AI Formula Functions — User Guide

(Un)Perplexed Spready

This application extends standard spreadsheet formulas with AI-powered functions that send cell data to an AI model and write the response back into the cell — just like any other formula result.

All AI formulas recalculate on demand and support copy-paste with automatic cell reference adjustment.

Formula Families

Family	Description
PERPLEXITY / **ASK_PERPLEXITY** / **ASKPERPLEXITY**	Perplexity.ai cloud API. Always searches the web on every call. Requires an API key (Settings > Perplexity Settings).
ASK_LOCAL / **ASKLOCAL**	Locally running AI model (Ollama, Open WebUI, JAN AI, or any OpenAI-compatible endpoint at localhost). No web search by default — unless Tool IDs are configured. Settings: Settings > AskLocal Settings.
ASK_REMOTE / **ASKREMOTE**	Same as ASK_LOCAL, but uses a remote server endpoint defined by the compile-time constants REMOTEAPIURL and REMOTEAPIMODEL. No separate settings dialog.
WEBSEARCH	Web search followed by LLM summarization. **ALWAYS** executes: WebSearch() → LLM processes results. Use when you want search results processed by your local LLM.
ASK_LOCAL_WEB / **ASKLOCALWEB**	Intelligent search with tool-calling. LLM decides: answer directly OR search first then answer. May skip search entirely (faster, no API cost). Requires a model that supports function calling (e.g. llama3.1, mistral-nemo, qwen2.5).
ASK_REMOTE_WEB / **ASKREMOTEWEB**	Same as ASK_LOCAL_WEB, but uses the remote endpoint.

Parameter Variants

Every family has four numbered variants (0-3). The number equals the count of data input arguments. The **LAST argument is always the instruction/prompt**.

Variant 0 — 1 argument: prompt only

```
=ASK_LOCAL0("What is a barcode?")
=ASK_LOCAL("What is a barcode?")      ← bare name = synonym for 0
```

Variant 1 — 2 arguments: one data input + instruction

```
=ASK_LOCAL1(A5, "Classify this product name into a category")
```

Variant 2 — 3 arguments: two data inputs + instruction

```
=ASK_LOCAL2(A5, B5, "Which description is more accurate?")
```

Variant 3 — 4 arguments: three data inputs + instruction

```
=ASK_LOCAL3(A5, B5, C5, "Write a combined summary of all three")
```

Complete Formula Name List

Perplexity (cloud, always web-enabled)

- PERPLEXITY0 / PERPLEXITY1 / PERPLEXITY2 / PERPLEXITY3
- ASK_PERPLEXITY0 / ASK_PERPLEXITY1 / ASK_PERPLEXITY2 / ASK_PERPLEXITY3
- ASKPERPLEXITY0 / ASKPERPLEXITY1 / ASKPERPLEXITY2 / ASKPERPLEXITY3
- PERPLEXITY (= PERPLEXITY0)
- ASK_PERPLEXITY (= ASK_PERPLEXITY0)
- ASKPERPLEXITY (= ASKPERPLEXITY0)

Local AI (no web by default)

- ASK_LOCAL0 / ASK_LOCAL1 / ASK_LOCAL2 / ASK_LOCAL3
- ASKLOCAL0 / ASKLOCAL1 / ASKLOCAL2 / ASKLOCAL3
- ASK_LOCAL (= ASK_LOCAL0)
- ASKLOCAL (= ASKLOCAL0)

Remote AI (no web by default)

- ASK_REMOTE0 / ASK_REMOTE1 / ASK_REMOTE2 / ASK_REMOTE3
- ASKREMOTE0 / ASKREMOTE1 / ASKREMOTE2 / ASKREMOTE3
- ASK_REMOTE (= ASK_REMOTE0)
- ASKREMOTE (= ASKREMOTE0)

Web Search (search → LLM summarization)

- WEBSEARCH / WEBSEARCH0 ← query only
- WEBSEARCH1 ← query + filter string
- WEBSEARCH2 ← query + filter string + max results

Local AI + Web (tool calling)

- ASK_LOCAL_WEB0 / ASK_LOCAL_WEB1 / ASK_LOCAL_WEB2 / ASK_LOCAL_WEB3
- ASKLOCALWEB0 / ASKLOCALWEB1 / ASKLOCALWEB2 / ASKLOCALWEB3
- ASK_LOCAL_WEB (= ASK_LOCAL_WEB0)
- ASKLOCALWEB (= ASKLOCALWEB0)

Remote AI + Web (tool calling)

