Welcome back from afternoon tea

Jason Ridley

Transposing and conquering excel data sources with a dynamic twist

Featuring

FME AttributeExploder

Supported by the attribute transformer '*A-Team*': joining forces for repeated application on excel and flat data – with known and unknown data schemas

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Introducing the A-Team

A popular action-adventure tv series where the team follow a formulaic plot to help underdogs OR, in FME, Individual specialist transformers operating as a unit to overcome the challenges of spreadsheet data

- Hannibal Smith – team lead, tactician, mission mastermind and master of disguise

- Templeton Peck "Face" – logistics and obtainer

- B.A. – Mechanic and Mr Fix-It who can make just about anything from old parts

- H.M. Murdoch – Pilot (communicates with invisible characters)

The Mission:

Breaking the mold on working with spreadsheet data sources, with a bang!
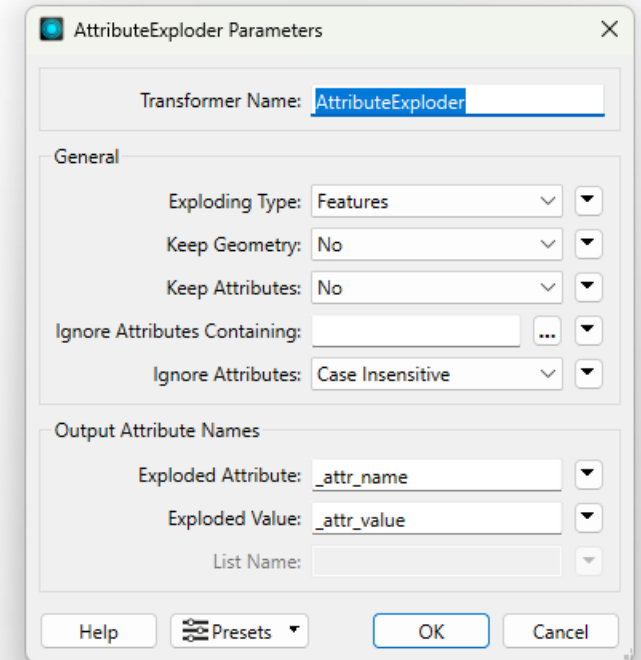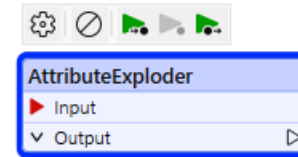
- AEC industry, among others, is hooked on spreadsheets!

- Key Challenge: turning "flat" and "dirty" data into usable tabular record structures to then join and connect with other data sources

- Typical sheet supply is configured for human consumption, not for computers

- FME Solution: Apply as one off ad-hoc applications or generate (automated) uniform, repeatable results – with consistent cleaned datasets output as schemas or connecting to other data streams

- Future options for CUSTOM TRANSFORMER application (Thanks Chris)

