

# Manual implementation of DCP on Be, True and Equal.

**Initialization:**

Initial Concept C<sub>i,j,k</sub> = “Be”.  
No maximum depth level N.  
No maximum number of subconcepts per concept M.  
C<sub>p</sub> = [Be\_0.1.0], Ca = [], W = [], Nr = [], QC = []

**Process:**

1.  
C<sub>p</sub> = [Be\_0.1.0], Ca = [], W = [], Nr = [], QC = []

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1.  
C<sub>p</sub> = [], Ca = [Be\_0.1.0], W = [Occur\_1.1.1, Exist\_1.2.1], Nr = [], QC = []  
2.  
C<sub>p</sub> = [Occur\_1.1.1, Exist\_1.2.1], Ca = [Be\_0.1.0], W = [], Nr = [], QC = []

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1.  
C<sub>p</sub> = [], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1], W = [Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2], Nr = [], QC = []  
2.  
C<sub>p</sub> = [Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1], W = [], Nr = [], QC = []

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1.  
C<sub>p</sub> = [], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2], W = [Exist\_3.1.1, Be\_3.2.1, Exist\_3.3.2, Objective\_3.4.2, Exist\_3.5.3, Objective\_3.6.3, Compliance\_3.7.4], Nr = [], QC = []  
2.  
C<sub>p</sub> = [], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2], W = [Exist\_3.1.1, Be\_3.2.1, Exist\_3.3.2, Objective\_3.4.2, Exist\_3.5.3, Objective\_3.6.3, Compliance\_3.7.4], Nr = [], QC = []  
3.

Cp = [], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2], W = [Exist\_3.1.1, Be\_3.2.1, Exist\_3.3.2, Objective\_3.4.2, Exist\_3.5.3, Objective\_3.6.3, Compliance\_3.7.4], Nr = [], QC = [], Bt = [{Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, {Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}]

4.

Cp = [Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2], W = [], Nr = [Be\_3.2.1, Exist\_3.5.3], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}]

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Cp = [], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4], W = [Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Object\_4.5.4, Object\_4.6.6, Equal\_4.7.7], Nr = [Be\_3.2.1, Exist\_3.5.3], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}]

2.

Cp = [], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4], W = [Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Object\_4.5.4, Object\_4.6.6, Equal\_4.7.7], Nr = [Be\_3.2.1, Exist\_3.5.3], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6]

3.

Cp = [Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Equal\_4.7.7], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4], W = [], Nr = [Be\_3.2.1, Exist\_3.5.3], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6]

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1.

Cp = [], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4, Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Equal\_4.7.7], W = [Exist\_5.1.1, Objective\_5.2.1, Compliance\_5.3.2, Exist\_5.4.3, Objective\_5.5.3, Compliance\_5.6.4, Quantity\_5.7.6], Nr = [Be\_3.2.1, Exist\_3.5.3], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6]

2.

Cp = [], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4, Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Equal\_4.7.7], W = [Exist\_5.1.1, Objective\_5.2.1, Compliance\_5.3.2, Exist\_5.4.3, Objective\_5.5.3, Compliance\_5.6.4, Quantity\_5.7.6], Nr = [Be\_3.2.1, Exist\_3.5.3], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6], Bt = [{Exist\_3.1.1, Real\_4.1.1, Exist\_5.1.1}, {Exist\_3.3.2, Real\_4.3.3, Exist\_5.4.3}]

3.

Cp = [Objective\_5.2.1, Compliance\_5.3.2, Objective\_5.5.3, Compliance\_5.6.4, Quantity\_5.7.6], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4, Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Equal\_4.7.7], W = [], Nr = [Be\_3.2.1, Exist\_3.5.3, Object\_4.5.4, Object\_4.6.6, Exist\_5.1.1, Exist\_5.4.3], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6, [{Exist\_3.1.1, Real\_4.1.1, Exist\_5.1.1}, {Exist\_3.3.2, Real\_4.3.3, Exist\_5.4.3}]]

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1.

Cp = [], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4, Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Equal\_4.7.7, Objective\_5.2.1, Compliance\_5.3.2, Objective\_5.5.3, Compliance\_5.6.4, Quantity\_5.7.6], W = [Object\_6.1.2, Equal\_6.2.3, Object\_6.3.5, Equal\_6.4.6, Measure\_6.5.7], Nr = [Be\_3.2.1, Exist\_3.5.3, Object\_4.5.4, Object\_4.6.6, Exist\_5.1.1, Exist\_5.4.3], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6, [{Exist\_3.1.1, Real\_4.1.1, Exist\_5.1.1}, {Exist\_3.3.2, Real\_4.3.3, Exist\_5.4.3}]]

2.

