HOTPRICES.ORG

Goals & Open Source

Hot Prices is designed as a non-commercial open source project. It is intended to enable consumers to find the cheapest version of a product in stores in order to reduce the burden of increased food prices.

The secondary goal is to serve as a research and analysis tool for scientific institutions and media in order to be able to observe price movements in retail or product segments.

The entire source code of the project is available on GitHub: https://github.com/Javex/hotprices-au (a fork of https://github.com/badlogic/heissepreise)

The README.md file contains instructions to start the project locally. Code contributions are warmly welcome!

Data basis

The product and price data is collected once a day from the online shops of the Australian duopoly Woolworths & Coles. Other chains such as IGA are not supported since they don't advertise their prices online and their independent nature means prices likely differ between

stores. Products that have been removed from the range remain in the data set to enable historical analysis.

Product data is normalized across all chains. Price changes are tracked for each product. Quantities and units are standardized to pieces, grams and milliliters wherever possible. Categorizations are based on one standardized categorization transferred, either through mapping or name similarity to already categorized products.

See the "Results list" section and the "JSON" and "CVS" paragraphs for a description of how to download the normalized raw data yourself.

Operation Manual

Product Search

Link: https://hotprices.org/index.html

Search

Search words
One or more (parts of) words can be entered in the search field to search for products. Products whose names contain all the search words are included in the results list.

For example, the search "long-life milk" returns all products that contain the words "long-life" and "milk" in the name. The upper and lower case letters are ignored. Words like "long-lifed", "milky", etc. are also included as hits.

With the "Exact word" checkbox, only entire words are accepted as hits, i.e. the product "long-life whole milk" would not be considered a hit with the search "long-life milk".

https://hotprices.org/index.html?f=-;-;,;,;-;,;,;,;,;,;,;,;-;100;0;-;2023-10-04;,;,;,;Long%20Life%20Milk&l=-;,;price-asc;-&c=2023-10-04;-;-;2023-09-26;-;-&d=

Exclude words
With the prefix **"-",** followed by a word (without spaces in between), products whose names contain the word can be excluded.

For example, the search "milk -coconut -chocolate" only returns products that have "milk" and not "coconut" and "chocolate" in the name:
https://hotprices.org/index.html?f=-;-;,;,;-;,;,;,;,;,;,;,;-;100;0;-;2023-10-04;,;,;,;milk%20-coconut%20-chocolate&l=-;,;price-asc;-&c=2023-10-04;-;-;2023-09-26;-;-&d=

Limit quantities
Using the operators ">", ">=", "=", "<" and "<=", followed by the quantity and the unit, products can be restricted according to their delivery quantity.

For example, the search "butter >= 200 g <= 250 g" returns products that contain the word "butter" in the name and whose delivery quantity is greater than or equal to 200 grams and less than or equal to 250 grams.
https://hotprices.org/index.html?f=-;-;-;;-;;;;;;;;;;-;100;0;-;2023-10-04;;;;;butter%20%3E%3D%20200g%20%3C%3D%20250g&l=-;.;price-asc;-&c=2023-10-04;-;-;2023-09-26;-;-&d=

Possible units of measure are "ea" (each), "cm", "m", "g", "dag", "kg", "ml", "dl", "l", "wg" (wash cycles). (Todo: https://github.com/Javex/hotprices-au/issues/9)

Limit by chains
The results can be further restricted by chain using the checkboxes, either Woolworths, Coles or both.

Discount store brands only
TODO: https://github.com/Javex/hotprices-au/issues/8
The checkbox "Discount store brands only" limits the result to discount own brand products. If the mouse cursor stays over the checkbox for a few seconds, the brand names are displayed.

Only bio
Todo: https://github.com/Javex/hotprices-au/issues/10
The results may only contain organic products.

Categories
Todo: https://github.com/Javex/hotprices-au/issues/4
The products are categorized for the Billa, Spar, Hofer and MPREIS chains. Products at other chains are currently categorized as "Unknown".

If the checkbox of a category is selected, only the products in this category will be displayed. You can select several categories at the same time.

