



LOG8505E - Model Driven Software Engineering

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DELIVERABLE 2

System Capability Diagram DSML

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1 Deliverable 2

1.1 Source code

Github: <https://github.com/Palmaa/LOG8505E-project>

Sample instances in: [link](#)

1.2 Sample queries and Results

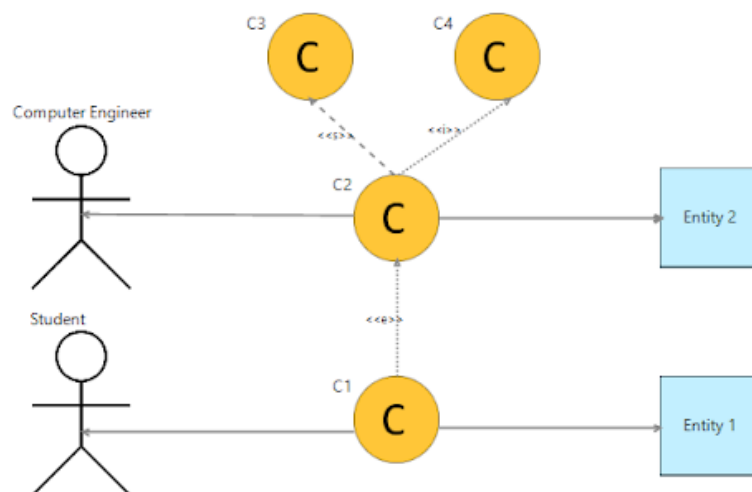


Figura 1.1: Instance model queried

Queries

1. Number of Capabilities

```
aql:self.supports->select(e | e.ocIsTypeOf(capability::Capability))->size()
```

Expression

```
aql:self.supports->select(e | e.ocIsTypeOf(capability::Capability))->size()
```

Evaluation Result

4

2. Number of Actors

```
aql: self.supports->select(e | e.ocllsTypeOf(capability::Actor))->size()
```

Expression

```
aql:self.supports->select(e | e.ocllsTypeOf(capability::Actor))->size()
```

Evaluation Result

2

3. Number of Entities

```
aql: self.supports->select(e | e.ocllsTypeOf(capability::Entity))->size()
```

Expression

```
aql:self.supports->select(e | e.ocllsTypeOf(capability::Entity))->size()
```

Evaluation Result

2

4. Capabilities That Don't Involve Entities

```
aql: self.supports->select(e | e.ocllsTypeOf(capability::Capability))
->select(c | c.involves->select(e | e.ocllsTypeOf(capability::Entity))->isEmpty())
```

Expression

```
aql:self.supports->select(e | e.ocllsTypeOf(capability::Capability))->select(c | c.involves->select(e | e.ocllsTypeOf(capability::Entity))->isEmpty())
```

Evaluation Result

- Capability C3
- Capability C4

5. Capabilities Related to Another Capability

```
aql: self.supports->select(e | e.ocllsTypeOf(capability::Capability))
->reject(c | c.includes->isEmpty() and c.extends->isEmpty()
and c.isExtendedBy->isEmpty() and c.isIncludedIn->isEmpty()
and c.specializes->isEmpty() and c.isSpecializedBy->isEmpty())
```

Expression

```
aql:self.supports->select(e | e.ocllsTypeOf(capability::Capability))->reject(c | c.includes->isEmpty() and c.extends->isEmpty() and
c.isExtendedBy->isEmpty() and c.isIncludedIn->isEmpty() and c.specializes->isEmpty() and c.isSpecializedBy->isEmpty())
```

Evaluation Result

- Capability C1
- Capability C2
- Capability C3
- Capability C4


6. Elements with Big Names

```
aql:self.supports->reject(c | c.name.size() <= 10)
```

Expression

```
aql:self.supports->reject(c | c.name.size() <= 10)
```

Evaluation Result

 Actor Computer Engineer



7. Actors Related to Less Than 5 Capabilities

```
aql:self.supports->select(e | e.oclIsTypeOf(capability::Actor))
->select(a | a.isInvolvedIn->size() < 5)
```

Expression

```
aql:self.supports->select(e | e.oclIsTypeOf(capability::Actor))->select(a | a.isInvolvedIn->size() < 5)
```

Evaluation Result

 Actor Student
 Actor Computer Engineer