Advanced Ratings & Calculation Syntax

se this page to configure a "rating" sytem to evaluate tracker items or wiki pages. Introduced in , the advanced rating feature allows for more ontrol over the aggregation of scores. You will also see in this documentation page how to use the **calculations syntax**, which also applies at the .

o access

Click the **Ratings** icon  on the

or

Access **http://example.org/tiki-admin.php?page=rating**

Related Topics

-
-
-

ote

Tiki currently supports sorting through advanced rating in:

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-
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- See also

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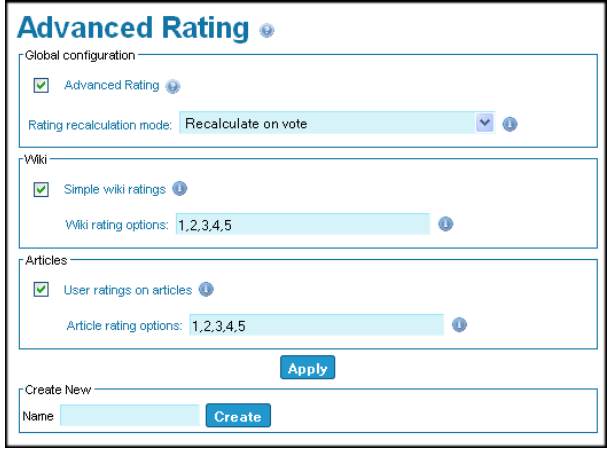
Note

Tiki Calculations started out as an advanced rating system, and has since evolved into a powerful general purpose calculations system.



Advanced Ratings page

Setting	Description	Default
Global configuration		
Advanced Rating	Enable the internal rating system, used for calculating values from trackers, articles, or other features.	
Rating recalculation mode:	Determines when and how rating aggregates are recalculated: * **On vote** (default): indicates that the score for the object should be recalculated every time a vote is performed. This option is suitable for sites with lower volumes and relatively simple calculation methods when ratings are used. * **Random on load**: will cause a few scores to be calculates on page load on a random basis (odds and count can be configured to adapt to site load). This option is suitable for calculation rules involving time that must be recalculated even if no new votes occurred. * **Random on vote** is similar to random on load, but will recalculate multiple scores (not necessarily including the current object) when a vote is performed. It is suitable for similar situations. The best option will depend on site load. * **Periodic**: is the best option for heavy load sites, making sure all calculations are done outside the web requests. A cron job must be set-up manually by the site's administrator. A sample script is available at the end of this page. Depending on the site load, some options may be better than others; on large volume sites, we recommend **cron job**. The **Recalculate on vote** recalculation may be inaccurate if rating calculation depends time. **Before any attempt to re-index the object:** Ties into the and updates the calculation at index-time.	Recalculate on vote

Setting	Description	Default
Recalculation odds (1 in X):		
Recalculation count:		
Wiki		
Simple wiki ratings	Enable a simple rating bar at the top of each wiki page.	
Wiki rating options:	List of options for the simple wiki ratings.	1,2,3,4,5
Articles	Enable a simple rating bar at the top of each articles page.	
User ratings on articles		
Article rating options:		

he feature must first be enabled through this same administration panel. Along with the feature, a few options are available. Among them, the score ecalculation period must be defined. These are the available options:

- **On vote (default)** indicates that the score for the object should be recalculated every time a vote is performed. This option is suitable for sites with lower volumes and relatively simple calculation methods when ratings are used.
- **Random on load** will cause a few scores to be calculates on page load on a random basis (odds and count can be configured to adapt to site load). This option is suitable for calculation rules involving time that must be recalculated even if no new votes occurred.
- **Random on vote** is similar to random on load, but will recalculate multiple scores (not necessarily including the current object) when a vote is performed. It is suitable for similar situations. The best option will depend on site load.
- **Periodic** is the best option for heavy load sites, making sure all calculations are done outside the web requests. A cron job must be set-up manually by the site's administrator. A sample script is available at the end of this page.