Results list

The results list begins with a header on the left showing **Number of results** vs. the total quantity of known products.

The **"JSON"** Link allows you to download the results list as an easy-to-process JSON file. The root object of the JSON file is an array that contains a JSON object with the following properties for each product:

- **store**: The ID of the chain, "coles" or "woolies"
- **id**: The ID of the product. This is unique within the chain. For a unique ID across all chains, must **id** with **store.** The ID is not an EAN number as this is not included in the chain data. These are usually chain-internal IDs
- **name:** The name of the product, starting with the brand name, where available

- **category**: The ID of the category assigned to the product [within the canonical categorization](#)
- **price**: The current price of the product in A$
- **priceHistory**: a sorted array whose elements each encode a historical price of the product in the form `{ date: "yyyy-mm-dd", price: xx.xx }`. The first element corresponds to the current price, the second element to the previous price, etc.
- **isWeighted**: `true` if it is a product to be weighed, otherwise `false`
- **unit**: The unit of measure of the product, `ml`, `g`, or `pcs`.
- **quantity**: The quantity at which the product will be sold for the stated price.
- **organic:** `true` if it is an organic product, otherwise `false` (TODO: https://github.com/Javex/hotprices-au/issues/10)
- **available**: `true` if the product is currently available, otherwise `false`
- **url:** the web link to the product page in the chain's online shop

The entire data set can be obtained daily by store:
- https://hotprices.org/data/latest-canonical.woolies.compressed.json.gz
- https://hotprices.org/data/latest-canonical.coles.compressed.json.gz

TODO: https://github.com/Javex/hotprices-au/issues/11

The **"CSV"** Link allows you to download the results list as a long form CSV file. The file is encoded as UTF-8 and must be loaded as such into Excel, for example, so that umlauts and other special characters are displayed correctly. Each row encodes the data of a product for a day on which there was a price change for that product. By default, all lines of a product are stored one after the other in the CSV file and sorted in descending order according to the price change date. The columns are defined as follows:

- **store**: The ID of the chain, "woolies" or "coles". When importing into Excel, for example, this column should be set to the "Text" type.
- **id**: The ID of the product. This is unique within the chain. For a unique ID across all chains must **id** with **store** be combined**. The ID is not an EAN because it is not included in the chain data. These are usually chain-internal IDs. When importing into Excel, for example, this column should be set to the "Text" type.
- **name:** The name of the product, starting with the manufacturer's name, where available. When importing into Excel, for example, this column should be set to the "Text" type.
- **priceDate**: The price change date in yyyy-mm-dd format. When importing into Excel, this column should be set to type Date with format YMD.
- **price**: The price of the product on the date **priceDate** in the format xx.xx, where . is used as a decimal separator. When importing into Excel, for example, you must ensure that the . is used as a decimal separator.
- **isBudgetBrand**: "true" if it is a discount own-brand product, e.g. Clever or S-Budget, otherwise "false". (TODO)
- **quantity**: The quantity in the unit **unit** (see below) at which the product is sold for the stated price. The quantity is extracted as best as possible from the product data of the

online shops, but may be incorrect as not all online shops store this data in a structured manner.

- **unit**: The unit of measure of the product, "ml", "g", or "pcs". The unit of measure is extracted as best as possible from the product data of the online shops, but may be incorrect as not all online shops store this data in a structured manner.
- **isWeighted**: `true` if it is a product to be weighed, such as certain fruit products or delicatessen sausages, otherwise `false`
- **isBio:** `true` if it is an organic product, otherwise `false`
- **isAvailable**: `true` if the product is currently available, otherwise `false`
- **url:** the web link to the product page in the chain's online shop. The data also includes products that are no longer listed. Accordingly, this link may refer to a page that no longer exists.

The entire data set can be obtained daily from https://heisse-preise.io/data/latest-canonical.csv.

With the checkbox **"Chart"** a chart can be switched on or off. More about charts in the "Charts" section below.

With the radio boxes **"Unit price"** and **"Bulk price"**can be switched back and forth between these two price types.

