
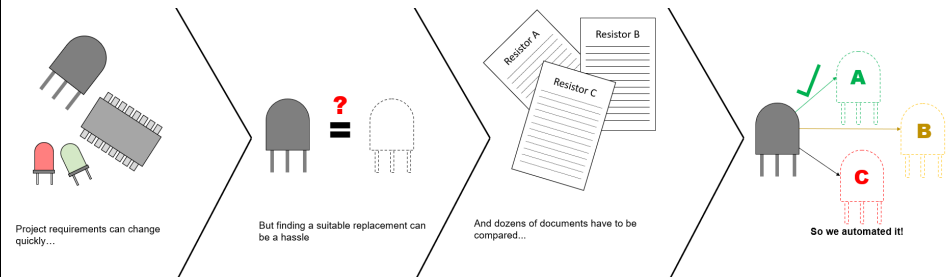


AMOS WS21 Project 6

Explainable Similarity Detector

Project name	Explainable Similarity Detector
Project mission	The mission of this project is to utilize the machine learning algorithm given by Siemens to find functionally similar electronic components. This is supposed to be given based on one or more Component and with the help of filters. However, functionalities that cannot be completed by the end of the project should be prepared for later implementation (as Mock-Up).
Industry partner	Siemens
Team logo	
Project summary	In this project, in cooperation with our industrial partner Siemens, we worked on a program for finding functionally similar and thus interchangeable components. Finding these similarities should be based on a machine learning model that although did not work as initially expected. However, all necessary interfaces are already implemented for later implementation. The program offers various comfort functions such as the easy creation of filters and the ability to directly compare component properties.
Project illustration	 <p>The illustration depicts a four-stage process for finding component replacements:</p> <ol style="list-style-type: none"> Stage 1: Shows various electronic components (resistors, capacitors, integrated circuits). Text: "Project requirements can change quickly..." Stage 2: Shows a component with a red question mark and an equals sign next to a dashed outline of the same component. Text: "But finding a suitable replacement can be a hassle" Stage 3: Shows three documents labeled "Resistor A", "Resistor B", and "Resistor C". Text: "And dozens of documents have to be compared..." Stage 4: Shows a component being compared to three options labeled A, B, and C. Option A is highlighted with a green checkmark. Text: "So we automated It!"

SIMILARITY DETECTOR

Similarity Search

At this point, you can create a new search to find similar components. Use the filter function to narrow down the result set more precisely beforehand.

Component Type

Capacitors

Component Name

Capacitor_21

Search Component

Filters (3 Applied)

New Filter

Attribute

Operator

Select Operator

Value

+

Currently Added Filters:

Attribute	Operator	Value	
height	> (greater than)	37.88721650	<div></div> <div></div>
height	< (less than)	100	<div></div> <div></div>
price	≤ (less or equals than)	0.02617	<div></div> <div></div>

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Remove all filters

Search Results For ID 21

Start Similarity Search

Properties

Request Duration (in s)