Cp = [], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4, Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Equal\_4.7.7, Objective\_5.2.1, Compliance\_5.3.2, Objective\_5.5.3, Compliance\_5.6.4, Quantity\_5.7.6], W = [Object\_6.1.2, Equal\_6.2.3, Object\_6.3.5, Equal\_6.4.6, Measure\_6.5.7], Nr = [Be\_3.2.1, Exist\_3.5.3, Object\_4.5.4, Object\_4.6.6, Exist\_5.1.1, Exist\_5.4.3], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6, [{Exist\_3.1.1, Real\_4.1.1, Exist\_5.1.1}, {Exist\_3.3.2, Real\_4.3.3, Exist\_5.4.3}, Object\_6.1.2, Object\_6.3.5]]

3.

Cp = [Equal\_6.2.3, Equal\_6.4.6, Measure\_6.5.7], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4, Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Equal\_4.7.7, Objective\_5.2.1, Compliance\_5.3.2, Objective\_5.5.3, Compliance\_5.6.4, Quantity\_5.7.6], W = [], Nr = [Be\_3.2.1, Exist\_3.5.3, Object\_4.5.4, Object\_4.6.6, Exist\_5.1.1, Exist\_5.4.3, Object\_6.1.2, Object\_6.3.5], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6, [{Exist\_3.1.1, Real\_4.1.1, Exist\_5.1.1}, {Exist\_3.3.2, Real\_4.3.3, Exist\_5.4.3}, Object\_6.1.2, Object\_6.3.5]]

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1.

Cp = [], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4, Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Equal\_4.7.7, Objective\_5.2.1, Compliance\_5.3.2, Objective\_5.5.3, Compliance\_5.6.4, Quantity\_5.7.6, Equal\_6.2.3, Equal\_6.4.6, Measure\_6.5.7], W = [Quantity\_7.1.2, Quantity\_7.2.4, Quantity\_7.3.5, Unit\_7.4.5], Nr = [Be\_3.2.1, Exist\_3.5.3, Object\_4.5.4, Object\_4.6.6, Exist\_5.1.1, Exist\_5.4.3, Object\_6.1.2, Object\_6.3.5], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6, [{Exist\_3.1.1, Real\_4.1.1, Exist\_5.1.1}, {Exist\_3.3.2, Real\_4.3.3, Exist\_5.4.3}, Object\_6.1.2, Object\_6.3.5]]

2.

Cp = [], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4, Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Equal\_4.7.7, Objective\_5.2.1, Compliance\_5.3.2, Objective\_5.5.3, Compliance\_5.6.4, Quantity\_5.7.6, Equal\_6.2.3, Equal\_6.4.6, Measure\_6.5.7], W = [Quantity\_7.1.2, Quantity\_7.2.4, Quantity\_7.3.5, Unit\_7.4.5], Nr = [Be\_3.2.1, Exist\_3.5.3, Object\_4.5.4, Object\_4.6.6, Exist\_5.1.1, Exist\_5.4.3, Object\_6.1.2, Object\_6.3.5], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6, [{Exist\_3.1.1, Real\_4.1.1, Exist\_5.1.1}, {Exist\_3.3.2, Real\_4.3.3, Exist\_5.4.3}, Object\_6.1.2, Object\_6.3.5], Bt = [Quantity\_5.7.6, Measure\_6.5.7, Quantity\_7.3.5]

3.

Cp = [Quantity\_7.1.2, Quantity\_7.2.4, Unit\_7.4.5], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4, Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Equal\_4.7.7, Objective\_5.2.1, Compliance\_5.3.2, Objective\_5.5.3, Compliance\_5.6.4, Quantity\_5.7.6, Equal\_6.2.3, Equal\_6.4.6, Measure\_6.5.7], W = [], Nr = [Be\_3.2.1, Exist\_3.5.3, Object\_4.5.4, Object\_4.6.6, Exist\_5.1.1, Exist\_5.4.3, Object\_6.1.2, Object\_6.3.5, Quantity\_7.3.5], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6, [{Exist\_3.1.1, Real\_4.1.1, Exist\_5.1.1}, {Exist\_3.3.2, Real\_4.3.3, Exist\_5.4.3}, Object\_6.1.2, Object\_6.3.5, Quantity\_5.7.6, Measure\_6.5.7, Quantity\_7.3.5]

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1.

