



MAGEC Data Diagram Tool

User Guide

This guide covers the two pages that make up the data diagram tool:

- `dataDiagramList.php` — the browser/menu page that lists every diagram and lets you open or create one.
 - `dataDiagram.php` — the diagram editor and viewer itself.
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1. The Diagram List (`dataDiagramList.php`)

Open this page first — it's your home base for finding and managing diagrams.

What you'll see

- One card per diagram, showing:
 - Its name
 - The number of entities and relationships it contains
 - When it was last modified and its file size
- Cards are sorted most-recently-modified first, except a diagram named `DataDiagramHelp` (if one exists) always appears at the top, since that's the one people most often want a quick link back to.
- Only `.xml` files that actually contain a `<datadiagram>` tag are listed — other XML files sitting in the same folder are ignored, so this list won't get cluttered by unrelated files.

Opening a diagram

Click anywhere on a card to open that diagram in the editor (it loads into the MAIN frame/window).

Creating a new diagram

Click **" + New data diagram "**. This opens the editor at `dataDiagram.php?name=new`.

The editor now asks you to name the diagram immediately — as soon as it opens, a prompt appears asking for a file name. Type one and the editor:

- creates a blank diagram that will save under the name you typed (no "Save As" step needed later), and
- adds a starter `TITLE` entity to the canvas, pre-filled with that same name. This title text is completely independent of the file name from that point on — rename it, retype it to something else, or delete it entirely, with no effect on what file the diagram saves to.

If you cancel the prompt instead of typing a name, the diagram falls back to the generic name `dataDiagram`.

Tip: You can still skip the prompt and jump straight to a specific name by navigating directly to `dataDiagram.php?name=YourDiagramName` — this opens a fresh diagram under that name without asking.

Once a diagram has been saved under a real name and you return to the list, it'll show up as its own card.

Exiting

Click  Exit in the top-right to go back to whatever page you were on before this list (equivalent to your browser's Back button).

2. The Diagram Editor (`dataDiagram.php`)

2.1 View mode vs. Edit mode

The editor opens in View mode by default — nothing can be accidentally moved or changed. Toggle  Edit mode in the top bar to start making changes.

Action	View mode	Edit mode
Clicking an entity	Opens a read-only detail popup	Opens the entity's edit form
Clicking a relationship line	Nothing	Opens the relationship's edit form
Dragging	Disabled	Drag a DCL (or any freestanding entity) to reposition it
Add entity / Link entities buttons	Disabled	Enabled

You can freely switch back and forth — nothing is lost by toggling Edit mode off.

2.2 Entity types

Every box on the diagram is one of eight types, each with its own color-coded chip:

Type	Purpose	Naming rule
DCL	A top-level data structure/record (the "root" of a group)	Exactly 3 letters/digits, starting with a letter (e.g. ABC)
KYF	A key field belonging to a DCL	5 characters: the owning DCL's 3-letter name + K + a digit (e.g. ABCK1)

Type	Purpose	Naming rule
ELT	An element/segment within a DCL	5 characters: the owning DCL's name + 2 digits (e.g. ABC00)
DIT	An individual data item/field within an ELT	A valid Cobol-style name starting with its owning ELT's name (e.g. ABC00-CUSTOMER-NAME)
COPYBOOK	A generated copybook	ELT name plus "-C", e.g. "VAC01-C"
DOMAIN	A reusable value-domain classification (e.g. CUSTOMER-ID)	Cobol-style name, up to 20 characters — does not need to sit under any ELT
TITLE	A free-text heading/annotation on the diagram	Any text — not a data entity, can't be linked to via a relationship
COMMENT	A free-text note/annotation on the diagram	Any text — same as TITLE

Auto-layout: KYF, ELT, and DIT entities position themselves automatically underneath their owning DCL/ELT, based on their name prefix — you only ever drag the DCL itself, and everything nested under it follows along.

2.3 Adding, editing, and deleting entities

- Turn on Edit mode.
- Click  Add entity — a new entity appears and its edit form opens immediately.
- Choose its Type from the dropdown; the form fields below adjust depending on the type (e.g. a KYF asks for Key type, an ELT asks for Offset/Length, a DIT asks for Picture/Derived/Domain).
- Fill in the Name, an optional Narrative (a short description shown in the popup), and an optional Link (a URL — useful for jumping to another diagram; defaults to opening in a frame/window named MAIN unless you set a different Target).
- Click Save changes.

To edit an existing entity, click it while in Edit mode. To delete it, open its edit form and click  Delete entity — this also removes any relationships attached to it.

Every entity's internal ID always matches its Name — renaming an entity automatically repoints every relationship (and, for DOMAIN entities, every DIT) that referenced it under the old name.

2.4 Line breaks in narratives

While typing an entity's **Narrative**, you can insert a manual line break by typing the three-character sequence - - (a hyphen, a space, and another hyphen) at the point where you want the break.

That marker is converted into an actual line break wherever the narrative is shown read-only:

- the entity's detail popup (View mode, or clicking a DOMAIN entity's usage list), and
- the tooltip shown when an exported diagram's image map is clicked.

This only applies to **narratives** — entity Names/labels are always shown as a single line, regardless of any - - sequence they might happen to contain.