At the far right you can choose what results should **Sort by**. These are largely self-explanatory.

The order "**Name similarity**" uses an algorithm that arranges products with similar names and quantities next to each other in the results list. This sorting is ideal for sorting the same products across chains in order to quickly make price differences visible. This sorting option can only be used for result lists with fewer than 1000 or 500 results (smartphone).

Here's an example:

https://heisse-preise.io/index.html?f=-:-:,:,:-:-:,:,:,:,:,:,:-:;:-:;-:-:-;red%20bull&l=-:.:name-similarity:-&c=2023-06-19;-;2017-01-01;-;-&d=

○ Alle   ● Billa   ● Spar   ● Hofer   ● MPREIS   ● DM   ● Unimarkt   ● Penny   ○ DM DE   ○ REWE DE

○ Nur Diskont-Eigenmarken   ○ Nur Bio   ○ Exaktes Wort   Preis € 0   - 100

Resultate 123 / 116589   JSON   ○ Diagramm   ● Verkaufspreis   ○ Mengenpreis   Sortieren Namensähnlichkeit ∨

KETTE	NAME		PREIS +	
BILLA	ORGANICS by Red Bull BLACK ORANGE	250 ml	€ 1.49 +33% (42) ▼	📈
SPAR	Organics by Red Bull Black Orange	250 ml	€ 1.49 +67% (20) ▼	📈
UNIMARKT	Organics by Red Bull Black Orange	250 ml	€ 1.49 ▼	📈
MPREIS	Organics by Red Bull Black Orange 250ml	250 ml	€ 0.99 -38% (2) ▼	📈
MPREIS	Organics by Red Bull Easy Lemon 250ml	250 ml	€ 0.99 -38% (2) ▼	📈
BILLA	ORGANICS by Red Bull EASY LEMON	250 ml	€ 1.49 +33% (2) ▼	📈
SPAR	Organics by Red Bull Easy Lemon	250 ml	€ 1.49 ▼	📈
UNIMARKT	Organics by Red Bull Bitter Lemon	250 ml	€ 1.49 ▼	📈
BILLA	ORGANICS by Red Bull GINGER ALE	250 ml	€ 1.49 +33% (101) ▼	📈
SPAR	Organics by Red Bull Ginger Ale	250 ml	€ 1.49 +67% (51) ▼	📈
UNIMARKT	Organics by Red Bull Ginger Ale	250 ml	€ 1.49 ▼	📈
MPREIS	Organics by Red Bull Ginger Ale 250ml	250 ml	€ 0.99 -38% (2) ▼	📈
BILLA	ORGANICS by Red Bull GINGER BEER	250 ml	€ 1.75 +34% (20) ▼	📈
SPAR	Organics by Red Bull Ginger Beer	1 l	€ 6.99 ▼	📈
MPREIS	Organics by Red Bull Ginger Beer 4erGlas	1 l	€ 7.16 ▼	📈
MPREIS	Organics by Red Bull Tonic Water 4erGlas	1 l	€ 7.16 ▼	📈

The rest of the results list consists of the products found. By default, a product's chain, name, quantity, current price, percentage change from last price, and number of price changes are displayed in parentheses.

Clicking on the name takes you to the chain's product page.

One click on ▼ next to the price opens or collapses the price history as a bar chart.

SPAR	Organics by Red Bull Black Orange	250 ml	€ 1.49 +67% (20) ▼
2023-01-02	€ 1.49	+ 67%	
2022-12-21	€ 0.89	-40%	
2022-11-03	€ 1.49	+ 67%	
2022-10-19	€ 0.89	-40%	
2022-04-28	€ 1.49	+ 67%	
2022-04-06	€ 0.89	-40%	
2022-03-04	€ 1.49	+ 67%	
2022-02-17	€ 0.89	-40%	
2022-01-04	€ 1.49	+ 67%	
2021-12-21	€ 0.89	-40%	
2021-11-05	€ 1.49	+ 25%	
2021-10-20	€ 1.19	-20%	
2021-09-09	€ 1.49	+ 25%	
2021-08-25	€ 1.19	-20%	
2021-08-12	€ 1.49	+ 25%	
2021-07-28	€ 1.19	-20%	
2021-07-01	€ 1.49	+ 67%	
2021-06-23	€ 0.89	-40%	
2021-06-02	€ 1.49	+ 25%	
2021-05-19	€ 1.19	-20%	
2021-04-19	€ 1.49	0%	

You can also click PRICE ▼ to expand or collapse the price history of all products in the results list.

