

untitled-ontology-27 (http://www.semanticweb.org/web/ontologies/2022/2/untitled-ontology-27) : [C:\Users\avm1\Desktop\Ontology\Paper Title\DBMS\dbms.owl]

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Active Ontology Entities Classes Object Properties Data Properties Annotation Properties Individuals OWLViz DL Query OntoGraf Ontology Differences SPARQL Query

Class hierarchy Class hierarchy (inferred)

Class hierarchy: ADVANCED_SQL

- Thing
 - DATABASE_MANAGEMENT_SYSTEMS
 - ADVANCED_SQL
 - INDEXING_AND_HASHING
 - INTRODUCTION_TO_DBMS
 - RELATIONAL_MODEL
 - SQL

OntoGraf:

Search: contains Search Clear

```
graph LR; Thing --> DBMS[DATABASE_MANAGEMENT_SYSTEMS]; DBMS --> INTRODUCTION_TO_DBMS; DBMS --> RELATIONAL_MODEL; DBMS --> INDEXING_AND_HASHING; DBMS --> ADVANCED_SQL; DBMS --> SQL;
```

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Class hierarchy Class hierarchy (inferred)

Class hierarchy: data_types

- Thing
 - DATABASE_MANAGEMENT_SYSTEMS
 - ADVANCED_SQL
 - DOMAIN_CONSTRAINTS
 - attributes_in_tables
 - data_types
 - INDEXING_AND_HASHING
 - INTRODUCTION_TO_DBMS
 - RELATIONAL_MODEL
 - SQL

OntoGraf:

Search: contains Search Clear

```
graph TD; Thing --> DATABASE_MANAGEMENT_SYSTEMS; DATABASE_MANAGEMENT_SYSTEMS --> ADVANCED_SQL; ADVANCED_SQL --> DOMAIN_CONSTRAINTS; DOMAIN_CONSTRAINTS --> attributes_in_tables; attributes_in_tables --> data_types;
```

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Class hierarchy Class hierarchy (inferred)

Class hierarchy: INDEXING_AND_HASHING

- Thing
 - DATABASE_MANAGEMENT_SYSTEMS
 - ADVANCED_SQL
 - INDEXING_AND_HASHING
 - ORDERED_INDICES
 - STATIC_HASHING
 - INTRODUCTION_TO_DBMS
 - RELATIONAL_MODEL
 - SQL

OntoGraf:

Search: contains Search Clear

```
graph LR; Thing --> DBMS[DATABASE_MANAGEMENT_SYSTEMS]; DBMS --> IAH[INDEXING_AND_HASHING]; IAH --> OI[ORDERED_INDICES]; IAH --> SH[STATIC_HASHING];
```

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Class hierarchy Class hierarchy (inferred)

Class hierarchy: searching_for_a_record

- Thing
 - DATABASE_MANAGEMENT_SYSTEMS
 - ADVANCED_SQL
 - INDEXING_AND_HASHING
 - ORDERED_INDICES
 - In_order_of_the_search_key
 - STATIC_HASHING
 - insertion_of_a_new_record
 - searching_for_a_record
 - INTRODUCTION_TO_DBMS
 - RELATIONAL_MODEL
 - SQL

OntoGraf:

Search: contains Search Clear

```
graph LR; Thing --> DBMS[DATABASE_MANAGEMENT_SYSTEMS]; DBMS --> IAH[INDEXING_AND_HASHING]; IAH --> OI[ORDERED_INDICES]; IAH --> SH[STATIC_HASHING]; OI --> IOSK[In_order_of_the_search_key]; SH --> INR[insertion_of_a_new_record]; SH --> SFR[searching_for_a_record];
```

