

Engenharia de Softwares Escaláveis

Design Patterns e Domain-Driven Design com Java

Agenda

Etapă 9:

- Assessment.
- Context Mapper.



Assesment

Competência 1

Desenvolver software aplicando design patterns

1. Qual é o papel dos Design Patterns na solução de problemas de software?
2. Qual é o papel das Fachadas na integração de contextos limitados?

Competência 2

Projetar softwares de forma estratégica, usando "bounded contexts", subdomínios e linguagem ubíqua

1. Como o Domain-Driven Design (DDD) auxilia na gestão da complexidade de projetos de software?
2. Explique a diferença entre design estratégico e tático.
3. Qual é a importância da Linguagem Ubíqua, mesmo em projetos que não usam DDD?
4. O que são contextos principais, de suporte e genéricos? Por que os contextos genéricos, em geral, são contratados externamente?

Competência 3

Projetar softwares de forma estratégica usando "context maps"

1. Desenhe o Mapa de Contexto do Projeto Pet Friends (use o modelo do TP3 com as melhorias que achar necessário) e classifique os contextos encontrados em "Principal", "Genérico" e "Suporte" (neste cenário do AT o seu Bounded Context principal é o de Agendamento). Indique no mapa os tipos de relacionamentos.
2. Elabore uma lista com as estratégias a serem adotadas para as comunicações / integrações entre o contexto de agendamento e os contextos relacionados e aponte os tipos de comunicações entre contextos.

Competência 4

Projetar softwares usando "aggregates"

1. Explique a diferença entre Entidade e Objeto de Valor e dê um exemplo de cada usando o Pet Friends.
2. Modele os agregados que encontrar no contexto de Agendamento.



Context Mapper

The screenshot shows a web browser window with the address bar displaying `contextmapper.org/docs/home/`. The browser's address bar includes navigation buttons (back, forward, refresh, home) and a search bar. Below the address bar, there is a navigation bar with the Context Mapper logo and links to "Documentation", "Project Background", "Getting Involved", and "News". A search bar is also present in the top right corner of the navigation bar.

The main content area features a sidebar on the left with a list of navigation links: "Introduction", "Welcome" (highlighted in blue), "Getting started", "Create CML Project", "Examples", "Usage as Library", "Frequently Asked Questions", "Language Reference (Core)", and "Analysis and Design".

The main content area displays the "Welcome" section, which includes a large heading "Welcome" and a paragraph describing Context Mapper as a modular and extensible modeling framework for Domain-driven Design (DDD). The text mentions the "core component" and provides links to the "library version" and "here" (referring to a feature support table).

Below the "Welcome" section, there is an "Installation" section with two sub-sections: "Visual Studio Code Marketplace: Context Mapper" and "Eclipse Marketplace: Context Mapper". The "Visual Studio Code Marketplace" section includes a bullet point stating that it does not support all features available in Eclipse and provides a link to a feature support table.