The price history of the product can be added or removed from the diagram using the 📈checkbox.
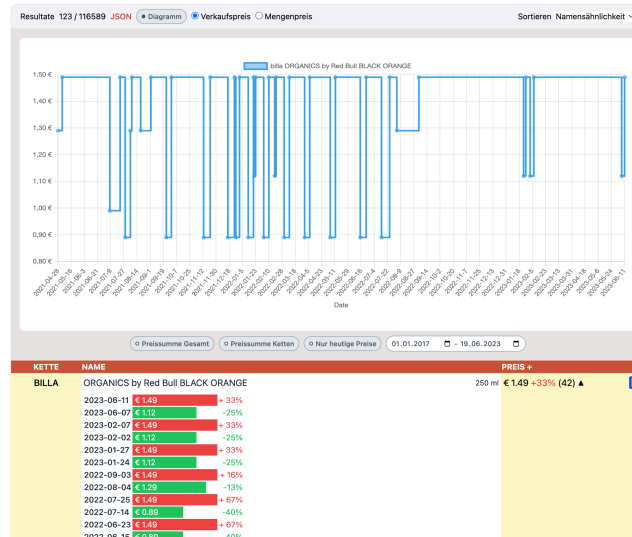
If a product is currently not available, it will be marked with a skull.

These products can be hidden in the settings. To do this, go to this link:
https://heisse-preise.io/settings.html

And click the "Show only available products" checkbox.

Chart

In the **Chart area** the price history of the products selected with 📈 is displayed.

Each line represents the price trend of a product within the selected date range.

Each point on a line represents a price change. If you hold the mouse over a point for a few seconds, the details will be displayed.
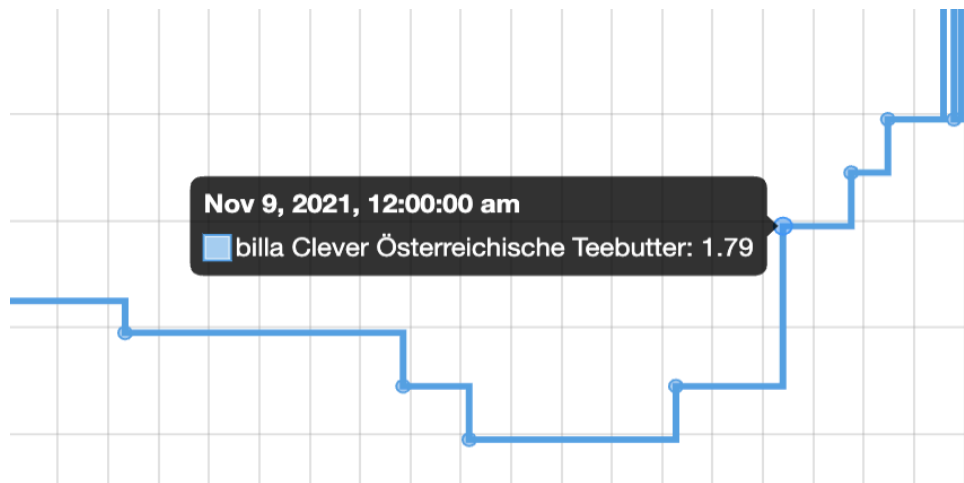
The chart area also offers 3 additional display options to visualize price totals across (parts of) products in the result.

If the **"Total price"** checkbox is selected, for each day on which there was at least one price change for a product in the results list, the sum of the prices of all products on that day are displayed. For products that did not have a price change on that day, the last price before that day is used. For products that were not yet in the range that day, the most recent price is "extrapolated" from the future into the past. In this case, the total for the day is not historically accurate, but is comparable to other days.