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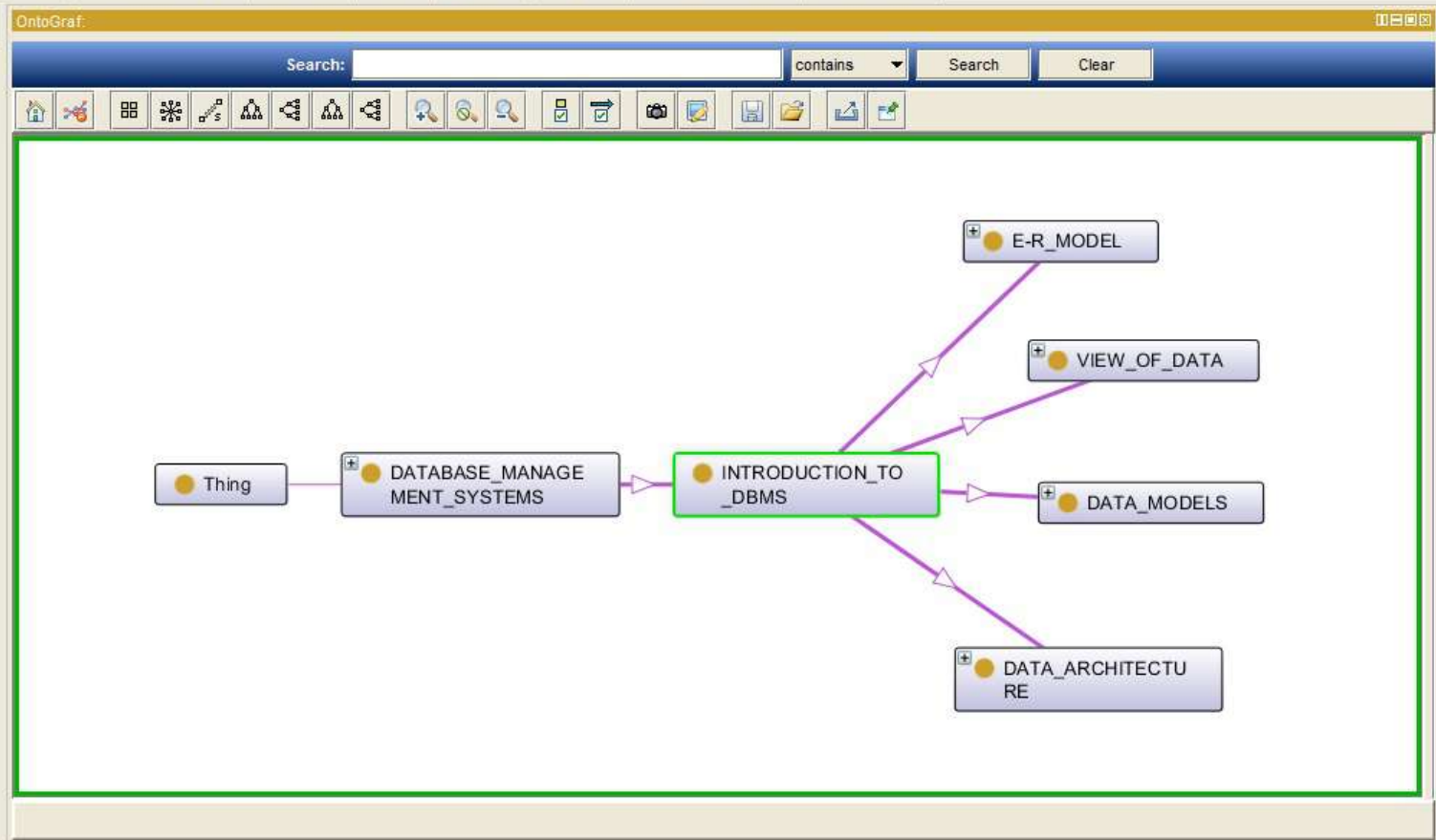
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Active Ontology Entities Classes Object Properties Data Properties Annotation Properties Individuals OWLViz DL Query OntoGraf Ontology Differences SPARQL Query

Class hierarchy Class hierarchy (inferred)

Class hierarchy: INTRODUCTION_TO_DBMS

- Thing
 - DATABASE_MANAGEMENT_SYSTEMS
 - ADVANCED_SQL
 - INDEXING_AND_HASHING
 - INTRODUCTION_TO_DBMS
 - DATA_ARCHITECTURE
 - DATA_MODELS
 - E-R_MODEL
 - VIEW_OF_DATA
 - RELATIONAL_MODEL
 - SQL



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Class hierarchy Class hierarchy (inferred)

Class hierarchy: DATA_ARCHITECTURE

- Thing
 - DATABASE_MANAGEMENT_SYSTEMS
 - ADVANCED_SQL
 - INDEXING_AND_HASHING
 - INTRODUCTION_TO_DBMS
 - DATA_ARCHITECTURE
 - one-tier_architecture
 - three-tier_architecture
 - two-tier_architecture
 - DATA_MODELS
 - E-R_MODEL
 - VIEW_OF_DATA
 - RELATIONAL_MODEL
 - SQL

OntoGraf:

Search: contains Search Clear

```
graph LR; Thing --> DBMS[DATABASE_MANAGEMENT_SYSTEMS]; DBMS --> INTRODUCTION[INTRODUCTION_TO_DBMS]; INTRODUCTION --> ER[E-R_MODEL]; INTRODUCTION --> VIEW[VIEW_OF_DATA]; INTRODUCTION --> DM[DATA_MODELS]; INTRODUCTION --> DA[DATA_ARCHITECTURE]; DA --> 3T[three-tier_architecture]; DA --> 1T[one-tier_architecture]; DA --> 2T[two-tier_architecture];
```