or the random options, the odds of recalculating must be specified as a dice roll. For each occurrence of a recalculation, a limit to how many scores can e calculated must be specified to avoid the hang-up effect on the page load.

he value ranges for each object type can also be specified through the administration panels.

he common *sort_mode* parameter to lists can be used to activate sorting using advanced ratings. To do so, the sort mode must be set to *dv_rating_X_asc* or *adv_rating_X_desc* where *X* is the ID of the rating configuration. The default sort can also be set to advanced ratings in the dministration panel where applicable.

Calculation configuration

rom the administration panel, new calculations can be added. Initially, only the name is required. When created, the calculation will contain suitable efault values.

or wiki pages:

hus, visitors can provide feedback like:

- Did this page help you solve the issue?
- Was this page easy to understand?

Sorting items according to advanced rating

ote that the sort mode to use when needing to sort by advanced rating is either adv_rating_xx_asc or adv_rating_xx_desc, where xx is the ratingConfigId

Set-up

y default, each calculated value is kept for 1 hour (3600 seconds). This limit does not apply when recalculating on vote, but is used for every other echnique to avoid recalculating the same scores over and over again.

he calculation is defined as a small piece of code, similar to functional languages, which is very close to mathematical representations. Creating custom ormulas is expected to require some mathematical skills. However, this documentation should provide examples for most frequent cases.

he editor in the administration panel performs extensive validation and will make it impossible to save the formula unless it can be evaluated. Checks ar
erformed for:

- Syntax errors
- Unknown functions
- Missing arguments
- Invalid argument values
- Unknown input variables

Default formula

```
(rating-average (object type object-id))
```

can be altered to limit the vote consideration to a limited time span, 30 days for example.

Recent votes only

```
(rating-average (object type object-id) (range (mul 3600 24 30)) )
```

the language, spaces do not matter. Only the parenthesis indicate structure. **rating-average** is a function that fetches the ratings for a given object.
ype and *object-id* are standard variables fed when calculating a rating. **object** and **range** are configuration options of the function.

ul is a mathematical function. (mul 3600 24 30) is equivalent to 3600*24*30.

he functions can be combined in various ways. For example, we could calculate a score that considers the votes from the past month, but gives extra
mphasis on the recent ones.

Combined vote duration

```
(add (rating-average (object type object-id) (range (mul 3600 24 30))) (rating-average (object type object-id) (range (mul 3600 24 7))) )
```

ven though the votes are 1-5, the final score can be on an entirely different scale. The language is also extensible if the calculation needs to be combine
ith other factors or weight. See .

ll available options are documented in the following section.

Syntax

General Reference

Sample and use case

add (Sum)

erforms a simple sum accepting multiple input.
is possible to chain the calculation with several values.

Simple addition
(add 3 4) -> 7 (add (add 3 4) 5) -> 12 (add 3 4 5) -> 12 (add 4 0.5) -> 4.5

he calculation can be done directly using tracker field permaname for the same tracker.

Using tracker field permaname
permaname_1 value = 1 permaname_2 value = -1 permaname_3 value = 4 (add permaname_1 permaname_2) -> 0 (add (permaname_1 permaname_ permaname_3) -> 4

sub (Substract)

erforms a simple substraction accepting multiple input

Examples
(sub 3 4) -> -1 (sub (sub 3 4) 5) -> -6 (sub 3 4 5) -> -6 (sub 4 0.5) -> 3.5

div (Divide)

erforms a simple division accepting multiple input values.

Examples
(div 3 4) -> 0.75 (div (mul 3 10) 5) -> 6 (div 30 5 3) -> 2 (div 4 0.5) -> 8

mul (Multiply)

erforms a simple multiplication accepting multiple input values.

Examples
(mul 3 4) -> 12 (mul (mul 3 4) 5) -> 60 (mul 3 4 5) -> 60 (mul 4 0.5) -> 2

and / or

nd

nsures all elements evaluate to true.