Team Members Specific Roles

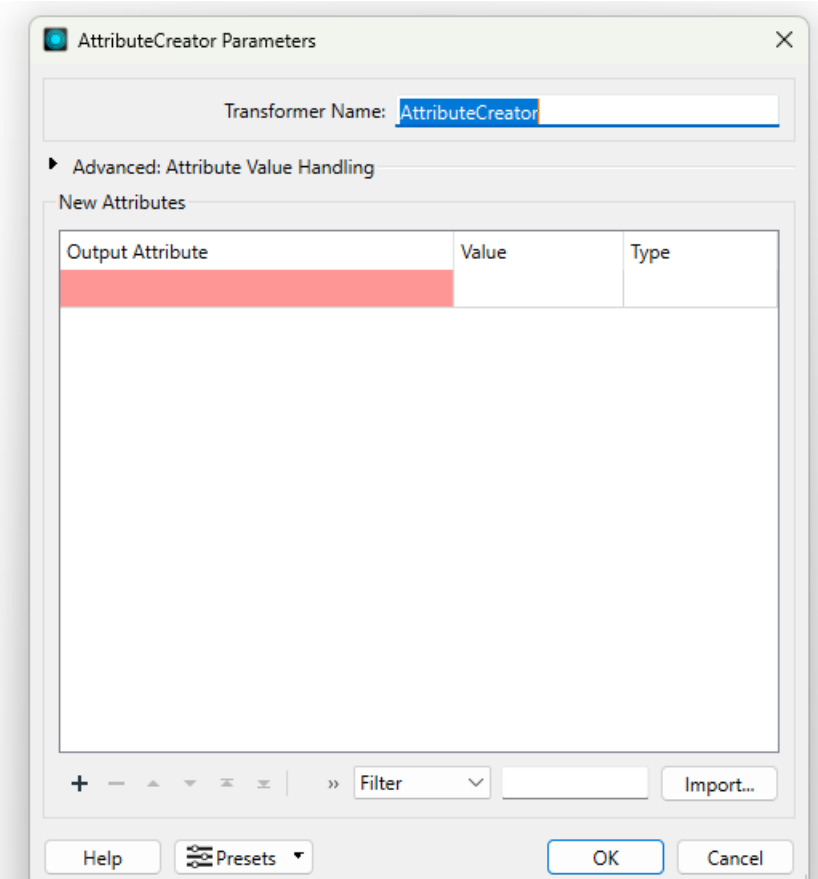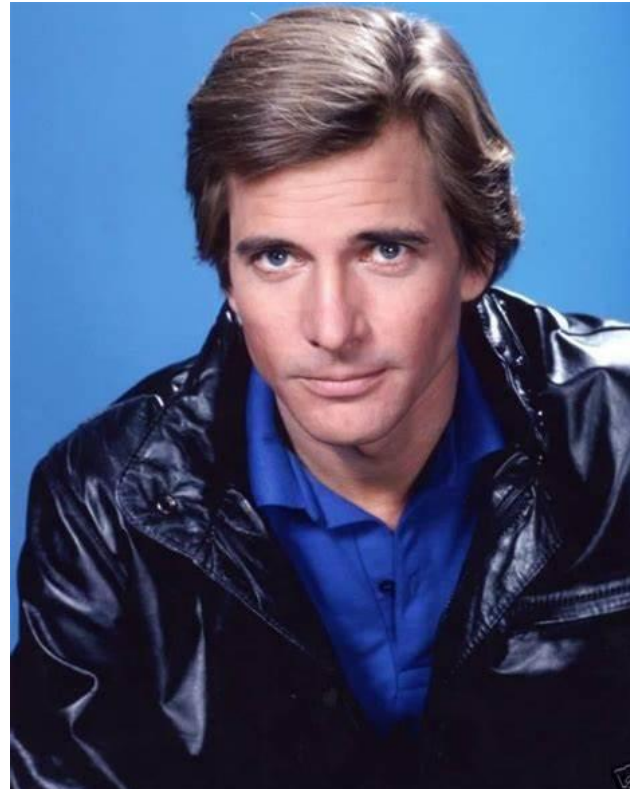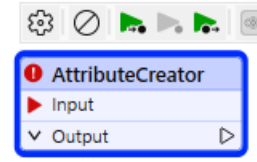ex·plo·sion: a sudden increase in amount or extent

- Hannibal Smith: Attribute Exploder – takes a row and blows it up into many pieces: relative to the number of rows and attributes in the data set. Sets the fuse and kicks off the mission