Cp = [], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4, Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Equal\_4.7.7, Objective\_5.2.1, Compliance\_5.3.2, Objective\_5.5.3, Compliance\_5.6.4, Quantity\_5.7.6, Equal\_6.2.3, Equal\_6.4.6, Measure\_6.5.7, Quantity\_7.1.2, Quantity\_7.2.4, Unit\_7.4.5], W = [Measure\_8.1.1, Measure\_8.2.2, Quantity\_8.3.4, Measure\_8.4.4], Nr = [Be\_3.2.1, Exist\_3.5.3, Object\_4.5.4, Object\_4.6.6, Exist\_5.1.1, Exist\_5.4.3, Object\_6.1.2, Object\_6.3.5, Quantity\_7.3.5], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6, [{Exist\_3.1.1, Real\_4.1.1, Exist\_5.1.1}, {Exist\_3.3.2, Real\_4.3.3, Exist\_5.4.3}, Object\_6.1.2, Object\_6.3.5, {Quantity\_5.7.6, Measure\_6.5.7, Quantity\_7.3.5}]

2.

Cp = [], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4, Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Equal\_4.7.7, Objective\_5.2.1, Compliance\_5.3.2, Objective\_5.5.3, Compliance\_5.6.4, Quantity\_5.7.6, Equal\_6.2.3, Equal\_6.4.6, Measure\_6.5.7, Quantity\_7.1.2, Quantity\_7.2.4, Unit\_7.4.5], W = [Measure\_8.1.1, Measure\_8.2.2, Quantity\_8.3.4, Measure\_8.4.4], Nr = [Be\_3.2.1, Exist\_3.5.3, Object\_4.5.4, Object\_4.6.6, Exist\_5.1.1, Exist\_5.4.3, Object\_6.1.2, Object\_6.3.5, Quantity\_7.3.5], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6, [{Exist\_3.1.1, Real\_4.1.1, Exist\_5.1.1}, {Exist\_3.3.2, Real\_4.3.3, Exist\_5.4.3}, Object\_6.1.2, Object\_6.3.5, {Quantity\_5.7.6, Measure\_6.5.7, Quantity\_7.3.5}], Bt = [Measure\_6.5.7, Unit\_7.4.5, Measure\_8.4.4], {Quantity\_5.7.6, Measure\_6.5.7, Unit\_7.4.5, Quantity\_8.3.4}]

3.

Cp = [Measure\_8.1.1, Measure\_8.2.2], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4, Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Equal\_4.7.7, Objective\_5.2.1, Compliance\_5.3.2, Objective\_5.5.3, Compliance\_5.6.4, Quantity\_5.7.6, Equal\_6.2.3, Equal\_6.4.6, Measure\_6.5.7, Quantity\_7.1.2, Quantity\_7.2.4, Unit\_7.4.5], W = [], Nr = [Be\_3.2.1, Exist\_3.5.3, Object\_4.5.4, Object\_4.6.6, Exist\_5.1.1, Exist\_5.4.3, Object\_6.1.2, Object\_6.3.5, Quantity\_7.3.5, Measure\_8.4.4, Quantity\_8.3.4], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6, [{Exist\_3.1.1, Real\_4.1.1, Exist\_5.1.1}, {Exist\_3.3.2, Real\_4.3.3, Exist\_5.4.3}, Object\_6.1.2, Object\_6.3.5, {Quantity\_5.7.6, Measure\_6.5.7, Quantity\_7.3.5}, {Measure\_6.5.7, Unit\_7.4.5, Measure\_8.4.4}, {Quantity\_5.7.6, Measure\_6.5.7, Unit\_7.4.5, Quantity\_8.3.4}]

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1.