- ASK_REMOTE_WEB0 / ASK_REMOTE_WEB1 / ASK_REMOTE_WEB2 / ASK_REMOTE_WEB3
- ASKREMOTEWEB0 / ASKREMOTEWEB1 / ASKREMOTEWEB2 / ASKREMOTEWEB3
- ASK_REMOTE_WEB (= ASK_REMOTE_WEB0)
- ASKREMOTEWEB (= ASKREMOTEWEB0)

Usage Examples

Simple question (no input data)

```
=PERPLEXITY("What is the capital of France?")
=ASK_LOCAL("Explain what a barcode is")
=ASK_REMOTE("Who wrote Don Quixote?")
=ASK_LOCAL_WEB("What is the current EUR/USD exchange rate?")
```

One data input

```
=PERPLEXITY1(A2, "Translate to German")
=ASK_LOCAL1(A5, "Classify this product name into a category")
=ASK_REMOTE1(A3, "Translate to English")
=ASK_LOCAL_WEB1(A2, "Find the current price of this product on the web")
```

Two data inputs

```
=PERPLEXITY2(A2, B2, "Compare these two products")
=ASK_LOCAL2(A5, B5, "Which of these two descriptions is more accurate?")
=ASK_REMOTE_WEB2(A5, B5, "Compare current market prices for both")
```

Three data inputs

```
=PERPLEXITY3(A2, B2, C2, "Summarize all three inputs")
=ASK_LOCAL3(A5, B5, C5, "Write a combined summary of all three")
```

Web search + LLM summarization

```
=WEBSEARCH("current EUR/USD exchange rate")
=WEBSEARCH1("llama3.1 release notes", "site:ollama.com")
=WEBSEARCH2("pharma serialization EU", "regulation", 10)
```

Using a range on the same sheet

```
=ASK_LOCAL1(B2:B100, "List the most common values")
=PERPLEXITY2(A2:A50, C2:C50, "Compare column A with column C")
```

The RANGE: Trick — Cross-Sheet Ranges

Standard cell range references (e.g. B2:B100) only work for ranges on the **CURRENT sheet**. To pass a range from **ANOTHER sheet**, use the `RANGE:` prefix with standard Excel-style notation:

```
"RANGE:SheetName!A1:B100"
```

The application reads all cells in the specified range and passes them as a comma-separated list to the AI model.

Examples

```
=ASK_LOCAL1("RANGE:Taxonomy!A2:A574", "Classify each entry")
=PERPLEXITY2("RANGE:Products!B2:B200", "RANGE:Prices!C2:C200",
          "Match products to prices and flag anomalies")
=ASK_REMOTE1("RANGE:Sheet2!A1:C50", "Summarize this data table")
=ASK_LOCAL_WEB1("RANGE:Products!B2:B200",
           "Find current market prices for these products")
```

Supported Formats

- `"RANGE:Sheet1!A1:A100"` ← single column
- `"RANGE:Sheet1!A1:D50"` ← multi-column block
- `"RANGE:'My Sheet'!B2:B99"` ← sheet name with spaces (quoted)

Choosing the Right Formula

Need	Formula
Live internet data, always	PERPLEXITY or ASK_LOCAL_WEB

General knowledge, no internet needed	ASK_LOCAL or ASK_REMOTE
Cost-sensitive, many rows	ASK_LOCAL (free, local hardware)
Current prices / news / regulations	ASK_LOCAL_WEB or PERPLEXITY
Web search + LLM summary (no tool)	WEBSEARCH
Offline / air-gapped environment	ASK_LOCAL only
Data from another sheet	Any family, using RANGE: trick

Recalculation

AI formulas do **NOT** recalculate automatically on every keystroke. Each call hits a paid or resource-intensive API — this is intentional.

Calculation is triggered by:

- Editing and confirming the cell containing the formula
- Menu > Recalculate Selected Cell
- Menu > Recalculate Selected Range
- Menu > Recalculate All Formulas
- Disabling Defer Calculation (Settings menu) then triggering manually

TIP: Enable "Defer Formula Calculation" while building a spreadsheet with many AI formulas to avoid triggering API calls on every edit. Trigger recalculation manually when ready.

Error Messages

Error	Meaning
APIERR	API returned an HTTP error or network is unreachable
LICENSE LOCKED	Premium features are not activated
Deferred	Calculation is deferred — trigger manual recalculate
N/A	The model could not answer the question

Copy-Paste

Use the application's **CUSTOM Copy and Custom Paste actions** (not the OS default Ctrl+V) when copying cells with AI formulas.

The paste engine recognizes all registered formula names — including both underscore (`ASK_LOCAL1`, `ASK_REMOTE_WEB2`) and no-underscore (`ASKLOCAL1`, `ASKREMOTEWEB2`) variants — and adjusts relative cell references by the correct row/column delta, exactly like Excel does for standard formulas.

Happy AI-powered spreadsheet work!