If the **"Store price"** checkbox is selected, the price amounts are displayed per chain as described above.

With the **"Today's prices only"** checkbox, only today's prices are displayed.

Share search

Every time you type something in the search field or change the display settings, the URL in the browser address bar is updated. This includes products added to the chart.

To share the search, result and display, all you need to do is copy the URL from the address bar and share it. The links above were also created using this method.

Price changes

Link: https://heisse-preise.io/changes.html

If **"Date"** is selected, all products whose prices have changed on that day will be displayed. The result can then be further restricted using the other filter options. For example, if you use the **"More expensive"** and **"Cheaper"** checkboxes, products that have become more expensive or cheaper are included and excluded.

If you select **"Cheaper since last change"**, all products that were reduced in price during their last price change are displayed.

The rest of the page works the same as for product search. For example, you can filter and restrict search terms and quantities.

As with product searches, the result and the filter and display settings can be shared with others via URL from the browser address bar.

Shopping Carts

Link: https://heisse-preise.io/carts.html

The shopping cart overview allows you to create and manage shopping carts. By default there is a shopping cart called "Momentum own brand comparison", which compares 470 products from the Clever and S-Budget brands.

A new shopping cart can be created using the "New shopping cart" button. The name of the shopping cart must be unique.
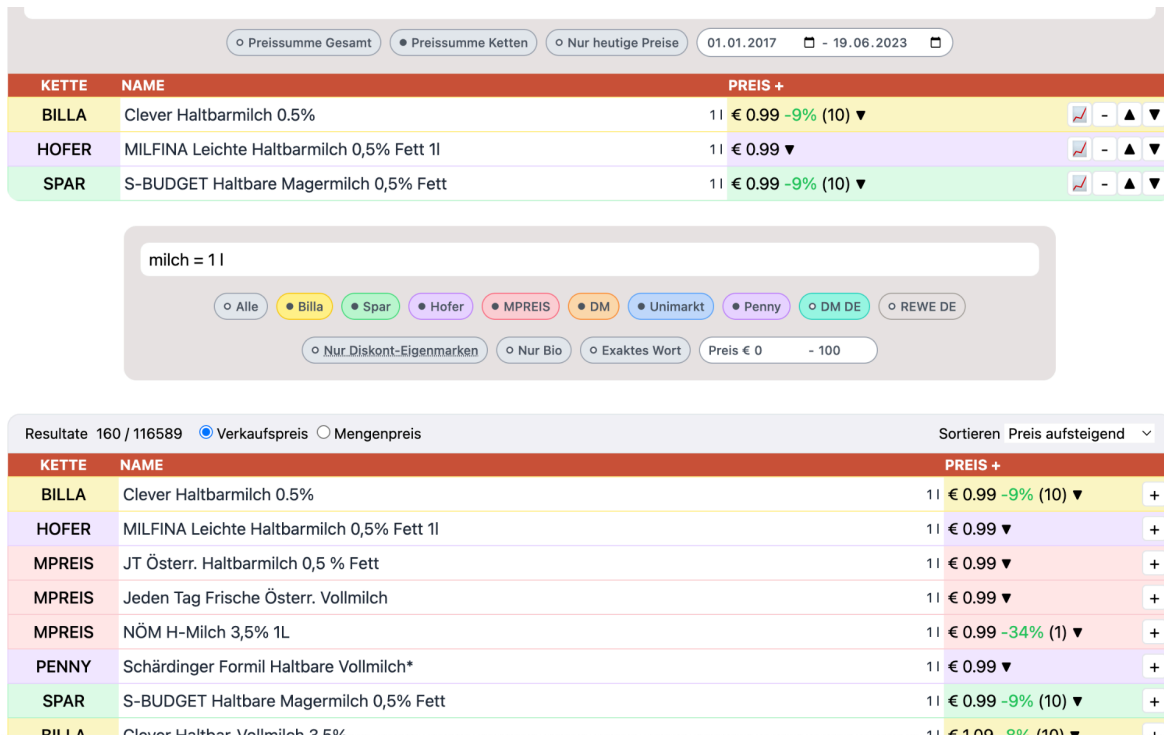
A newly created shopping cart does not yet contain any products. To add products to your shopping cart, you can search for them using the search field and filter [+] Add to cart button.

