software systems. It was launched by the Object Management Group (OMG) in 2001.

Data mesh

leveraging a domain-oriented, self-serve design (in a software development perspective), and borrows Eric Evans' theory of domain-driven design and Manuel - Data mesh is a sociotechnical approach to building a decentralized data architecture by leveraging a domain-oriented, self-serve design (in a software development perspective), and borrows Eric Evans' theory of domain-driven design and Manuel Pais' and Matthew Skelton's theory of team topologies. Data mesh mainly concerns itself with the data itself, taking the data lake and the pipelines as a secondary concern. The main proposition is scaling analytical data by domain-oriented decentralization. With data mesh, the responsibility for analytical data is shifted from the central data team to the domain teams, supported by a data platform team that provides a domain-agnostic data platform. This enables a decrease in data disorder or the existence of isolated data silos, due to the presence of a centralized system that ensures the consistent sharing of fundamental principles across various nodes within the data mesh and allows for the sharing of data across different areas.

.NET

(2016). C# 6 and .NET Core 1.0: Modern Cross-Platform Development. Packt Publishing. ISBN 978-1785285691. Zimarev, Alexey (2019). Hands-On Domain-Driven Design - The .NET platform (pronounced as "dot net"; formerly named .NET Core) is a free and open-source, managed computer software framework for Windows, Linux, and macOS operating systems. It is a cross-platform successor to the .NET Framework. The project is mainly developed by Microsoft employees by way of the .NET Foundation and is today released under an MIT License.

New versions of the .NET platform are released annually, typically in November. As of May 2025, the most recent version of .NET is .NET 9, released in November 2024, while the current long-term support (LTS) version is .NET 8, released in November 2023 and scheduled to receive updates until November 2026.

Metamodeling

model Data governance Model-driven engineering (MDE) Model-driven architecture (MDA) Domain-specific language (DSL) Domain-specific modeling (DSM) Generic - A metamodel is a model of a model, and metamodeling is the process of generating such metamodels. Thus metamodeling or meta-modeling is the analysis, construction, and development of the frames, rules, constraints, models, and theories applicable and useful for modeling a predefined class of problems. As its name implies, this concept applies the notions of meta- and modeling in software engineering and systems engineering. Metamodels are of many types and have diverse applications.

Web design

graphic design; user interface design (UI design); authoring, including standardised code and proprietary software; user experience design (UX design); and - Web design encompasses many different skills and disciplines in the production and maintenance of websites. The different areas of web design include web graphic design; user interface design (UI design); authoring, including standardised code and proprietary software; user experience design (UX design); and search engine optimization. Often many individuals will work in teams covering different aspects of the design process, although some designers will cover them all. The term "web design" is normally used to describe the design process relating to the front-end (client side) design of a website including writing markup. Web design partially overlaps web engineering in the broader scope of web development. Web designers are expected to have an awareness of usability and be up to date with web accessibility guidelines.

Responsive web design

responsive web design in his brief 2011 book titled Responsive Web Design. Responsive design was listed as #2 in Top Web Design Trends for 2012 by .net magazine - Responsive web design (RWD) or responsive design is an approach to web design that aims to make web pages render well on a variety of devices and window or screen sizes from minimum to maximum display size to ensure usability and satisfaction.

A responsive design adapts the web-page layout to the viewing environment by using techniques such as fluid proportion-based grids, flexible images, and CSS3 media queries, an extension of the @media rule, in the following ways:

The fluid grid concept calls for page element sizing to be in relative units like percentages, rather than absolute units like pixels or points.

Flexible images are also sized in relative units, so as to prevent them from displaying outside their containing element.

Media queries allow the page to use different CSS style rules based on characteristics of the device the site is being displayed on, e.g. width of the rendering surface (browser window width or physical display size).

Responsive layouts automatically adjust and adapt to any device screen size, whether it is a desktop, a laptop, a tablet, or a mobile phone.

Responsive web design became more important as users of mobile devices came to account for the majority of website visitors. In 2015, for instance, Google announced Mobilegeddon and started to boost the page ranking of mobile-friendly sites when searching from a mobile device.

Responsive web design is an example of user interface plasticity.

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