<https://contextmapper.org/docs/home/>

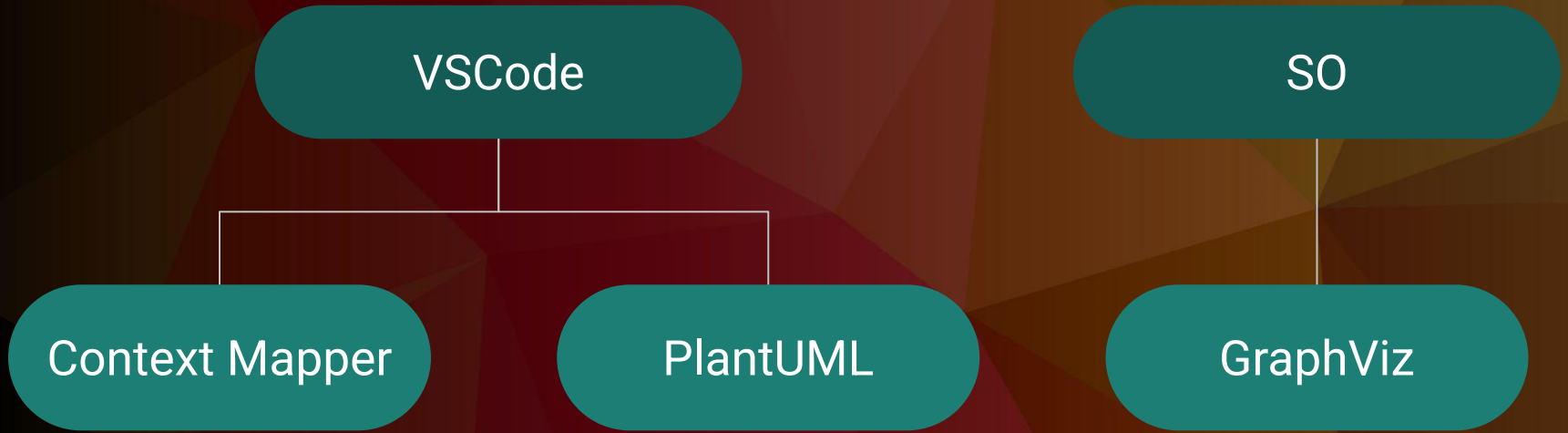
VSCode

SO

Context Mapper

PlantUML

GraphViz




Browser tabs: Welcome | Context Mapper x ContextMapper/context-ma x +

Address bar: github.com/ContextMapper/context-mapper-examples

Navigation: Administrative Conteúdo Ferramentas Livros Todos os favoritos

Buttons: README Apache-2.0 license



CONTEXT MAPPER

DSL Examples

Build passing Gitpod ready-to-code License Apache 2.0

This project contains example DDD Context Maps written in the ContextMapper DSL. The examples are provided for two different types of users. The simpler business analysis examples should be easy to understand for business analysts without technical background, while the detailed examples are meant for software architects and/or engineers.





Find out more about our DSL and tools on our website <https://contextmapper.org/> and [papers](#) published by [OST \(former HSR\)](#).

Start exploring the examples in the Context Mapper online IDE right now:

[Open in Gitpod](#)

Packages
No packages published

Contributors 4

-  **stefan-ka** Stefan Kapferer
-  **socadk** Doc SoC
-  **boxleytw** Brian Oxley
-  **mLeveIST** Miguel Levezinho

<https://github.com/ContextMapper/context-mapper-examples>

Insurance-Example-Stage-1.cml - context-mapper-examples-master - Visual Studio Code

Arquivo Editar Seleção Ver Acessar Executar Terminal Ajuda

Insurance-Example-Stage-1.cml x Insurance-Example-Stage-1_ContextMap.png x

```
bin > main > insurance-example > Insurance-Example-Stage-1.cml >
1  /* Example Context Map written with 'ContextMapper'
2  ContextMap InsuranceContextMap
3      type = SYSTEM_LANDSCAPE
4      state = TO_BE
5
6  /* Add bounded contexts to this context map:
7  contains CustomerManagementContext
8  contains CustomerSelfServiceContext
9  contains PrintingContext
10 contains PolicyManagementContext
11 contains RiskManagementContext
12 contains DebtCollection
13
14 /* Define the context relationships: */
15
16 CustomerSelfServiceContext <- CustomerManagementContext
17
18 CustomerManagementContext <- PrintingContext
19
20 PrintingContext -> PolicyManagementContext
21
22 RiskManagementContext <-> PolicyManagementContext
23
24 PolicyManagementContext <- CustomerManagementContext
25
26 DebtCollection <- PrintingContext
27
28 PolicyManagementContext <-> DebtCollection
29
30
31 /* Bounded Context Definitions */
32 BoundedContext CustomerManagementContext implements
33
34 BoundedContext CustomerSelfServiceContext implements
```

Botão direito do mouse.
Generate Graphical Context Map

PROBLEMAS 216 SAÍDA CONSOLE DE DEPURACÃO TERMINAL PORTAS

SLF4J: Failed to load class "org.slf4j.impl.StaticLoggerBinder".
SLF4J: Defaulting to no-operation (NOP) logger implementation