KETTE	NAME	PREIS +	
BILLA	Clever Haltbarmilch 0.5%	1 l € 0.99 –9% (10) ▼	⟋ - ▲ ▼
HOFER	MILFINA Leichte Haltbarmilch 0,5% Fett 1l	1 l € 0.99 ▼	⟋ - ▲ ▼
SPAR	S-BUDGET Haltbare Magermilch 0,5% Fett	1 l € 0.99 –9% (10) ▼	⟋ - ▲ ▼

○ Preissumme Gesamt ● Preissumme Ketten ○ Nur heutige Preise   01.01.2017 ▢ - 19.06.2023 ▢

milch = 1 l

○ Alle ● Billa ● Spar ● Hofer ● MPREIS ● DM ● Unimarkt ● Penny ○ DM DE ○ REWE DE

○ Nur Diskont-Eigenmarken ○ Nur Bio ○ Exaktes Wort   Preis € 0   - 100

Resultate 160 / 116589   ● Verkaufspreis ○ Mengenpreis   Sortieren Preis aufsteigend ⌄

KETTE	NAME	PREIS +	
BILLA	Clever Haltbarmilch 0.5%	1 l € 0.99 –9% (10) ▼	+
HOFER	MILFINA Leichte Haltbarmilch 0,5% Fett 1l	1 l € 0.99 ▼	+
MPREIS	JT Österr. Haltbarmilch 0,5 % Fett	1 l € 0.99 ▼	+
MPREIS	Jeden Tag Frische Österr. Vollmilch	1 l € 0.99 ▼	+
MPREIS	NÖM H-Milch 3,5% 1L	1 l € 0.99 –34% (1) ▼	+
PENNY	Schärdinger Formil Haltbare Vollmilch*	1 l € 0.99 ▼	+
SPAR	S-BUDGET Haltbare Magermilch 0,5% Fett	1 l € 0.99 –9% (10) ▼	+
BILLA	Clever Haltbar-Vollmilch 3.5%	1 l € 1.09 –8% (10) ▼	+

After adding the first product, the contents of the shopping cart appear above the product search field as a list of results including a diagram with the price total per chain.

A product with the elements can be placed within the shopping cart [⟋ - ▲ ▼]
added/removed from the chart, removed from the shopping cart, or moved up or down in the order.

The sorting of products in the shopping cart is determined by the user.

Above the shopping cart results list is another search field that can be used to filter the shopping cart contents.

Every time you make a change, the shopping cart is automatically saved. **The storage takes place locally on the device.** Browsers allow deleting this local data for a website. If this is done manually, the shopping carts will be irretrievably lost.

Shopping carts can be exported or imported in the shopping cart overview. Click **Export** to save the data of one or all shopping carts as a JSON file. Click **Import** to import the data from such files again.

Shopping carts can also be easily shared via link. Just click the "**Share**" link for that cart, then share the URL from the browser address bar.
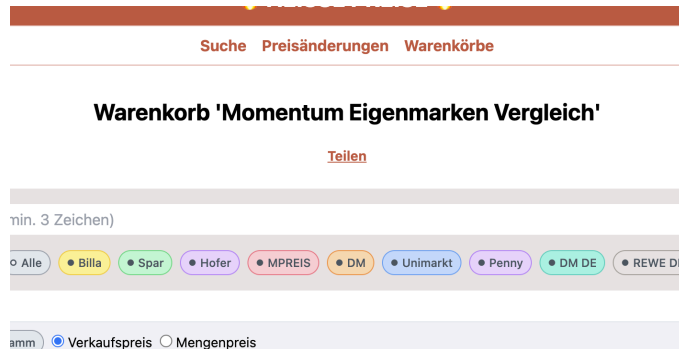
The recipient then has the option of saving the shared shopping cart locally on their device:

A locally saved shopping cart can be edited.

