Modul:Gapnum

This module is used by Vorlage:Tl.

Use in other modules

gaps

The gaps function can be useful for formatting in other modules that work with displaying large numbers.

```
local gaps = require('Module:Gapnum').gaps
```

Using the gaps function, the first argument is the number to format. The second argument can be a table with keys that tell the module how to format. The table keys that can be used are:

- gap - a number with CSS units (px, em, en, etc) that define the size of the gap between numbers. If blank, the module will use `0.25em`.
- prec - a number that determines the precision of the decimal part of the number. If the precision is less than the number of digits, extra digits will be removed without rounding; if it is more, zeroes will be added to the end to create the desired precision. If blank, the module will use `-1`, which means the precision will be the same as the number given; no digits added or removed.

Note that the return statement is a table. This means more styling or text can be added to the wrapper span tag, but it may also mean that `tostring()` may be required when used in other modules.

```
local gaps = require('Module:Gapnum').gaps

function example()
local n = 123456.78900011
-- Example for just simple formatting of a number
-- n_gaps will use the default, .25em gaps and no change in precision
-- The result will have its gaps created with inline css
-- But the result would look like:
-- 123 456.789 000 11
local n_gaps = gaps(n)

-- Different gap size
-- These will format n into the same groups as above
-- But the spaces between the groups will be larger and smaller, respectively
local n_big_gaps = gaps(n, {gap='1em'})
local n_small_gaps = gaps(n, {gap='1px'})

-- Different precision
-- n_prec_5 will use the number 123456.78900
-- The result would look like:
-- 123 456.789 00
local n_prec_5 = gaps(n, {prec=5})
```

```
-- n_prec_10 will use the number 123456.7890001100
-- The result would look like:
-- 123 456.789 000 1100
local n_prec_10 = gaps(n, {prec=10})

-- Both different gaps and precision can be used:
local n_big_5 = gaps(n, {gap='1em', prec=5})
local n_small_10 = gaps(n, {gap='1px', prec=10})
end
```

groups

The `groups` function can be used in other modules to separate a number into groups as `gaps` does, but instead of a formatted `string`, the function will return tables whose elements are the separated groups.

```
local groups = require('Module:Gapnum').groups

function example()
-- This will return one table:
-- {123,456}
local n1 = groups(123456)

-- This will return two tables, each assigned to a different variable:
-- n2a will be:
-- {1,234}
-- n2b will be:
-- {567,89}
local n2a,n2b = groups(1234.56789)

-- This will return two tables:
-- An integer part is always returned, even if it is 0
-- n3a will be:
-- {0}
-- n3b will be:
-- {123,4567}
local n3a,n3b = groups(0.1234567)

-- Just like the other functions, a precision can be defined
-- precision is simply the second parameter
-- n4a will be:
-- {123}
-- n4b will be:
-- {456,700,00}
local n4a,n4b = groups(123.4567,8)
end
```

```
local p = {}

local getArgs

function p.main(frame)
```

```
        if not getArgs then
                getArgs = require('Module:Arguments').getArgs
        end

        local args = getArgs(frame, {wrappers = 'Template:Gapnum'})
        local n = args[1]

        if not n then
                error('Parameter 1 is required')
        elseif not tonumber(n) and not tonumber(n, 36) then -- Validates any number with base ≤ 36
                error('Unable to convert "' .. args[1] .. '" to a number')
        end

        local gap = args.gap
        local precision = tonumber(args.prec)

        return p.gaps(n,{gap=gap,prec=precision})
end

-- Not named p._main so that it has a better function name when required by Module:Val
function p.gaps(n,tbl)
        local nstr = tostring(n)
        if not tbl then
                tbl = {}
        end
        local gap = tbl.gap or '.25em'

        local int_part, frac_part = p.groups(n,tbl.prec)

        local ret = mw.html.create('span')
                                                        :css('white-space','nowrap')
                                                        -- No gap necessary on first group
                                                        :wikitext(table.remove(int_part,1))

        -- Build int part
        for _, v in ipairs(int_part) do
                ret:tag('span')
                                :css('margin-left',gap)
                                :wikitext(v)
        end

        if frac_part then
                -- The first group after the decimal shouldn't have a gap
                ret:wikitext('.' .. table.remove(frac_part,1))
                -- Build frac part
                for _, v in ipairs(frac_part) do
                        ret:tag('span')
                                        :css('margin-left',gap)
                                        :wikitext(v)
                end
        end
```

```
	return ret
end

-- Creates tables where each element is a different group of the number
function p.groups(num,precision)
	local nstr = tostring(num)
	if not precision then
		precision = -1
	end

	local decimalloc = nstr:find('.', 1, true)
	local int_part, frac_part
	if decimalloc == nil then
		int_part = nstr
	else
		int_part = nstr:sub(1, decimalloc-1)
		frac_part = nstr:sub(decimalloc + 1)
	end
	-- only define ret_i as an empty table, let ret_d stay nil
	local ret_i,ret_d = {}
	-- Loop to handle most of the groupings; from right to left, so that if a group has less t
	while int_part:len() > 3 do
		-- Insert in first spot, since we're moving backwards
		table.insert(ret_i,1,int_part:sub(-3))
		int_part = int_part:sub(1,-4)
	end
	-- handle any left over numbers
	if int_part:len() > 0 then
		table.insert(ret_i,1,int_part)
	end

	if precision ~= 0 and frac_part then
		ret_d = {}
		if precision == -1 then
			precision = frac_part:len()
		end
		-- Reduce the length of the string if required precision is less than actual preci
		-- OR
		-- Increase it (by adding 0s) if the required precision is more than actual
		local offset = precision - frac_part:len()
		if offset < 0 then
			frac_part = frac_part:sub(1,precision)
		elseif offset > 0 then
			frac_part = frac_part .. string.rep('0', offset)
		end

		-- Allow groups of 3 or 2 (3 first)
		for v in string.gmatch(frac_part,'%d%d%d?') do
			table.insert(ret_d,v)
		end
		-- Preference for groups of 4 instead of groups of 1 at the end
		if #frac_part % 3 == 1 then
```

```
                        if frac_part:len() == 1 then
                                ret_d = {frac_part}
                        else
                                local last_g = ret_d[#ret_d] or ''
                                last_g = last_g..frac_part:sub(-1)
                                ret_d[#ret_d] = last_g
                        end
                end
        end

        return ret_i,ret_d
end

return p
```