Team Members Specific Roles

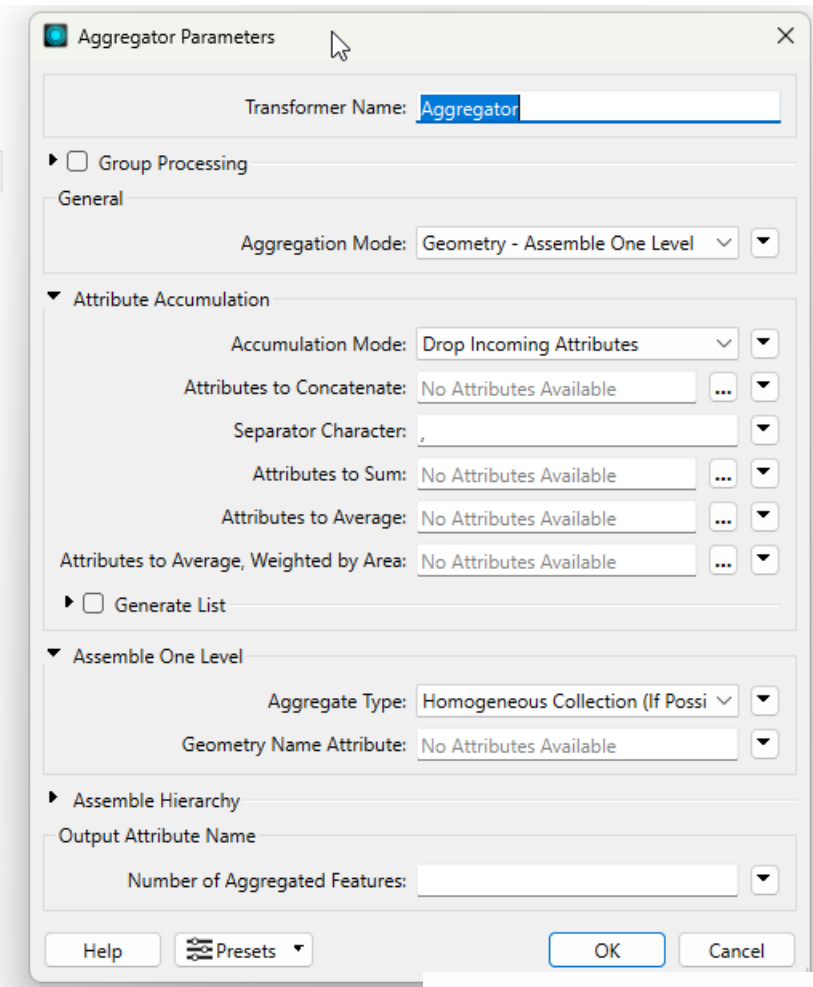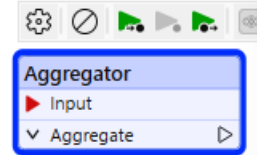cre·ator: a person or thing that brings something into existence

- Templeton "Faceman" Peck: Attribute Creator – can create one, or many attributes explicitly and dynamically. Here's where the magic starts

Team Members Specific Roles

ag·gre·ga·tor: Combining multiple features into a single aggregate feature, useful for concatenating, listing, and joining data.
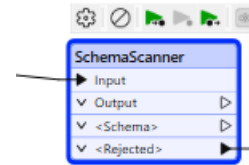
- BA Barracus: Aggregator – brings together the shrapnel left behind from an exploder and turns it into a useful payload for the final mission sequence.

Team Members Specific Roles

Production workflows for key processes: FORM and FLOW, ESRI Enterprise, ArcGIS PRO

- Howlin' Mad Murdoch: Schema Scanner – swoops in and gathers all the schema metadata, and feature definitions for each data group even for attributes unseen!

SchemaScanner Parameters

Transformer Name: SchemaScanner

▸ Group Processing

General

Output Schema Before Data Features: Yes

Number of Features to Scan:

Ignore Attributes Containing:

Ignore Attributes: Case Insensitive

Data Types

Numeric: Standard Types

String: Explicit Width

Leading Zeroes: Handle as Numeric

Missing/Null/Empty Attributes: Ignore

Date Handling

◉ No Date Detection

○ Detect FME Dates (%Y%m%d%H%M%S$)

○ Convert Input Date Format to FME Date:

Output Attribute Names

Schema Definition Name: fme_feature_type_name

Help   Presets   OK   Cancel

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Supporting Cast

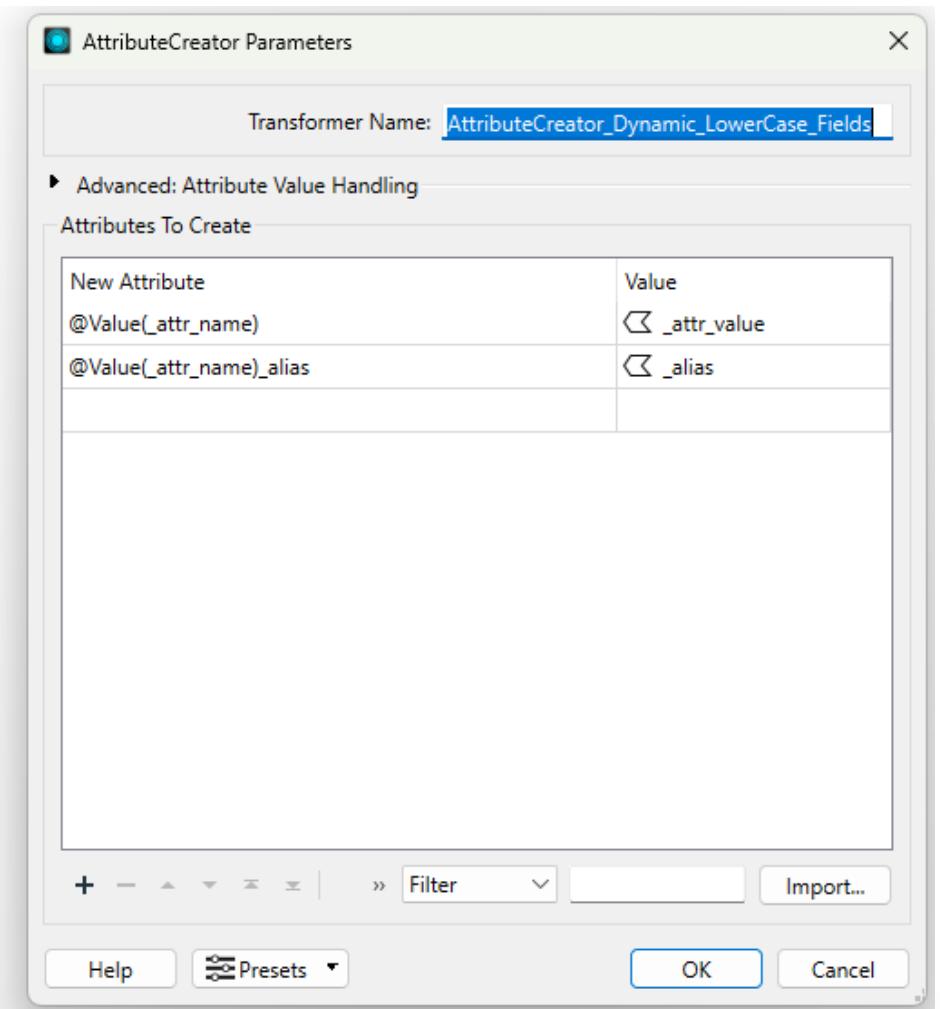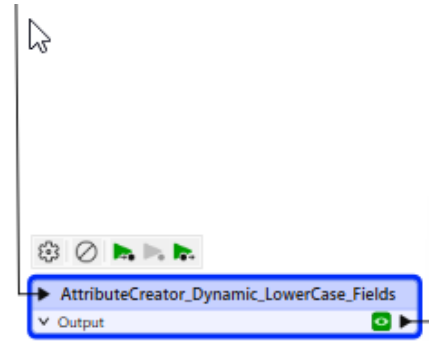Multiple transformers assist the team to produce the final outcomes