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Class hierarchy Class hierarchy (inferred)

Class hierarchy: DATA_MODELS

- Thing
 - DATABASE_MANAGEMENT_SYSTEMS
 - ADVANCED_SQL
 - INDEXING_AND_HASHING
 - INTRODUCTION_TO_DBMS
 - DATA_ARCHITECTURE
 - DATA_MODELS
 - entity_relationship_data_model
 - object_based_data_model
 - relational_data_models
 - semistructured_data_model
 - E-R_MODEL
 - VIEW_OF_DATA
 - RELATIONAL_MODEL
 - SQL

OntoGraf:

Search: contains Search Clear

Thing DATABASE_MANAGEMENT_SYSTEMS INTRODUCTION_TO_DBMS E-R_MODEL semistructured_data_model object_based_data_model relational_data_models entity_relationship_data_model DATA_ARCHITECTURE DATA_MODELS VIEW_OF_DATA

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Class hierarchy Class hierarchy (inferred)

Class hierarchy: E-R_MODEL

- Thing
 - DATABASE_MANAGEMENT_SYSTEMS
 - ADVANCED_SQL
 - INDEXING_AND_HASHING
 - INTRODUCTION_TO_DBMS
 - DATA_ARCHITECTURE
 - DATA_MODELS
 - E-R_MODEL
 - attributes
 - entity
 - relation
 - VIEW_OF_DATA
 - RELATIONAL_MODEL
 - SQL

OntoGraf:

Search: contains Search Clear

```
graph LR; Thing --> DBMS[DATABASE_MANAGEMENT_SYSTEMS]; DBMS --> INTRODUCTION[INTRODUCTION_TO_DBMS]; INTRODUCTION --> ER[E-R_MODEL]; INTRODUCTION --> VIEW[VIEW_OF_DATA]; INTRODUCTION --> DATA[DATA_MODELS]; INTRODUCTION --> ARCH[DATA_ARCHITECTURE]; ER --> entity; ER --> relation; ER --> attributes;
```

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Active Ontology Entities Classes Object Properties Data Properties Annotation Properties Individuals OWLViz DL Query OntoGraf Ontology Differences SPARQL Query

Class hierarchy Class hierarchy (inferred)

Class hierarchy: VIEW_OF_DATA

- Thing
 - DATABASE_MANAGEMENT_SYSTEMS
 - ADVANCED_SQL
 - INDEXING_AND_HASHING
 - INTRODUCTION_TO_DBMS
 - DATA_ARCHITECTURE
 - DATA_MODELS
 - E-R_MODEL
 - VIEW_OF_DATA
 - logical_level
 - physical_level
 - view_level
 - RELATIONAL_MODEL
 - SQL

OntoGraf:

Search: contains Search Clear

```
graph LR; Thing --> DBMS[DATABASE_MANAGEMENT_SYSTEMS]; DBMS --> INTRODUCTION[INTRODUCTION_TO_DBMS]; INTRODUCTION --> E_R[E-R_MODEL]; INTRODUCTION --> VIEW_OF_DATA[VIEW_OF_DATA]; INTRODUCTION --> DATA_MODELS[DATA_MODELS]; INTRODUCTION --> DATA_ARCHITECTURE[DATA_ARCHITECTURE]; VIEW_OF_DATA --> logical_level; VIEW_OF_DATA --> view_level; VIEW_OF_DATA --> physical_level;
```

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Class hierarchy Class hierarchy (inferred)

Class hierarchy: RELATIONAL_MODEL

- Thing
 - DATABASE_MANAGEMENT_SYSTEMS
 - ADVANCED_SQL
 - INDEXING_AND_HASHING
 - INTRODUCTION_TO_DBMS
 - RELATIONAL_MODEL
 - RELATIONAL_ALGEBRA
 - RELATIONAL_CALCULUS
 - SQL

OntoGraf:

Search: contains Search Clear

```
graph LR; Thing --> DBMS[DATABASE_MANAGEMENT_SYSTEMS]; DBMS --> RELATIONAL_MODEL; RELATIONAL_MODEL --> RELATIONAL_CALCULUS; RELATIONAL_MODEL --> RELATIONAL_ALGEBRA;
```

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Active Ontology Entities Classes Object Properties Data Properties Annotation Properties Individuals OWLViz DL Query OntoGraf Ontology Differences SPARQL Query

Class hierarchy Class hierarchy (inferred)