Examples
(and 3 2 1 2 3) -> 1 (and 2 3 0 2) -> 0

r

nsures that at least one element evaluates to true. Elements are evauated sequentially until a false element is found. Others are left unevaluated.

Examples
(or 3 2 1 2 3) -> 1 (or 2 3 0 2) -> 1 (or 0 0) -> 0

avg

alculates the average of multiple values. All entries in the list will be flattened if arrays are present.

Examples

(avg 1 2 3) -> 2 ... given list contains [1, 2, 3] (avg list) -> 2

ote: Unless told otherwise `avg` treats empty values and zeros the same, but you can use `(if)` to check like this:

Empty example

(if (not (equals calcValue_3 "")) (avg calcValue_1 calcValue_2 calcValue_3) (if (not (equals calcValue_2 "")) (avg calcValue_1 calcValue_2) (if (not (equal calcValue_1 "")) calcValue_1)))

vg can be used together with other fields values as well as an item-list field displaying values from another tracker.

Calculate the average of values from a different tracker in an item-list

The field permanameListofnumbers contains values 1 and 3 (grabbed from tracker permanameNumbersfromanother tracker) (avg (for-each (list permanameListofnumbers) (formula (concat permanameNumbersfromanother tracker)))) -> 2

clean

lean accents and special characters from a string of text, replacing the accented characters with the non-accented equivalent where possible. Added in

Examples

(clean (str foó barça caña)) -> "foo barca cana"

coalesce

eturns the first non-empty value from the list.

Examples

(coalesce 3 4) -> -3 (coalesce (sub 3 3) 5) -> 5 (coalesce 0 0 (str) -10) -> -10 (coalesce 0 0 0 0 0) -> 0

comment

ny comment block is stripped from the formula at parse-time

Examples

(mul 1 2 (comment Simple enough?)) -> 2

concat

oncatenates a string of text. (new in Tiki12)

ote: The quoted string syntax was included in .

Examples

(concat (str $) 1234) -> "$1234" (concat 14 (str %)) -> "14%" (concat 14 "%") -> "14%"

contains

earches for a value within a vector of values (new in Tiki15.0, backported to Tiki14.2 and Tiki12.5).

Examples

(contains 4 (1,2)) -> 0 (contains 4 (2,4)) -> 1

p to Tiki 25: Note that if you are using an argument value in here, you would need to eval and then put brackets around to make it work.

args.values_by_permname.version: 305,306

(contains 307 (eval(args.values_by_permname.version))) -> 0 (contains 305 (eval(args.values_by_permname.version))) -> 1 (contains 30 (eval(args.values_by_permname.version))) -> 0

iki 26+: arguments don't need to be eval-ed anymore. The previous example has this syntax now:

args.values_by_permname.version: 305,306

(contains 307 args.values_by_permname.version) -> 0 (contains 305 args.values_by_permname.version) -> 1 (contains 30 args.values_by_permname.version) -> 0

count

eturns the total number of entries within an array passed as argument.

Examples

(count results) -> 5

ou can use it with split-list to count the number of items in a list or in an item-link (should work with dynamic items list).

Counting item in item-link

Let say I have an item-link permanameBooks with 12 items linked. (count (split-list (content permanameBooks) (separator ,) (key a))) -> 12

nly one key need to be created it will populate properly

Currency

ew in :

llows to convert a calculation into currency field. Expects 3 arguments. First is the calculation of the amount. Second is the source currency - i.e. which

urrency is the amount in? Third is the currency field.