Cp = [], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4, Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Equal\_4.7.7, Objective\_5.2.1, Compliance\_5.3.2, Objective\_5.5.3, Compliance\_5.6.4, Quantity\_5.7.6, Equal\_6.2.3, Equal\_6.4.6, Measure\_6.5.7, Quantity\_7.1.2, Quantity\_7.2.4, Unit\_7.4.5, Measure\_8.1.1, Measure\_8.2.2], W = [Unit\_9.1.1, Quantity\_9.2.1, Unit\_9.3.2, Quantity\_9.4.2], Nr = [Be\_3.2.1, Exist\_3.5.3, Object\_4.5.4, Object\_4.6.6, Exist\_5.1.1, Exist\_5.4.3, Object\_6.1.2, Object\_6.3.5, Quantity\_7.3.5, Measure\_8.4.4, Quantity\_8.3.4], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6, [{Exist\_3.1.1, Real\_4.1.1, Exist\_5.1.1}, {Exist\_3.3.2, Real\_4.3.3, Exist\_5.4.3}, Object\_6.1.2, Object\_6.3.5, {Quantity\_5.7.6, Measure\_6.5.7, Quantity\_7.3.5}, {Measure\_6.5.7, Unit\_7.4.5, Measure\_8.4.4}, {Quantity\_5.7.6, Measure\_6.5.7, Unit\_7.4.5, Quantity\_8.3.4}]

2.

Cp = [], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4, Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Equal\_4.7.7, Objective\_5.2.1, Compliance\_5.3.2, Objective\_5.5.3, Compliance\_5.6.4, Quantity\_5.7.6, Equal\_6.2.3, Equal\_6.4.6, Measure\_6.5.7, Quantity\_7.1.2, Quantity\_7.2.4, Unit\_7.4.5, Measure\_8.1.1, Measure\_8.2.2], W = [Unit\_9.1.1, Quantity\_9.2.1, Unit\_9.3.2, Quantity\_9.4.2], Nr = [Be\_3.2.1, Exist\_3.5.3, Object\_4.5.4, Object\_4.6.6, Exist\_5.1.1, Exist\_5.4.3, Object\_6.1.2, Object\_6.3.5, Quantity\_7.3.5, Measure\_8.4.4, Quantity\_8.3.4], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6, [{Exist\_3.1.1, Real\_4.1.1, Exist\_5.1.1}, {Exist\_3.3.2, Real\_4.3.3, Exist\_5.4.3}, Object\_6.1.2, Object\_6.3.5, {Quantity\_5.7.6, Measure\_6.5.7, Quantity\_7.3.5}, {Measure\_6.5.7, Unit\_7.4.5, Measure\_8.4.4}, {Quantity\_5.7.6, Measure\_6.5.7, Unit\_7.4.5, Quantity\_8.3.4}], Bt = [{Quantity\_7.1.2, Measure\_8.1.1, Quantity\_9.2.1}, {Quantity\_7.2.4, Measure\_8.2.2, Quantity\_9.4.2}]

3.

Cp = [Unit\_9.1.1, Unit\_9.3.2], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4, Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Equal\_4.7.7, Objective\_5.2.1, Compliance\_5.3.2, Objective\_5.5.3, Compliance\_5.6.4, Quantity\_5.7.6, Equal\_6.2.3, Equal\_6.4.6, Measure\_6.5.7, Quantity\_7.1.2, Quantity\_7.2.4, Unit\_7.4.5, Measure\_8.1.1, Measure\_8.2.2], W = [], Nr = [Be\_3.2.1, Exist\_3.5.3, Object\_4.5.4, Object\_4.6.6, Exist\_5.1.1, Exist\_5.4.3, Object\_6.1.2, Object\_6.3.5, Quantity\_7.3.5, Measure\_8.4.4, Quantity\_8.3.4, Quantity\_9.4.2,

Quantity\_9.2.1], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6, [{Exist\_3.1.1, Real\_4.1.1, Exist\_5.1.1}, {Exist\_3.3.2, Real\_4.3.3, Exist\_5.4.3}, Object\_6.1.2, Object\_6.3.5, {Quantity\_5.7.6, Measure\_6.5.7, Quantity\_7.3.5}, {Measure\_6.5.7, Unit\_7.4.5, Measure\_8.4.4}, {Quantity\_5.7.6, Measure\_6.5.7, Unit\_7.4.5, Quantity\_8.3.4}, {Quantity\_7.1.2, Measure\_8.1.1, Quantity\_9.2.1}, {Quantity\_7.2.4, Measure\_8.2.2, Quantity\_9.4.2}]

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1.

