

Toggle menu
Blue Gold Program Wiki

Navigation

- [Main page](#)
- [Recent changes](#)
- [Random page](#)
- [Help about MediaWiki](#)

Tools

- [What links here](#)
- [Related changes](#)
- [Special pages](#)
- [Permanent link](#)
- [Page information](#)

Personal tools

- [Log in](#)

personal-extra

Toggle search

Search

Random page

Views

- [View](#)
- [View source](#)
- [History](#)
- [PDF Export](#)

Actions

Module:Exponential search

From Blue Gold Program Wiki

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Documentation for this module may be created at [Module:Exponential search/doc](#)

```

-- This module provides a generic exponential search algorithm.

local checkType = require('libraryUtil').checkType
local floor = math.floor

local function midPoint(lower, upper)
    return floor(lower + (upper - lower) / 2)
end

local function search(testFunc, i, lower, upper)
    if testFunc(i) then
        if i + 1 == upper then
            return i
        end
        lower = i
        if upper then
            i = midPoint(lower, upper)
        else
            i = i * 2
        end
        return search(testFunc, i, lower, upper)
    else
        upper = i
        i = midPoint(lower, upper)
        return search(testFunc, i, lower, upper)
    end
end

return function (testFunc, init)
    checkType('Exponential search', 1, testFunc, 'function')
    checkType('Exponential search', 2, init, 'number', true)
    if init and (init < 1 or init ~= floor(init) or init == math.huge)
then
        error(string.format(
            "invalid init value '%s' detected in argument #2 to "
            ..
            "'Exponential search' (init value must be a positive
integer)",
            tostring(init)
        ), 2)
    end
    init = init or 2
    if not testFunc(1) then
        return nil
    end
    return search(testFunc, init, 1, nil)
end

```

Retrieved from

https://www.bluegoldwiki.com/index.php?title=Module:Exponential_search&oldid=1764

Namespaces

- [Module](#)
- [Discussion](#)

Variants

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Blue Gold Program Wiki

The wiki version of the Lessons Learnt Report of the Blue Gold program, documents the experiences of a technical assistance (TA) team working in a development project implemented by the Bangladesh Water Development Board (BWDB) and the Department of Agricultural Extension (DAE) over an eight+ year period from March 2013 to December 2021. The wiki lessons learnt report (LLR) is intended to complement the BWDB and DAE project completion reports (PCRs), with the aim of recording lessons learnt for use in the design and implementation of future interventions in the coastal zone.

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