Examples

(currency (cal-of-the-amount) (sourceCurrency) currencyFieldPermName)

you use the you can retreive sourceCurrency string from currencyFieldPermName (ie: XUSDCAD) using this formula:

Get the last 3 char of a value in a tracker

(substring currencyFieldPermName -3)

Examples

(currency (cal-of-the-amount) (substring currencyFieldPermName -3) currencyFieldPermName)

currency-convert

ew in :

his adds 2 things:

1. currency-convert math function which will allows us to convert specific math functions to CAD when you need only CAD values.
2. using default tracker for exchange rates when parsing a math function output like 123USD without a currency field context. The tracker must contain 'exchange rate' in its name in order to be found. This will be until we have a proper concept of .

Date and Time

lote about Date and Time and timezone

me stored in the DB or in the Search Index is always UTC. (converted based on the Tiki settings)

ki convert back the value to display based on the Tiki preferences or the user preferences settings related to timezone.

alculation are done on the value (unix timestamp from the database) in UTC and date formulas have to include this factor to allow exact calculation.

or example, for a server with a timezone set to Paris (UTC+1) the following formula will return today’s date with the time of the field “momentDate” -1 our (Difference between Europe/France timezone and UTC).

Wrong
(str-to-time (concat (date (str Y-m-d)) (date (str H:i) momentDate)))

o allow the calculation to be performed on the stored time in the database we need to specify that it is UTC. The following formula will return today’s dat ith the time of the field “momentDate” as displayed.(and expected)

Right
(str-to-time (concat (date (str Y-m-d)) (date (str H:i) momentDate) (str UTC)))

ki will know to convert back the value to display it following Tiki preferences.

Date

ew in Tiki14.1:

akes two optional arguments, format and timestamp and uses the PHP **date** function. See for reference. Format defaults to "U" which is the Unix mestamp, and the timestamp defaults to "now".

Date Examples
(date) > Returns "1438358437" currently (date (str Y-m-d H:i:s)) > Returns "2015-07-31 17:00:43" currently (date (str r) theTimeAndTheDate) > Returns "Tue, 16 Jun 2015 09:23:09 +0100" for instance, where theTimeAndTheDate is the permanent name of a tracker field in the same tracker.

Date-diff

New in Tiki26

Calculates the difference between two dates as unix timestamps. Optionally supply a third parameter to make it calculate the difference between two dates calculating only working days. See str-to-time for more info about calculation of working days.

equals

Compares multiple values.

Examples
(equals 2 (add 1 1) (sub 4 2)) -> 1 (equivalent of 2 == 1+1 && 2 == 4-2) (equals (add 1 1) 3) -> 0

for-each

For a list of value pairs, such as the output of *split-list*, evaluates a formula for each set of values, returns the list of results.

Within the formula, variables coming from the list will be used first. Fallback will be on the other variables available in the execution context.

As of Tiki18, list items can be the output of ItemsList tracker field where individual formula fields are the linked fields from the other tracker. See example below.

Examples
... given items contains [{a: 1, b: 2, c: 3}, {a: 2, b: 3, c: 4}] (for-each (list items) (formula (mul a b c))) -> [6, 24] ... given items contains [{a: 1, b: 2, c: 3}, {a: 2, b: 3, c: 4}] ... and d contains 10 (for-each (list items) (formula (mul c d))) -> [30, 40] ... given trackerDetails is an ItemsList field pointing to another tracker with a field detailsAmount ... and particular tracker item has 2 linked items with detailsAmount = 30 and 40 (add (for-each (list trackerDetails) (formula (concat detailsAmount)))) -> 70 This formula sums the detailsAmount column from the other tracker for all items linked from this tracker's item.

hash

enerates a hash based on multiple values. Used primarily to generate aggregate hashes in the . Note that because it is a hash, the xact value coming out does not matter. Only that given the same parameter, it will produce the same value.

Examples

(hash 1) -> [sha1("1")] (hash 1 2 3 4) -> [sha1("1/2/3/4")] (hash 1 2 (map (a 3) (b 4))) -> [sha1("1/2/3/4")]

f

onditionally evaluates a branch.