Ln 7, Col 39 Tamanho da Tecla: 4 UTF-8 LF Context Mapper DSL

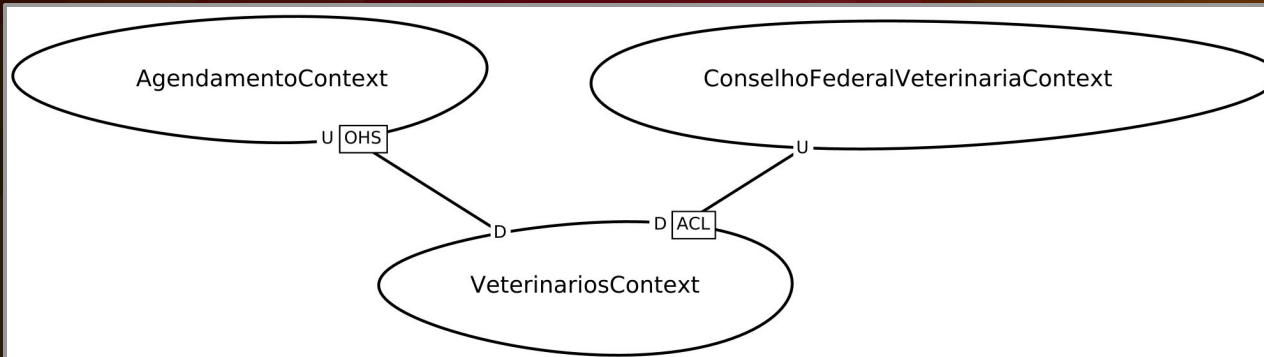


Pet Friends

≡ PetFriends_1.cml x

≡ PetFriends_1.cml > ⚙ PetFriends

```
1
2 ContextMap PetFriends {
3     contains AgendamentoContext
4     contains VeterinariosContext
5     contains ConselhoFederalVeterinariaContext
6
7     VeterinariosContext [D] <- [U, OHS] AgendamentoContext
8     VeterinariosContext [D, ACL] <- [U] ConselhoFederalVeterinariaContext
9 }
10
11 BoundedContext AgendamentoContext
12 BoundedContext VeterinariosContext
13 BoundedContext ConselhoFederalVeterinariaContext
```



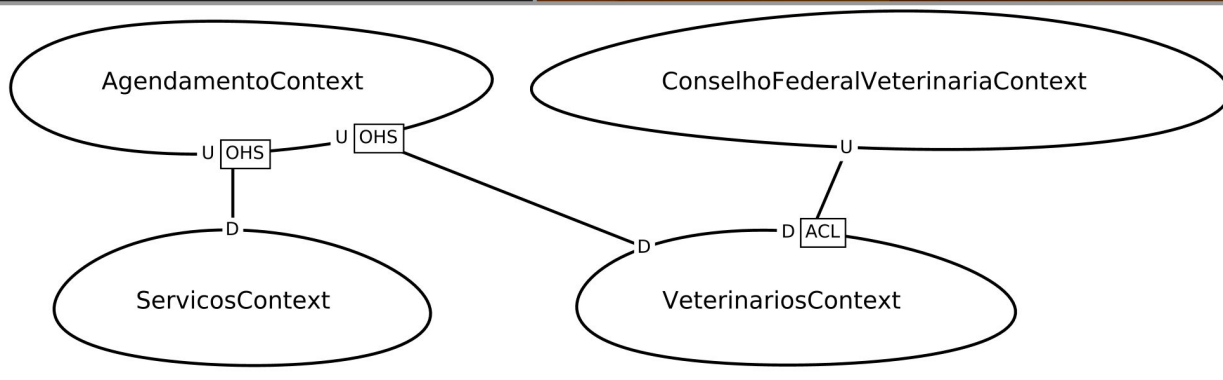
PetFriends_1.cml x

PetFriends_1.cml > PetFriends

```
1
2 ContextMap PetFriends {
3   contains AgendamentoContext
4   contains ServicosContext
5   contains VeterinariosContext
6   contains ConselhoFederalVeterinariaContext
7
8   ServicosContext [D] <- [U, OHS] AgendamentoContext
9
10  VeterinariosContext [D] <- [U, OHS] AgendamentoContext
11
12  VeterinariosContext [D, ACL] <- [U] ConselhoFederalVeterinariaContext
13 }
```

```
14
15 BoundedContext AgendamentoContext
16 BoundedContext ServicosContext
17 BoundedContext VeterinariosContext
18 BoundedContext ConselhoFederalVete
```