Cp = [], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4, Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Equal\_4.7.7, Objective\_5.2.1, Compliance\_5.3.2, Objective\_5.5.3, Compliance\_5.6.4, Quantity\_5.7.6, Equal\_6.2.3, Equal\_6.4.6, Measure\_6.5.7, Quantity\_7.1.2, Quantity\_7.2.4, Unit\_7.4.5, Measure\_8.1.1, Measure\_8.2.2, Unit\_9.1.1, Unit\_9.3.2], W = [Quantity\_10.1.1, Measure\_10.2.1, Quantity\_10.3.3, Measure\_10.4.3], Nr = [Be\_3.2.1, Exist\_3.5.3, Object\_4.5.4, Object\_4.6.6, Exist\_5.1.1, Exist\_5.4.3, Object\_6.1.2, Object\_6.3.5, Quantity\_7.3.5, Measure\_8.4.4, Quantity\_8.3.4, Quantity\_9.4.2, Quantity\_9.2.1], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6, [{Exist\_3.1.1, Real\_4.1.1, Exist\_5.1.1}, {Exist\_3.3.2, Real\_4.3.3, Exist\_5.4.3}, Object\_6.1.2, Object\_6.3.5, {Quantity\_5.7.6, Measure\_6.5.7, Quantity\_7.3.5}, {Measure\_6.5.7, Unit\_7.4.5, Measure\_8.4.4}, {Quantity\_5.7.6, Measure\_6.5.7, Unit\_7.4.5, Quantity\_8.3.4}, {Quantity\_7.1.2, Measure\_8.1.1, Quantity\_9.2.1}, {Quantity\_7.2.4, Measure\_8.2.2, Quantity\_9.4.2}]

2.

Cp = [], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4, Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Equal\_4.7.7, Objective\_5.2.1, Compliance\_5.3.2, Objective\_5.5.3, Compliance\_5.6.4, Quantity\_5.7.6, Equal\_6.2.3, Equal\_6.4.6, Measure\_6.5.7, Quantity\_7.1.2, Quantity\_7.2.4, Unit\_7.4.5, Measure\_8.1.1, Measure\_8.2.2, Unit\_9.1.1, Unit\_9.3.2], W = [Quantity\_10.1.1, Measure\_10.2.1, Quantity\_10.3.3, Measure\_10.4.3], Nr = [Be\_3.2.1, Exist\_3.5.3, Object\_4.5.4, Object\_4.6.6, Exist\_5.1.1, Exist\_5.4.3, Object\_6.1.2, Object\_6.3.5, Quantity\_7.3.5, Measure\_8.4.4, Quantity\_8.3.4, Quantity\_9.4.2, Quantity\_9.2.1], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6, [{Exist\_3.1.1, Real\_4.1.1, Exist\_5.1.1}, {Exist\_3.3.2, Real\_4.3.3, Exist\_5.4.3}, Object\_6.1.2, Object\_6.3.5, {Quantity\_5.7.6, Measure\_6.5.7, Quantity\_7.3.5}, {Measure\_6.5.7, Unit\_7.4.5, Measure\_8.4.4}, {Quantity\_5.7.6, Measure\_6.5.7, Unit\_7.4.5, Quantity\_8.3.4}, {Quantity\_7.1.2, Measure\_8.1.1, Quantity\_9.2.1}, {Quantity\_7.2.4, Measure\_8.2.2, Quantity\_9.4.2}], Bt = [{Quantity\_7.1.2, Measure\_8.1.1, Unit\_9.1.1, Quantity\_10.1.1}, {Measure\_8.1.1, Unit\_9.1.1, Measure\_10.2.1}, {Quantity\_7.2.4, Measure\_8.2.2, Unit\_9.3.2, Quantity\_10.3.3}, {Measure\_8.2.2, Unit\_9.3.2, Measure\_10.4.3}]

3.

Cp = [], Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4, Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Equal\_4.7.7, Objective\_5.2.1, Compliance\_5.3.2, Objective\_5.5.3, Compliance\_5.6.4, Quantity\_5.7.6, Equal\_6.2.3, Equal\_6.4.6, Measure\_6.5.7, Quantity\_7.1.2, Quantity\_7.2.4, Unit\_7.4.5, Measure\_8.1.1, Measure\_8.2.2, Unit\_9.1.1, Unit\_9.3.2], W = [], Nr = [Be\_3.2.1, Exist\_3.5.3, Object\_4.5.4, Object\_4.6.6, Exist\_5.1.1, Exist\_5.4.3, Object\_6.1.2, Object\_6.3.5, Quantity\_7.3.5, Measure\_8.4.4, Quantity\_8.3.4, Quantity\_9.4.2, Quantity\_9.2.1, Measure\_10.4.3, Quantity\_10.3.3, Measure\_10.2.1, Quantity\_10.1.1], QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1}, {Exist\_1.2.1, Real\_2.3.2, Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6, [{Exist\_3.1.1, Real\_4.1.1, Exist\_5.1.1}, {Exist\_3.3.2, Real\_4.3.3, Exist\_5.4.3}, Object\_6.1.2, Object\_6.3.5, {Quantity\_5.7.6, Measure\_6.5.7, Quantity\_7.3.5}, {Measure\_6.5.7, Unit\_7.4.5, Measure\_8.4.4}, {Quantity\_5.7.6, Measure\_6.5.7, Unit\_7.4.5, Quantity\_8.3.4}, {Quantity\_7.1.2, Measure\_8.1.1, Quantity\_9.2.1}, {Quantity\_7.2.4, Measure\_8.2.2, Quantity\_9.4.2}], Bt = [{Quantity\_7.1.2, Measure\_8.1.1, Unit\_9.1.1, Quantity\_10.1.1}, {Measure\_8.1.1, Unit\_9.1.1, Measure\_10.2.1}, {Quantity\_7.2.4, Measure\_8.2.2, Unit\_9.3.2, Quantity\_10.3.3}, {Measure\_8.2.2, Unit\_9.3.2, Measure\_10.4.3}]