2.5 Relationships

- In Edit mode, click  Link entities.
- Click the first entity, then click a second, different entity — a relationship line is created and its edit form opens.
- Set:
 - Label — the verb phrase describing the relationship (e.g. "owns", "maps to")
 - Domain (optional) — tags the relationship itself with a DOMAIN entity, shown as a small pink label along the line
 - Cardinality at each end — One or Many (crow's-foot notation)
 - Optionality at each end — whether that side is optional (a circle) or mandatory (a tick mark)
- Click Save changes.

Click the  Notation button (top-right of the preview panel) at any time for a legend explaining the crow's-foot symbols.

Relationships that are already implied by the naming hierarchy (e.g. a DCL and its own KYF) aren't drawn as separate lines — the indentation already shows that connection.

2.6 DIT domains and automatic DOMAIN nodes

A DIT entity's edit form has an optional Domain field. Only some DITs need one — leave it blank if it doesn't apply.

- If you type a domain name that doesn't yet exist on the diagram, a matching DOMAIN entity is created automatically the next time the diagram renders (you don't need to add it yourself).
- The field offers autocomplete against domains already on the diagram, but you can also type a brand-new one freely.
- Click any DOMAIN entity (in either View or Edit mode) to see a "Where used in this diagram" list — every DIT on the current diagram that references it.
 - This list is scoped to the diagram you have open. The same domain name may also be used by DITs on other diagrams — the popup says so explicitly, since it has no way to check other files.
- You can't delete a DOMAIN entity while any DIT on the diagram still references it — you'll get a message listing which DITs to update first. This avoids the domain node simply reappearing on the next render.
- Renaming a DOMAIN entity automatically updates every DIT that referenced its old name.

2.7 Titles and comments

Add a TITLE or COMMENT entity the same way as any other ( Add entity, then set Type). These render as plain text with no box — TITLE uses large serif text for a diagram heading, COMMENT is smaller free-floating annotation text. Neither can be connected to anything with a relationship.

Note: a brand-new diagram (see **1. Creating a new diagram** above) starts out with one TITLE entity already on the canvas, pre-filled with the name you gave the diagram — it's a normal, editable entity from that point on.

2.8 Themes

Use the  dropdown in the top bar to switch the diagram's color scheme:

- Bold (default) — the original vivid dark theme
- Boardroom — pure black-and-white on a white background, for economical printing
- Technical — a cyan/teal schematic look
- Monochrome — grayscale on a dark background

Your theme choice is saved into the diagram's XML file itself, so it opens the same way next time.

2.9 Export width and logo

- Export width sets the pixel width used when generating the standalone SVG and image map (1200 / 900 / 600 px, or whatever width was last used).
- Logo lets you overlay an image (from a logos folder next to the script) in the top-right corner of both the live preview and any exported output. Leave it set to "None" if you don't want one.

Both settings are saved into the diagram's XML file, same as the theme.

2.10 Exporting

Click  Export SVG + Image Map to write out two files alongside the diagram's XML:

- <name>.svg — a standalone image of the diagram, usable outside this tool
- <name>.map.html — an HTML fragment with a clickable image map over that SVG, so entities remain clickable (showing the same narrative/details/where-used popups) when embedded in another web page

You'll need to click Export again any time you want the exported files to reflect newer changes — saving the diagram itself does not automatically re-export the SVG/map.

2.11 Saving

Click  Save to write your changes to the diagram's .xml file on the server. The button is greyed out when there's nothing new to save, and shows an asterisk (Save*) whenever there are unsaved changes — including a theme, export width, or logo change, not just entity/relationship edits.

A brand-new diagram (created via the name prompt described in section 1) starts out already flagged as having unsaved changes, even before you've made a single edit — so Exit will confirm before you can accidentally lose it without saving at least once.

2.12 Printing

Click  Print to print just the diagram (the toolbar and any open popups are hidden automatically). The page background prints white regardless of your chosen theme, so it never wastes ink/toner on a dark background — switch to the Boardroom theme first if you want purely black-and-white output.

2.13 Exiting

Click  Exit. If you have unsaved changes, you'll be asked to confirm before leaving.

Layout note: Save and Exit are always the last two buttons in the header, in that order, regardless of what other controls appear before them — so you can always find them at the right-hand end of the toolbar.

3. Quick reference

Button	What it does
 Edit mode	Toggles between read-only viewing and editing
 Add entity	Creates a new entity and opens its edit form
 Link entities	Starts a two-click relationship creation
 (theme dropdown)	Changes the color scheme
Export width (dropdown)	Sets the pixel width for exported files
Logo (dropdown)	Picks an overlay image for the preview/export
 Export SVG + Image Map	Writes standalone .svg and .map.html files
 Print	Prints just the diagram
 Save	Writes your changes to the diagram's .xml file (always the second-to-last button in the header)
 Exit	Leaves the editor — confirms first if there are unsaved changes (always the last button in the header)
 Notation	Shows the crow's-foot cardinality/optionality legend

4. Tips

- Escape closes any open popup and cancels an in-progress "link entities" action.
- A DCL is always drawn behind everything nested under it, so it can never visually block or steal a click from its own children.
- If two relationship lines would overlap, they're automatically spread across separate connection points so they stay visually distinct.
- Type - - inside a narrative to force a line break wherever that narrative is displayed read-only (see **2.4 Line breaks in narratives**).

- The small copyright notice at the bottom of the diagram is added automatically to both the live preview and every exported file — no action needed.