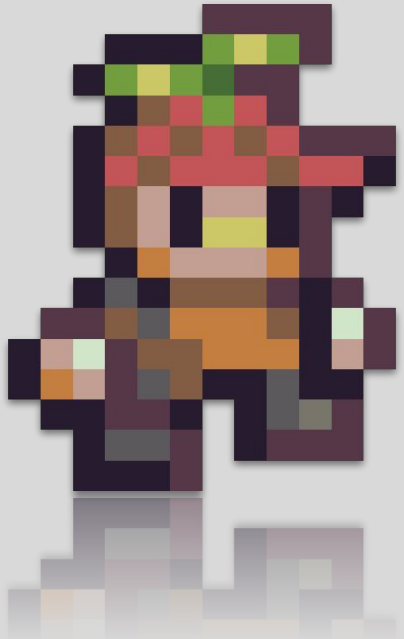
DungeonBots



Team Undead Pixels

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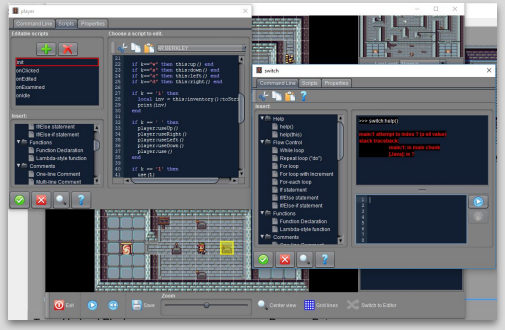
Overview

DungeonBots is the coding education game

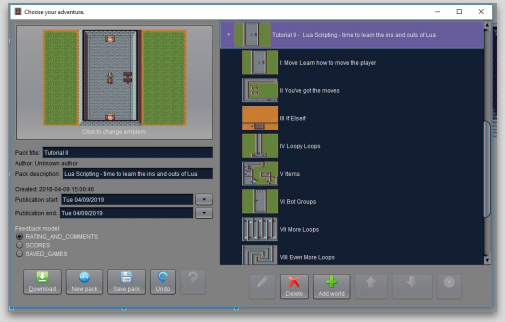
- Fills multiple functions
- Graphically stylish and interesting
- A curriculum delivery vehicle

Is it a level? Is it a lesson?

A game and game engine



An IDE



Lesson plans

A community

System Design

Game

Created our own game custom game engine with Java 8

- Advanced Lua scripting integrations using Java reflection and annotations
- Highly concurrent architecture

Created our own Level Editor from scratch

Website

Back end	Ruby-on-Rails
Front end	Bootstrap, SASS
Database	PostgreSQL
Development	Cloud9
Deployment	Heroku, AWS S3
API	custom