As an example, a shared shopping cart consisting of private label dairy products:
https://heisse-preise.io/cart.html?cart=Milch;billa00-746474;hofer543657;spar4813538;

Search for advanced users

In addition to word- and filter-based searches, you can also search or restrict searches using an SQL-like language. This uses an AlaSQL SELECT Statement, where the first part is specified with "select * from result where".

The conditions of the "where" clause can then be specified in the search field or sorted with "order by". Common SQL operators and functions are supported. Details can be found in the AlaSQL documentation.

SQL-like searches must begin with a "!" start. This is followed by the "where" clause conditions and the "order by" part.

Each "row" of the searchable table corresponds to a product. The following columns are available for the query:

- **`store`:** the chain of the product. Must be escaped with Backtick `! Possible values are "billa", "spar", "hofer", "mpreis", "dm", "unimarkt", "penny", "dmDe", "reweDe".
- **id**: the ID of the product
- **name**: the name of the product
- **price**: the current selling price
- **unitPrice:** the current unit price
- **date**: the date on which the price was set in the format "yyyy-mm-dd", e.g. "2020-10-28".
- **numPrices**: Number of price changes
- **price1, price2, price3:** the last 3 prices before the current price.
- **date1, date2, date3:** the date on which the last 3 prices were set in the format "yyyy-mm-dd"
- **priceOldest**: the oldest price
- **dateOldest**: Date of oldest price in "yyyy-mm-dd" format
- **unit:** the unit of measure. Possible values: "wg" (wash), "ml" (milliliter), "g" (gram), "stk" (piece)
- **quantity**: the sales quantity of the respective unit

Examples:

All products that start with "clever" (case sensitive) and weigh at least 200g. Sort by descending number of price changes.

!name like "clever%" and unit="g" and quantity>=200 order by numPrices desc

https://heisse-preise.io/index.html?f=-;-;-;-;,;-;-;-;-;-;,;-;-;-;;;-;;-;-;-;!name%20like%20%22clever%%22%20and%20unit=%22g%22%20and%20quantity%3E=200%20order%20by%20numPrices%20desc&l=-;.;name-similarity;-&c=2023-06-19;-;2017-01-01;-;-&d=

All products whose current price is lower than the last price where the current price was set in June 2023.

!price < price1 and date like "2023-06%"

https://heisse-preise.io/index.html?f=-;-;-;-;-;-;-;-;-;-;-;-;-;;;-;;-;-;-!price%20%3C%20price1%20and%20date%20like%20%222023-06%%22&l=-;.;price-asc;-&c=2023-06-19;-;2017-01-01;-;-&d=

Other functions are also available:

hasPriceChange (priceHistory , startDate , endDate): returns "true" if the product had a price change in the specified period. The endDate can be omitted, then today's date is assumed.

hasPriceChangeLike(priceHistory, date): returns true if the product has a price change on a date similar to the given date.

Example:
All products that had a price change between "2023-05-01" and "2023-05-30" on the MPREIS chain:

!hasPriceChange(priceHistory, "2023-05-01", "2023-05-30") and `store`="mpreis"

https://heisse-preise.io/index.html?f=-:-:-:-:-:-:-:-:-:-:-:-:-:;:-:-:-:-!hasPriceChange(priceHistory,%20%222023-05-01%22,%20%222023-05-30%22)%20and%20`store`=%22mpreis%22&l=-;.;price-asc;-&c=2023-06-19;-;2017-01-01;-;-&d=

All products that had a price change in 2018-05:

!hasPriceChangeLike(priceHistory, "2018-05")

https://heisse-preise.io/index.html?f=-:-:-:-:-:-:-:-:-:-:-:-:-:;:-:-:-:-!hasPriceChangeLike(priceHistory,%20%222018-05%22)&l=-;.;price-asc;-&c=2023-06-19;-;2017-01-01;-;-&d=

All products with less than 7 days between the current price date and the last price date.

!daysBetween(date, date1) < 7