

The background of the slide features a complex, abstract pattern composed of various shades of gray and white rectangles of different sizes and orientations, creating a digital or pixelated effect.

Lua

Multi-paradigm programming language



Overview

- Lua is a simple, lightweight, embeddable scripting language.
- Often used in game development, embedded systems, etc.
- Interpreted open source language.



```
PLANET_POS = {x = 0, y = 0}
ANGLE = 0
DISTANCE = 30

-- UPDATE FUNCTION
FUNCTION UPDATE()
    ANGLE = ANGLE + 0.01
    PLANET_POS.x = COS(ANGLE) * DISTANCE
    PLANET_POS.y = SIN(ANGLE) * DISTANCE
END

-- DRAW FUNCTION
FUNCTION DRAW()
    CLEAR()
    CIRCLE(50 + PLANET_POS.x, 50 + PLANET_POS.y, 5)
END
```

History

- Lua was created in 1993 by Roberto Ierusalimschy, Luiz Henrique de Figueiredo and Waldemar Celes
- Lua's predecessors were the data-description/configuration languages Simple Object Language (SOL) and data-entry language (DEL)



Roberto Ierusalimschy

Key features

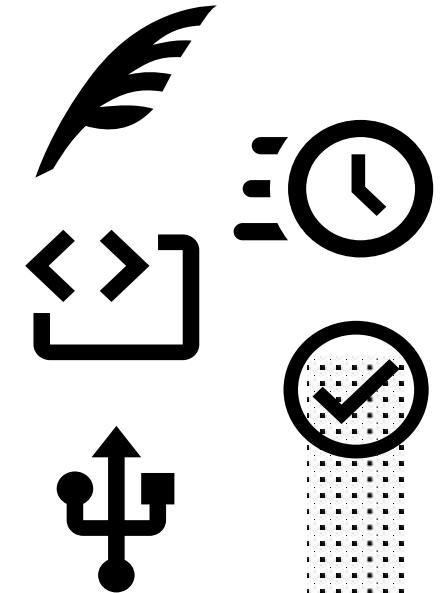
Lightweight: Small footprint (about 1MB in size)

Fast: Efficient performance, esp. with LuajIT

Embeddable: Easily integrated into other languages

Simple: Easy to learn and use

Portable: Runs on virtually any platform



Example

```
-- defines a factorial function

function fact (n)

    if n == 0 then

        return 1

    else

        return n * fact(n-1)

    end

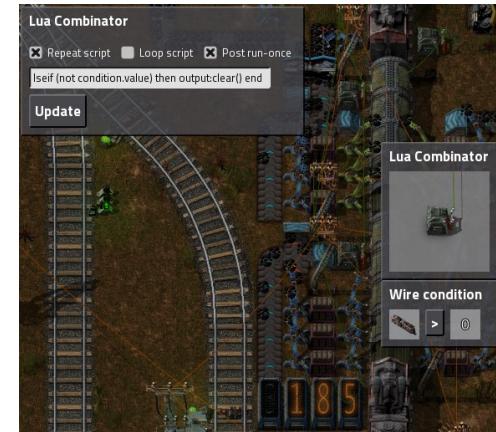
end

print("enter a number:")

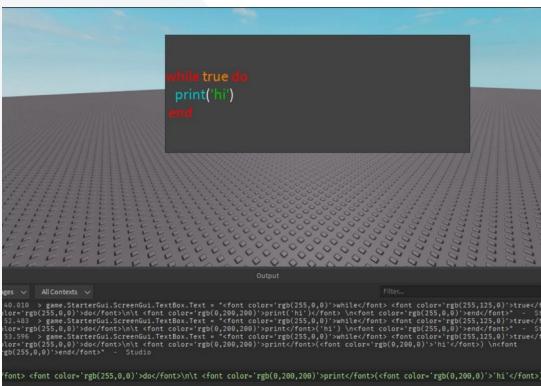
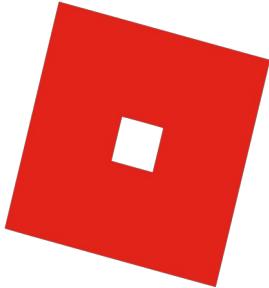
a = io.read("*number")          -- read a number

print(fact(a))
```

Embedded Lua



Embedded Lua



Lua Comparison

- Python: More features, but heavier and slower
- JavaScript: Web-focused, not as lightweight or embeddable
- Lua: Minimalistic, fast, and embeddable

When to Use Lua:

- When performance and size matter
- For embedding in applications



Thank you for your attention.