0.61

Request URL

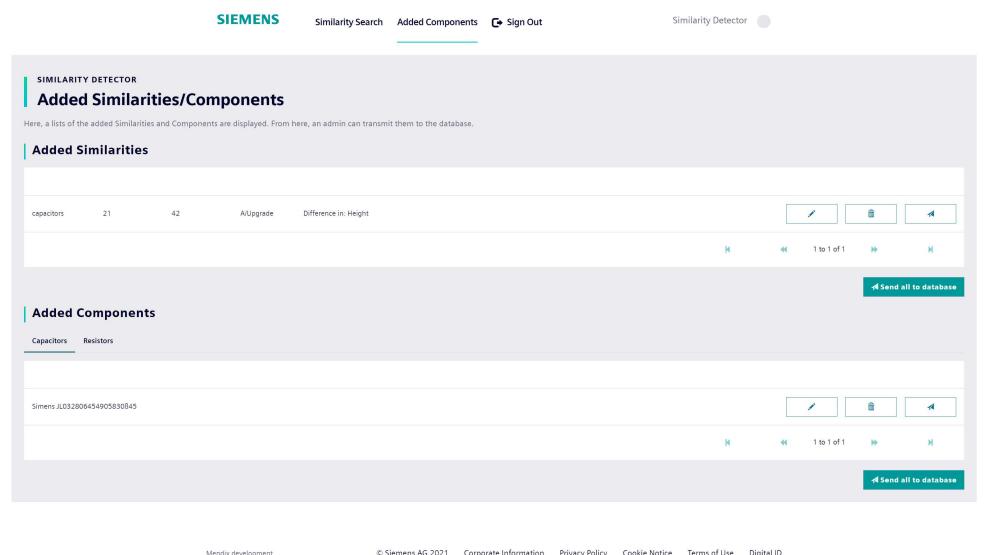
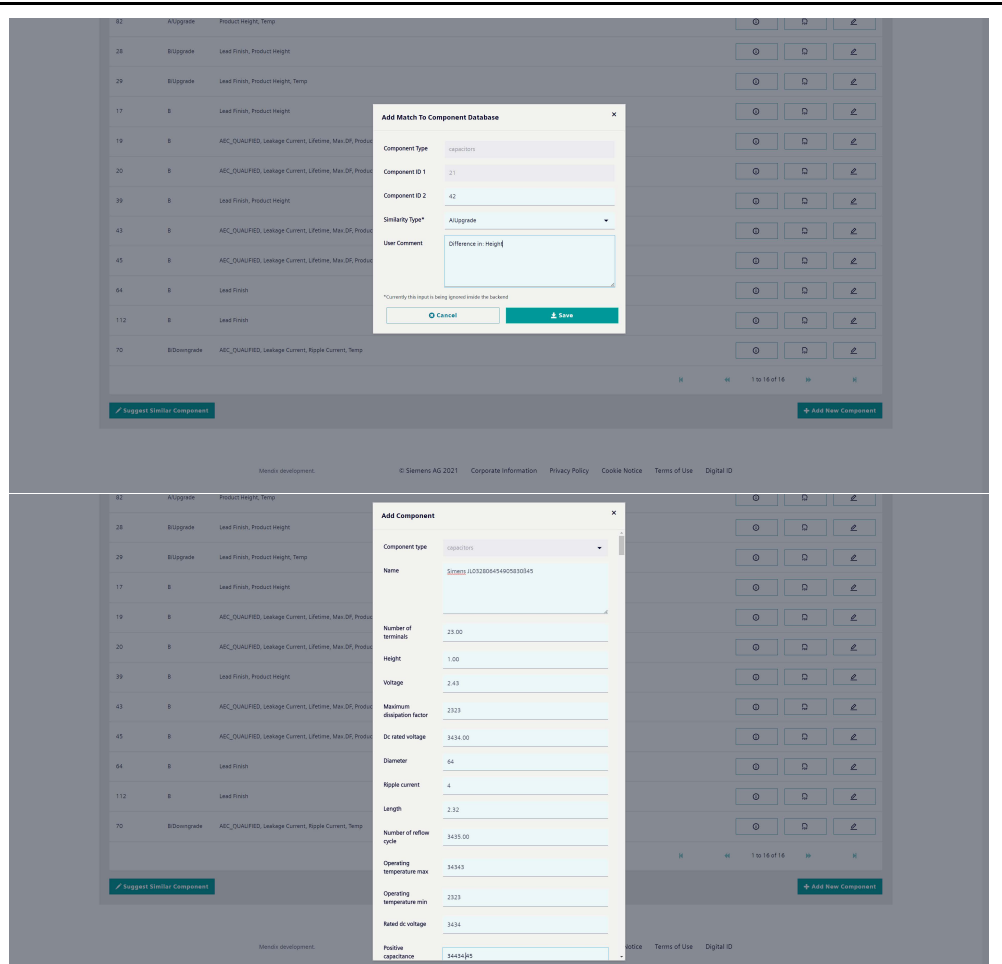
https://api.similarity-detector.azure-api.net/v1/componentTypes/capacitors/21/similarities?referenceIdAsString=true&ordering-type&height_gte=37.88721650&height_lte=100&price_lte=0.02617

32	A/Upgrade	Product Height	<div></div> <div></div> <div></div>
33	A/Upgrade	Product Height, Temp	<div></div> <div></div> <div></div>
80	A/Upgrade	Product Height	<div></div> <div></div> <div></div>
81	A/Upgrade	Product Height, Temp	<div></div> <div></div> <div></div>
82	A/Upgrade	Product Height, Temp	<div></div> <div></div> <div></div>
28	B/Upgrade	Lead Finish, Product Height	<div></div> <div></div> <div></div>
29	B/Upgrade	Lead Finish, Product Height, Temp	<div></div> <div></div> <div></div>
17	B	Lead Finish, Product Height	<div></div> <div></div> <div></div>
19	B	AEC_QUALIFIED, Leakage Current, Lifetime, Max.DF, Product Height, Ripple Current, Temp	<div></div> <div></div> <div></div>
20	B	AEC_QUALIFIED, Leakage Current, Lifetime, Max.DF, Product Height, Ripple Current	<div></div> <div></div> <div></div>
39	B	Lead Finish, Product Height	<div></div> <div></div> <div></div>
43	B	AEC_QUALIFIED, Leakage Current, Lifetime, Max.DF, Product Height, Ripple Current, Temp	<div></div> <div></div> <div></div>
45	B	AEC_QUALIFIED, Leakage Current, Lifetime, Max.DF, Product Height, Ripple Current, Temp	<div></div> <div></div> <div></div>
64	B	Lead Finish	<div></div> <div></div> <div></div>
112	B	Lead Finish	<div></div> <div></div> <div></div>
70	B/Downgrade	AEC_QUALIFIED, Leakage Current, Ripple Current, Temp	<div></div> <div></div> <div></div>

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Suggest Similar Component

Add New Component



Project repository

<https://github.com/amosproj/amos2021ws06-exp-similarity-detector>