System Capabilities - Game

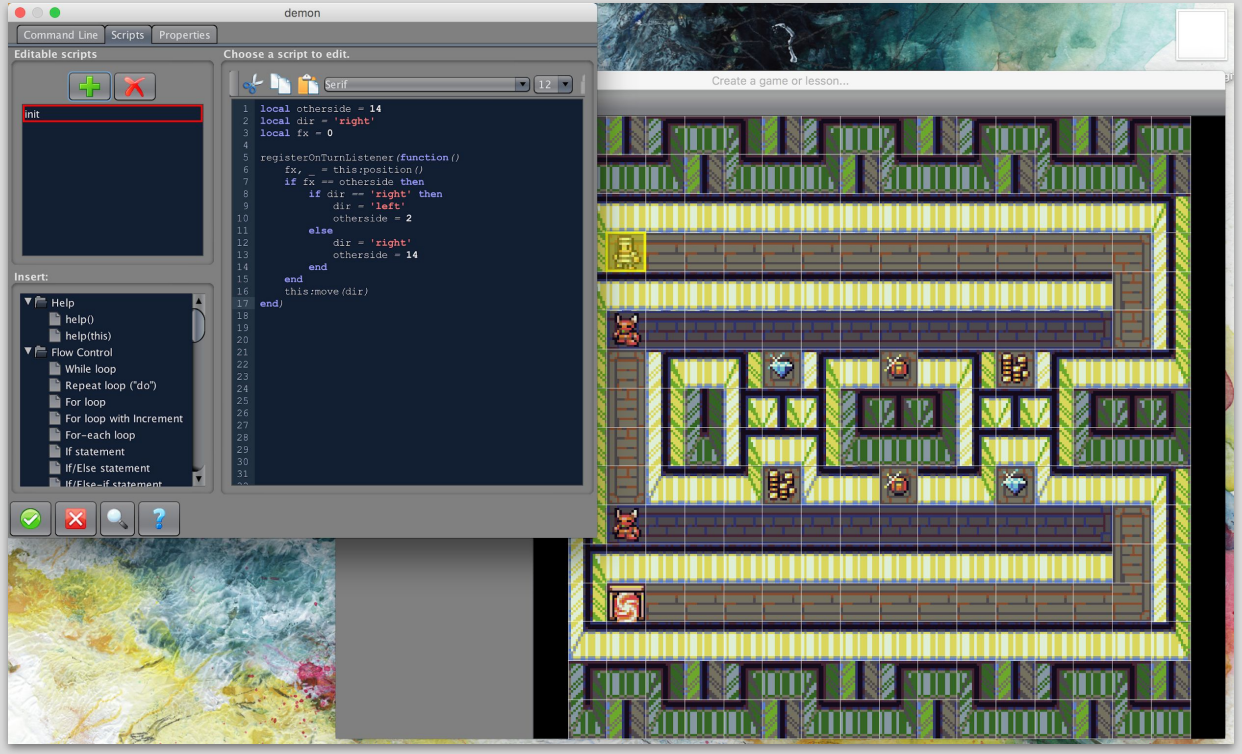
GUI level editor

Lua script editor

Lua grammar / syntax tool

Download levels from website in client

Author-defined help



System Capabilities - Website

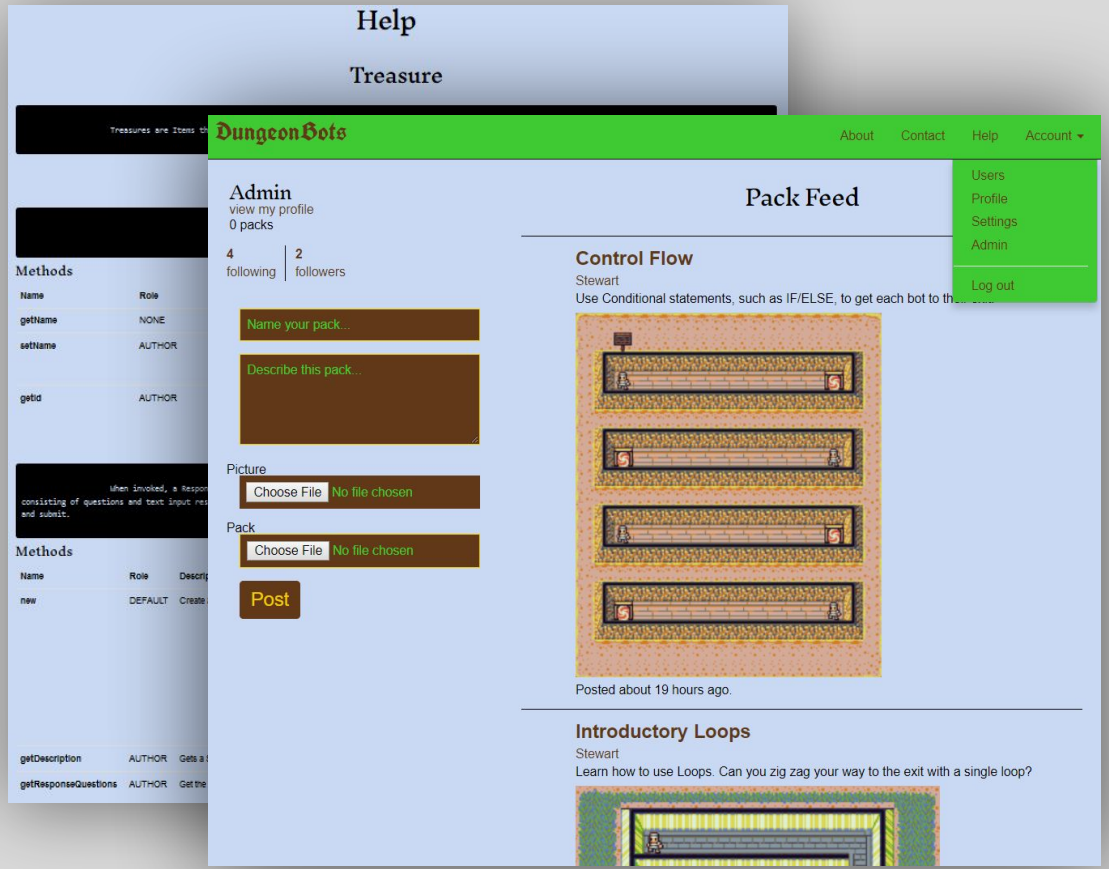
Upload & download Level Packs

Pack Feed of user content

Help content for in-game commands

Normal user features, security

Leave us your feedback!



System Limitations

- Supports deletion of entities, but no built-in combat system
- Large built-in library of tiles and entities, but doesn’t support custom assets
- Has GUI for generating code, but no autocompletion
- Pack size limitations on website

Unique Features

There’s nothing like this out there on the market

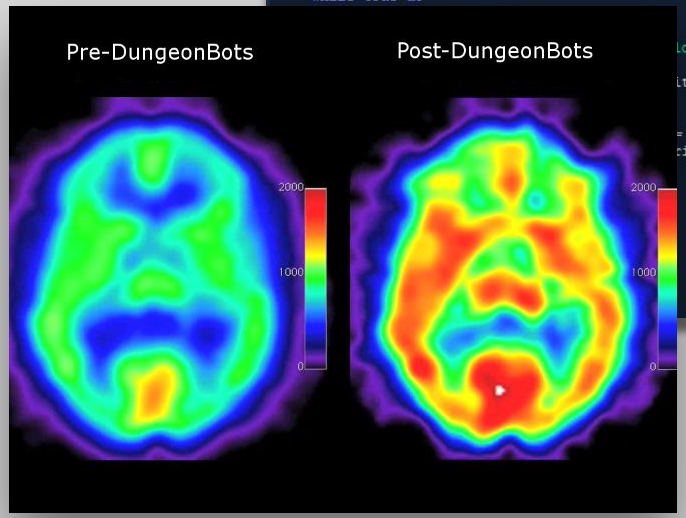
Learn to program by playing a game

Sandboxed coding environment per entity - every entity can have its own “brain”

Endlessly customizable

```
function PriorityQueue.push(item)
    local idx = #pq+1
    pq[idx] = item
    --Percolate up
    local parentIdx = intDivideBy2(idx)
    while parentIdx >= 1 do
        --player:say("idx:" .. idx .. "   parentIdx:" .. parentIdx)
        if pq[parentIdx].priority <= pq[idx].priority then break end
        pq[idx] = pq[parentIdx]
        pq[parentIdx] = item
        idx = parentIdx
        parentIdx = intDivideBy2(idx)
    end
end
function PriorityQueue.pop()
    local result = pq[1]
    pq[1] = pq[#pq]
    pq[#pq] = nil

    --Percolate down
    local idx = 1
    while true do
```



System Demo