Examples

(if (equals 2 2) 42 -1) -> 42 (if (equals 2 1) 42 -1) -> -1

ou can use it with STR to apply a condition on a string within another field.
E: if permanameFieldName contain "Bernard"

If used with a string to show another field

(if (equals permanameFieldName (str Bernard)) permanameFieldMoney (str 0)) -> Will output the value of permanameFieldMoney if true
(permanameFieldName = Bernard) -> Will output 0 if this is not true (permanameFieldName ≠ Bernard)

sEmpty

ew in :

Examples

(IsEmpty 1) -> 0 (IsEmpty 0) -> 1

ou can also use a tracker field permaname as true or false value or as returned value from the tracker item.
ere we combine if, equals and is empty to create a different output for each case else the default output (0 or 1) will be returned.

(if (equals 1 (IsEmpty permaname)) (str empty) (str notempty)) if the field has no value (1) -> empty if the field has a value (0) -> notempty

Empty may also be used to test if an array is empty.
owever in some case you may have an error. coalesce seems to work better for testing and displaying tracker field values.

ess / more

ess-than

ew in .1 and .5: Checks whether the first value is less than the second.

Examples

(less-than 3 (add 2 2)) -> 1 (less-than (add 2 2) 3) -> 0

nore-than

ew in .1 and .5: Checks whether the first value is more than the second.

Examples

(more-than 3 (add 2 2)) -> 0 (more-than (add 2 2) 3) -> 1

ower

onverts string to lower case.

Examples

(lower Foo) -> foo

map

enerates a map (or dictionary).

Examples

(map (key1 1) (key2 2) (key3 (str value3))) -> {"key1": 1, "key2": 2, "key3": "value3"}

Not

ew in :

number-format

ormat a number with grouped thousands. See PHP's number_format function for exact arguments. New in Tiki18.

Examples

(number-format 123456.78) -> "123,456.78" (number-format 120.334 (str 3)) -> "120.334" (number-format 120.334 (str 0)) -> "120" (number-format 123456.78 (str 2) (str ,) (str)) -> "123 456,78"

pad

ew in committed in

akes two to four arguments, input string, output length, padding string (defaults to a space) and padding type (defaults to right)
ee for more info.

This example right pads prices in a simple products tracker for sorting and filtering

(pad productsPrice 8 (str 0) (str left))

round

ounds to a specific number of digits (new in Tiki12)

Examples
(round 4.556234342234 2) -> 4.56 (round 4.556234342234) -> 5

str

enerates a static string when needed and the processor attempts to process the string as a variable. Any arguments will be concatenated using spaces.

ote: The quoted string syntax was included in .

Examples
(str hello-world) -> "hello-world" (str hello world) -> "hello world" (str hello world foobar) -> "hello world foobar" (str (mul 2 3) "= 6") -> "6 = 6" (str some text with new line~nl~) -> "some text with new line\n"

he following is useful to add a space between calculation or values from different sources (tracker field value)

To add a space
(str) (str hello)(str world) -> "helloworld" (str hello)(str)(str world) -> "hello world"

str-to-time

arse about any English textual datetime description into a Unix timestamp. See PHP's strtotime function for more details on valid formats and options. ew in Tiki18.

Examples
(str-to-time (str 2017-06-05)) -> "1496610000" (date (str Y-m-d) (str-to-time (str +1 day) (str 2017-05-29))) -> "2017-05-30"

Numbers of days between a date in a field and now

(round (div (sub (str-to-time permanameDate) (date)) 86400) 0)

Working days example

(str-to-time (str +10 working days) (str-to-time (str 2024-12-20)))

ew in Tiki 26: in order to make use of business/working days calculation, you should create a Holidays calendar, add the event dates that are holidays might be one-time, single-day, multi-day events or recurring events like every weekend Sat/Sun, for example). Then, you can choose this holidays alendar in Tiki admin calendar section to be the default holidays calendar. Then, any calculation involving 'business' or 'working' days will actually xclude any days marked as holidays.

str-replace

eplace substring in a string. See PHP's str_replace function for exact arguments. New in Tiki18.