2



3

≡ PetFriends_1.cml ×

≡ PetFriends_1.cml > 🔑 PetFriends

```
1
2 ContextMap PetFriends {
3   contains AgendamentoContext
4   contains ServicosContext
5   contains VeterinariosContext
6   contains ConselhoFederalVeterinariaContext
7
8   ServicosContext [D] <- [U, OHS] AgendamentoContext {
9     implementationTechnology = "RESTful HTTP"
10  }
11
12  VeterinariosContext [D] <- [U, OHS] AgendamentoContext {
13    implementationTechnology = "RESTful HTTP"
14  }
15
16  VeterinariosContext [D, ACL] <- [U] ConselhoFederalVeterinariaContext {
17    implementationTechnology = "RESTful HTTP"
18  }
19 }
20
21 BoundedContext AgendamentoContext
22
23 BoundedContext ServicosContext
24
25 BoundedContext VeterinariosContext
26
27 BoundedContext ConselhoFederalVeterinariaContext
```

≡ PetFriends_1.cml x

≡ PetFriends_1.cml > ...

```
1
2 > ContextMap PetFriends { ...
20
21 BoundedContext AgendamentoContext {
22 |   domainVisionStatement "Fornece as funcionalidades de agendamento para todos os contextos da empresa."
23 | }
24
25 BoundedContext ServicosContext {
26 |   domainVisionStatement "Fornece as funcionalidades de Banho, Tosa e Passeio."
27 | }
28
29 BoundedContext VeterinariosContext {
30 |   domainVisionStatement "Fornece as funcionalidades consulta médica."
31 | }
32
33 BoundedContext ConselhoFederalVeterinariaContext{
34 |   domainVisionStatement "Fornece as funcionalidades de gerenciamento dos cadastros de médicos veterinários."
35 | }
```

4

5

PetFriends_1.cml X

PetFriends_1.cml > ...

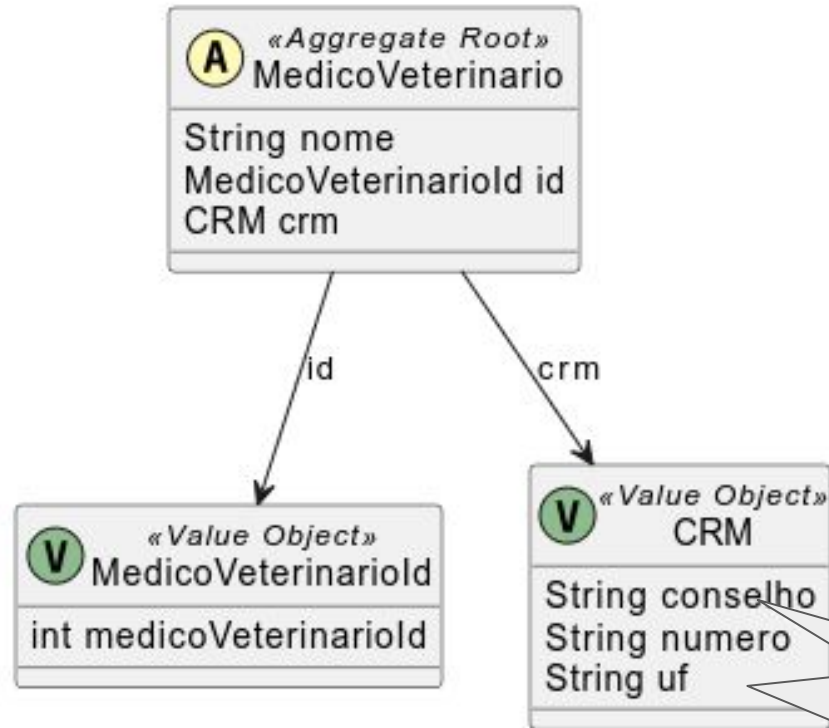
```
29 BoundedContext VeterinariosContext {
30     domainVisionStatement "Fornece as funcionalidades consulta médica."
31
32     Aggregate MedicoVeterinario {
33
34         Entity MedicoVeterinario {
35             aggregateRoot
36
37             - MedicoVeterinarioId id
38             - CRM crm
39             String nome
40         }
41
42         ValueObject MedicoVeterinarioId {
43             int medicoVeterinarioId key
44         }
45
46         ValueObject CRM {
47             String conselho
48             String numero
49             String uf
50         }
51     }
52 }
```