- Attribute Keeper

- Bulk attribute renamer

- Tester and TestFilter

- StringSearcher

- Null Attribute Mapper

- Not forgetting FME FLOW

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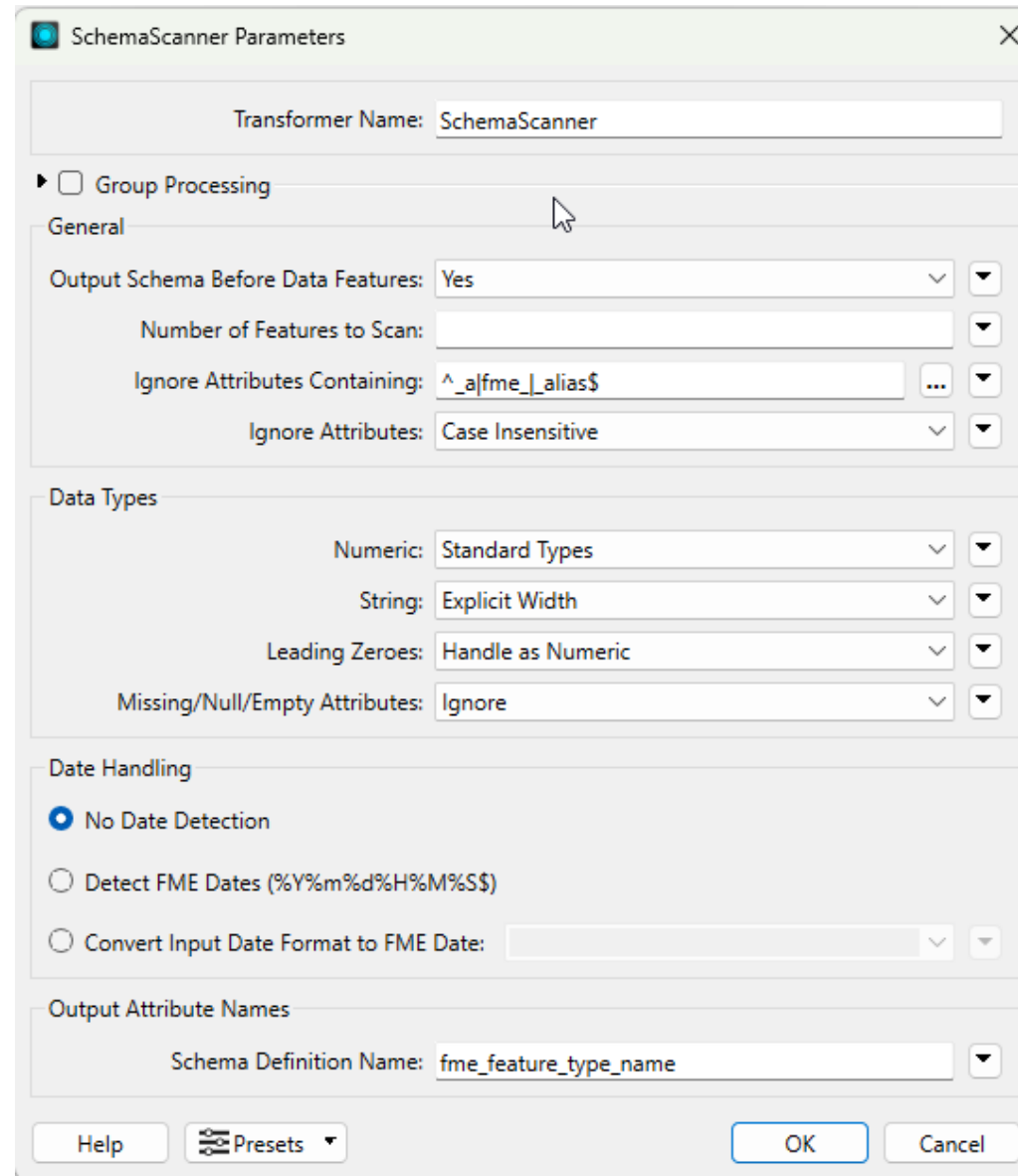
Behind the Scenes

Dynamic Attribute Creation

- Attribute created from @Value(_attr_name) or @Value(_attr_value)

- Creates one attribute per name/val pair

- New attribute can be populated or not as required (schema only)

- Attributes are NOT exposed, but don't have to be in a dynamic context

Behind the Scenes

Derive Schema for new datasets built out of the combined aggregate results of the team

- SchemaScanner

- Can scan and map attribute names and types, *even those that are not exposed*

- Settings accommodate attributes to ignore (_fme_) and date settings for final schema payload to send to writers

Demo.

"I love it when a plan comes together."

Hannibal Smith

Jason Ridley

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Thank you.

Any Questions ?

Jason Ridley