Examples

(str-replace (str foo) (str bar) (str hello foo)) -> "hello bar"

preg-replace

erform a regular expression search and replace on a field value. The preg-replace math function is available in Tiki 21+

Using preg-replace to return part of a string before a | (pipe

The field permanameMonthAndUser contain "June | Bernard" (preg-replace (str /\|.*$/) (str) permanameMonthAndUser) -> "June"

Using preg-replace to return part of a string after a | (pipe

The field permanameMonthAndUser contain "June | Bernard" (preg-replace (str /^.*?\|/) (str) permanameMonthAndUser) -> "Bernard"

split-list

roduces a multi-dimensional array out of a text string. Each line is expected to be an independent value, each line will be split by a separator into the pecified keys.

Examples

... given str contains a list of 3 comma-separated values (split-list (content str) (separator ,) (keys a b c)) -> [{a: 1, b: 2, c: 3}, {a: 2, b: 3, c: 4}]

subtotal

pecial function to aggregate data in a table. See for more details.

upper

onverts string to upper case.

Examples

(upper Bar) -> BAR

Advanced Rating-specific Reference

rating-average and rating-sum

he rating functions calculate the score from the rating history table. Each rating performed on the site is kept in the database and can be used to alculate custom ratings on. The various options allow to adapt the score calculation to reflect the importance on the site, whether it is to support quality mprovement on documentation or to rank incoming data on a feed aggregator.

- **object**, mandatory and always *(object type object-id)* in this context.
- **range**, to limit how long votes are considered. Argument is provided as a number of seconds.
- **ignore**, with *anonymous* as an argument to only consider votes from registered users.
- **keep**, to only consider one vote per visitor. Unless the option is present, all of the votes are taken into account. The option can be either *latest* or *oldest* to indicate which one to keep.

- **revote** can be specified if **keep** is specified. Indicates the time period required between votes. For example, users could be allowed to vote more than once per day, but only their latest vote each day would be considered, if revote is set to mul(24 3600). If the user voted yesterday as well as today, both votes will be counted.

article-info

ulls information from an article to include in the calculation. The first argument must always resolve to 'article'. If any other value, the calculation will be kipped for the evaluated object, making the formula type-specific.

vailable properties:

- rating, the static rating attached to the article
- view-count
- age-second
- age-hour
- age-day
- age-week
- age-month

Examples

(article-info type object-id rating) (article-info (str article) 42 age-month)

attribute

ulls information from the generic object attributes.

Examples

(attribute (object type object-id) (property tiki.proposal.accept)) -> [value for page in a rating calculation] (attribute (object (str wiki page) 14) (property tiki.proposal.accept) (default 0)) -> [value for page id 14]

tracker-field

ulls information from the tracker item. The field value is converted to numeric value automatically. Zero is provided if the value is not found or napplicable.

Examples
(tracker-field (object (str trackeritem) 42) (field priority)) -> [value contained in the tracker item field with permanent name ''priority'' from tracker iter with object Id 42]

×

⚠ Item Link and Dynamic Item list values

If you grab directly the information from an Item Link and Dynamic Item List using the permaname the result will be the value of the field in this tracker and not the value of the field from the remote tracker.

You have to use the following to pull the "real" value of an item coming from an item link and an item dynamic list field type

ou can pull the value of an item coming from an item link and an item dynamic list field type (not tested on item list). This imply using the permaname o he item link tracker field and the permaname of the field that contain the value (in the other tracker).

value form item link item
(tracker-field (object (str trackeritem) permaname_thistrackerfield) (field permaname_othertrackerfield))

category-present

ives 1 in score of every listed category present on the object.

Examples
(category-present (object type object-id) (list 3 4)) -> [0, 1 or 2 - Depending on how many of categories 3 or 4 are on the object]

Appendix

When unified search is used, recalculation can be configured to be done during re-indexing, removing the need for this script.

Cron job