CLASH OF COMPLIANCE

Natural language processing ruleset generator

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Neuroject SpeakAEC AEC Hackathon

CLASH OF COMPLIANCE

The Problem

>>> Problems after and during construction caused by missing regulatory compliance control of design.

Non-compliant design/building with Local regulations

Non-compliant design/building with tender materials

CLASH OF COMPLIANCE

Reasons:

>>> Narrow window of design completion before start of construction

>>> Lack of knowledge of BIM coordination team on regulatory compliance

>>> Lack of knowledge of designers on local regulations when the project is abroad.

>>> Large scale of data to be processed and checked.

>>> Missing lesson learned database which is easily readable.

The process of our solution:

REGULATION
TENDER, STANDARDS

// Text

CLASH OF COMPLIANCE
NATURAL LANGUAGE PROCESSING RULESET GENERATOR

// Solibri ruleset through API

SOLIBRI
MODEL CHECKER

CLASH OF COMPLIANCE

How it works:

Regulations

Aluminum studs in plasterboard walls should have maximum distance of 40cm to ensure stiffness of the wall.

Object: Studs in walls
Criteria: Maximum distance
Ddistance: 40cm

Solibri API

Set a rule for Clash detection with following criteria extracted from regulation

BIM object: Stud – Aluminum – 12cm
Criteria: Maximum distance
Ddistance: 40cm

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Natural language automation for your projects

Slots	Type	Label	
Aluminium studs in plasterboard walls should have maximum distance of 40cm to ensure stiffness of the wall	2	regulation	Edit
what is the object ?	3	object	Edit
How should you place the object ?	3	criteria	Edit
what is the maximum distance ?	3	distance	Edit
The project has walls made with aluminium studs every 80 cm	2	project	Edit
What is the distance between each aluminium studs in the project ?	3	measure	Edit
measure < distance	5	check	Edit
We checked the project for regulation	1	report	Edit
Aluminium studs	4	object	Edit
maximum distance of 40cm	4	criteria	Edit
40cm	4	distance	Edit

Solibri Ruleset Criteria

PARAMETERS

Severity Parameters

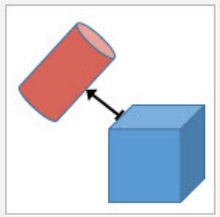
Distance Calculation

Checked Distance to Target Component

Shortest Distance Between Shapes

Allowed Maximum Distance 3 000,0 mm

Required Minimum Distance 3 000,0 mm



Use Door Swing in Distance Calculation

Space or Space Group Containment

Space or Space Group Containment: Ignore Space or Space Group

Space Group Type

Space Group

Source Component

Source Components to be Checked

State	Component	Property	Operator	Value
Include	Any	(Classification...	Matches	Fresh Air Valve

Target Component

Target Components to be Checked

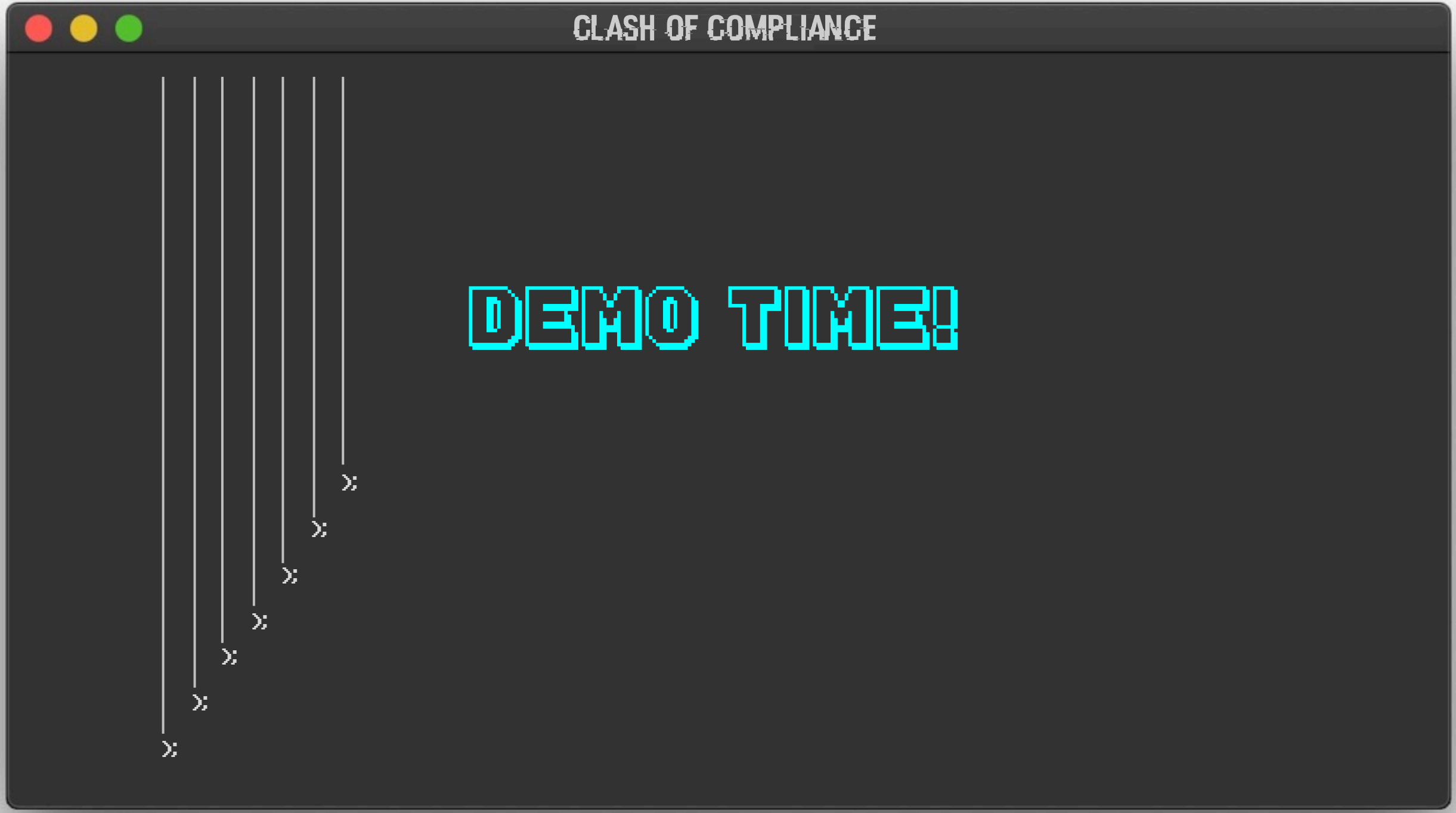
State	Component	Property	Operator	Value
Include	Any	(Classificati...	Matches	Outlet Air V...

Minimum Number 1

No-code template based development

>>> Java based template for ruleset definition.

>>> Once NLP extract the criteria, ruleset is being created automatically.


CLASH OF COMPLIANCE
DEMO TIME!