,Quantity\_7.3.5}, {Measure\_6.5.7,Unit\_7.4.5,Measure\_8.4.4},{Quantity\_5.7.6,Measure\_6.5.7,Unit\_7.4.5,Quantity\_8.3.4}{Quantity\_7.1.2,Measure\_8.1.1,Quantity\_9.2.1}, {Quantity\_7.2.4,Measure\_8.2.2,Quantity\_9.4.2},{Quantity\_7.1.2,Measure\_8.1.1,Unit\_9.1.1,Quantity\_10.1.1} , {Measure\_8.1.1,Unit\_9.1.1,Measure\_10.2.1} ,{Quantity\_7.2.4, Measure\_8.2.2,Unit\_9.3.2,Quantity\_10.3.3},{Measure\_8.2.2,Unit\_9.3.2,Measure\_10.4.3}]

## Output

Ca = [Be\_0.1.0, Occur\_1.1.1, Exist\_1.2.1, Happen\_2.1.1, Real\_2.2.1, Real\_2.3.2, True\_2.4.2, Exist\_3.1.1, Exist\_3.3.2, Objective\_3.4.2, Objective\_3.6.3, Compliance\_3.7.4, Real\_4.1.1, True\_4.2.1, Real\_4.3.3, True\_4.4.3, Equal\_4.7.7, Objective\_5.2.1, Compliance\_5.3.2, Objective\_5.5.3, Compliance\_5.6.4, Quantity\_5.7.6, Equal\_6.2.3, Equal\_6.4.6, Measure\_6.5.7, Quantity\_7.1.2, Quantity\_7.2.4, Unit\_7.4.5, Measure\_8.1.1, Measure\_8.2.2, Unit\_9.1.1, Unit\_9.3.2]

QC = [{Be\_0.1.0, Occur\_1.1.1, Happen\_2.1.1, Be\_3.2.1},{Exist\_1.2.1, Real\_2.3.2,Exist\_3.5.3}, Object\_4.5.4, Object\_4.6.6, [{Exist\_3.1.1,Real\_4.1.1,Exist\_5.1.1},{ Exist\_3.3.2, Real\_4.3.3,Exist\_5.4.3}, Object\_6.1.2, Object\_6.3.5, {Quantity\_5.7.6,Measure\_6.5.7,Quantity\_7.3.5}, {Measure\_6.5.7,Unit\_7.4.5,Measure\_8.4.4},{Quantity\_5.7.6,Measure\_6.5.7,Unit\_7.4.5, Quantity\_8.3.4}{Quantity\_7.1.2,Measure\_8.1.1,Quantity\_9.2.1}, {Quantity\_7.2.4,Measure\_8.2.2,Quantity\_9.4.2},{Quantity\_7.1.2,Measure\_8.1.1,Unit\_9.1.1,Quantity\_10.1.1} , {Measure\_8.1.1,Unit\_9.1.1,Measure\_10.2.1} ,{Quantity\_7.2.4, Measure\_8.2.2,Unit\_9.3.2,Quantity\_10.3.3},{Measure\_8.2.2,Unit\_9.3.2,Measure\_10.4.3}]

Simplifying, the resulting Conceptual Quarks after applying DCP on Be, True and Equality are:

**QC [{Be,Occur,Happen}, {Exist,Real}, Object, {Quantity,Measure,Unit}, {Quantity, Measure}]**