Class hierarchy: RELATIONAL_ALGEBRA

- Thing
 - DATABASE_MANAGEMENT_SYSTEMS
 - ADVANCED_SQL
 - INDEXING_AND_HASHING
 - INTRODUCTION_TO_DBMS
 - RELATIONAL_MODEL
 - RELATIONAL_ALGEBRA
 - carterian_product
 - projection
 - Selection
 - set_difference
 - union
 - RELATIONAL_CALCULUS
 - SQL

OntoGraf:

Search: contains Search Clear

```
graph LR; Thing --> DBMS[DATABASE_MANAGEMENT_SYSTEMS]; DBMS --> RELATIONAL_MODEL; RELATIONAL_MODEL --> RELATIONAL_CALCULUS; RELATIONAL_MODEL --> RELATIONAL_ALGEBRA; RELATIONAL_ALGEBRA --> Selection; RELATIONAL_ALGEBRA --> set_difference; RELATIONAL_ALGEBRA --> union; RELATIONAL_ALGEBRA --> carterian_product; RELATIONAL_ALGEBRA --> projection;
```

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Class hierarchy Class hierarchy (inferred)

Class hierarchy: RELATIONAL_CALCULUS

- Thing
 - DATABASE_MANAGEMENT_SYSTEMS
 - ADVANCED_SQL
 - INDEXING_AND_HASHING
 - INTRODUCTION_TO_DBMS
 - RELATIONAL_MODEL
 - RELATIONAL_ALGEBRA
 - RELATIONAL_CALCULUS
 - 'Domain_relational_calculus(DR...
 - 'Tupe_relational_calculus_(TRC...
 - SQL

OntoGraf:

Search: contains Search Clear

```
graph LR; Thing((Thing)) --> DBMS[DATABASE_MANAGEMENT_SYSTEMS]; DBMS --> RM[RELATIONAL_MODEL]; RM --> RC[RELATIONAL_CALCULUS]; RM --> RA[RELATIONAL_ALGEBRA]; RC --> DRC["Domain_relational_calculus(DR..."]; RC --> TRC["Tupe_relational_calculus_(TRC..."];
```

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Class hierarchy Class hierarchy (inferred)

Class hierarchy: SQL

- Thing
 - DATABASE_MANAGEMENT_SYSTEMS
 - ADVANCED_SQL
 - INDEXING_AND_HASHING
 - INTRODUCTION_TO_DBMS
 - RELATIONAL_MODEL
 - SQL
 - BASIC_STRUCTURE
 - NESTED_SUB_QUERIES

OntoGraf:

Search: contains Search Clear

```
graph LR; Thing --> DBMS[DATABASE_MANAGEMENT_SYSTEMS]; DBMS --> SQL; SQL --> NSS[NESTED_SUB_QUERIES]; SQL --> BS[BASIC_STRUCTURE];
```

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Active Ontology Entities Classes Object Properties Data Properties Annotation Properties Individuals OWLViz DL Query OntoGraf Ontology Differences SPARQL Query

Class hierarchy Class hierarchy (inferred)

Class hierarchy: BASIC_STRUCTURE

- Thing
 - DATABASE_MANAGEMENT_SYSTEMS
 - ADVANCED_SQL
 - INDEXING_AND_HASHING
 - INTRODUCTION_TO_DBMS
 - RELATIONAL_MODEL
 - SQL
 - BASIC_STRUCTURE
 - from
 - select
 - where
 - NESTED_SUB_QUERIES

OntoGraf:

Search: contains Search Clear

```
graph LR; Thing --> DBMS[DATABASE_MANAGEMENT_SYSTEMS]; DBMS --> SQL; SQL --> NSQ[NESTED_SUB_QUERIES]; SQL --> BS[BASIC_STRUCTURE]; NSQ --> where; BS --> select; BS --> from;
```

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Active Ontology Entities Classes Object Properties Data Properties Annotation Properties Individuals OWLViz DL Query OntoGraf Ontology Differences SPARQL Query

Class hierarchy Class hierarchy (inferred)

Class hierarchy: 32_levels

- Thing
 - DATABASE_MANAGEMENT_SYSTEMS
 - ADVANCED_SQL
 - INDEXING_AND_HASHING
 - INTRODUCTION_TO_DBMS
 - RELATIONAL_MODEL
 - SQL
 - BASIC_STRUCTURE
 - NESTED_SUB_QUERIES
 - 32_levels
 - delete
 - insert
 - update

OntoGraf:

Search: contains Search Clear

```
graph LR; Thing((Thing)) --> DBMS[DATABASE_MANAGEMENT_SYSTEMS]; DBMS --> SQL[SQL]; SQL --> NSQ[NESTED_SUB_QUERIES]; SQL --> BS[BASIC_STRUCTURE]; NSQ --> 32_levels[32_levels]; 32_levels --> delete[delete]; 32_levels --> update[update]; 32_levels --> insert[insert];
```

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