6

```
src-gen > PetFriends_1_BC_VeterinariosContext.puml > ...
1  @startuml
2
3  skinparam componentStyle uml2
4
5  package "'MedicoVeterinario' Aggregate" <<Rectangle>> {
6      class MedicoVeterinario <<(A,#fffab8) Aggregate Root>> {
7          String nome
8          MedicoVeterinarioId id
9          CRM crm
10     }
11     class MedicoVeterinarioId <<(V,DarkSeaGreen) Value Object>> {
12         int medicoVeterinarioId
13     }
14     class CRM <<(V,DarkSeaGreen) Value Object>> {
15         String conselho
16         String numero
17         String uf
18     }
19 }
20 MedicoVeterinario --> MedicoVeterinarioId : id
21 MedicoVeterinario --> CRM : crm
22
23
24  @enduml
```

Botão direito do
mouse.
Generate
PlantUML

'MedicoVeterinario' Aggregate



ALT+D

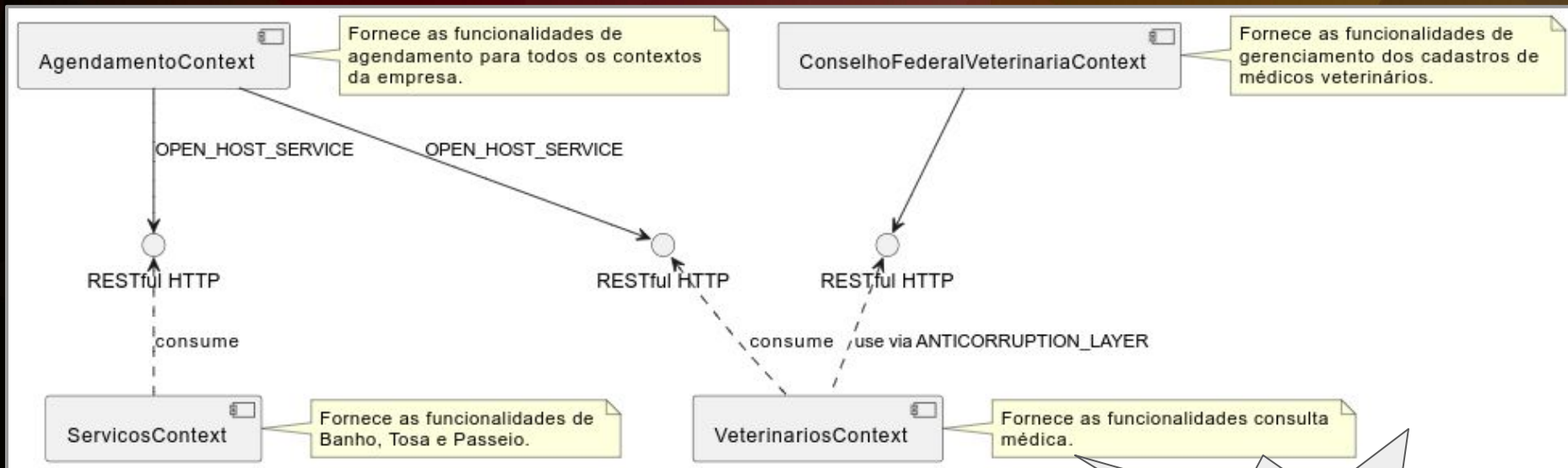
7

≡ PetFriends_1.cml

≡ PetFriends_1_ContextMap.puml 1 x

src-gen > ≡ PetFriends_1_ContextMap.puml > {} PetFriends_1_ContextMap

```
1  @startuml
2
3  skinparam componentStyle uml2
4
5  component [AgendamentoContext]
6  note right of [AgendamentoContext]
7  Fornece as funcionalidades de
8  agendamento para todos os contextos
9  da empresa.
10 end note
11 component [ServicosContext]
12 note right of [ServicosContext]
13 Fornece as funcionalidades de
14 Banho, Tosa e Passeio.
15 end note
16 component [VeterinariosContext]
17 note right of [VeterinariosContext]
18 Fornece as funcionalidades consulta
19 médica.
20 end note
21 component [ConselhoFederalVeterinariaContext]
22 note right of [ConselhoFederalVeterinariaContext]
23 Fornece as funcionalidades de
24 gerenciamento dos cadastros de
25 médicos veterinários.
26 end note
```



ALT+D