

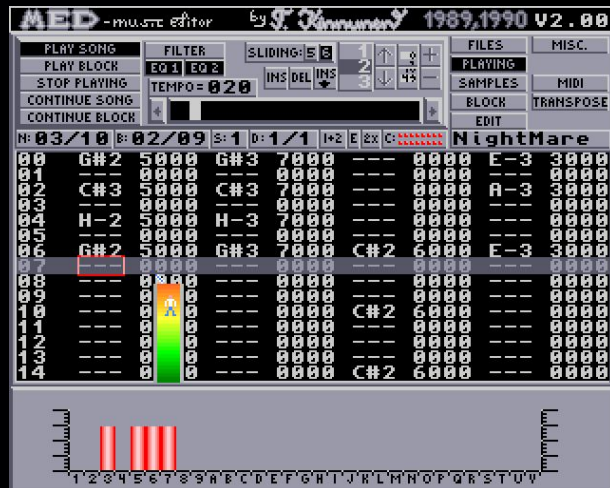
PICO-8

FANTASY CONSOLE

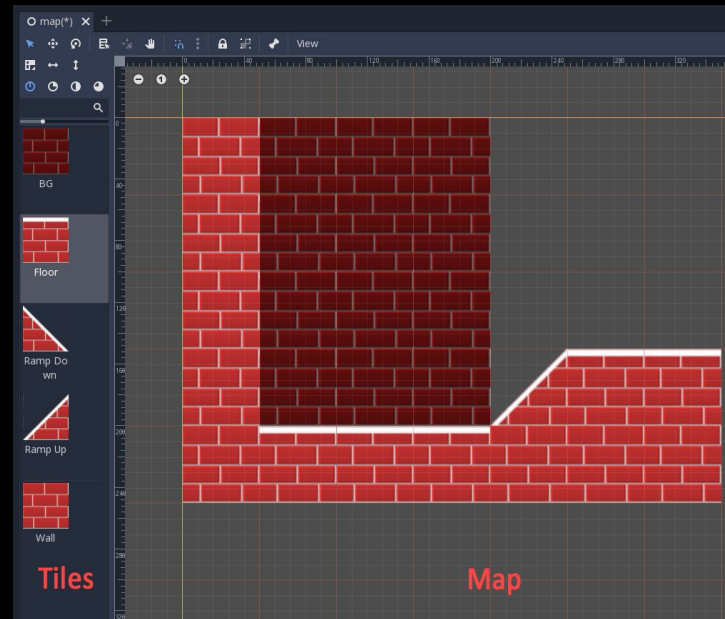
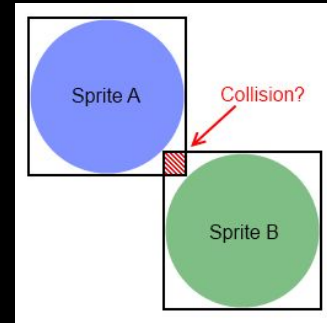
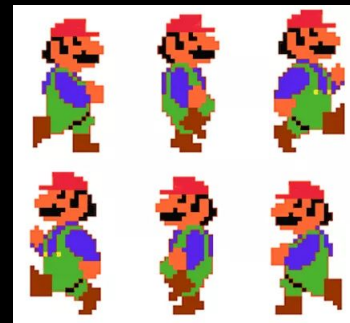


# BASE CONCEPTS

- SPRITE
- SPRITESHEET
- TILE
- TILEMAP
- ASSETS
- SFX
- FRAMERATE
- COLLISION
- MUSIC TRACKER



0	0	0	1	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	1	1	1	0	1	1	0	0	1	1	2	0	
0	0	0	0	1	3	2	1	2	1	2	0	3	2	3	4	2	3	3	3	1	1	2	3	2	3	0	3	1	2	3	
5	3	3	3	6	7	3	6	4	3	6	3	3	0	0	0	0	0	0	7	3	3	4	3	3	3	3	3	4	3	3	
8	8	8	8	0	0	0	0	0	3	0	4	3	0	0	0	0	0	0	0	0	0	3	0	7	6	0	7	6	4	3	
9	1	8	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	10	11	0	0	0	11	10	0	
9	8	8	0	0	0	0	0	0	0	0	4	0	8	12	12	8	0	0	0	0	0	0	11	8	0	0	0	8	11	0	
8	8	9	0	0	0	0	0	0	0	0	0	0	9	1	8	9	0	0	0	0	0	0	8	9	0	0	0	8	9	0	
1	8	8	0	0	0	0	0	0	0	0	0	0	9	8	2	9	0	0	0	0	0	0	9	9	0	0	0	9	9	0	
8	8	9	0	0	0	0	0	0	0	0	0	0	8	8	9	9	8	0	0	0	0	0	8	8	0	0	0	8	8	0	
2	8	8	0	0	0	0	0	0	0	0	0	0	8	8	1	2	9	0	0	0	0	0	0	0	0	0	0	0	0	0	
3	9	8	0	0	0	0	0	13	0	0	0	0	0	9	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	9	8	0	0	0	0	0	14	0	0	0	0	0	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	8	8	0	0	13	13	0	9	0	13	13	0	0	0	0	0	0	0	0	0	0	0	13	13	13	0	13	13	13	0	
1	8	8	15	15	15	15	15	3	8	15	15	15	8	8	15	15	15	15	15	15	15	15	13	13	13	13	13	13	13	15	
0	0	0	8	8	1	2	8	1	8	8	8	1	1	8	8	2	8	8	8	8	1	1	2	8	8	8	1	8	8	1	8
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



## SPECIFICATION

DISPLAY SIZE: 128X128 PX

PALLET: 16 COLOURS

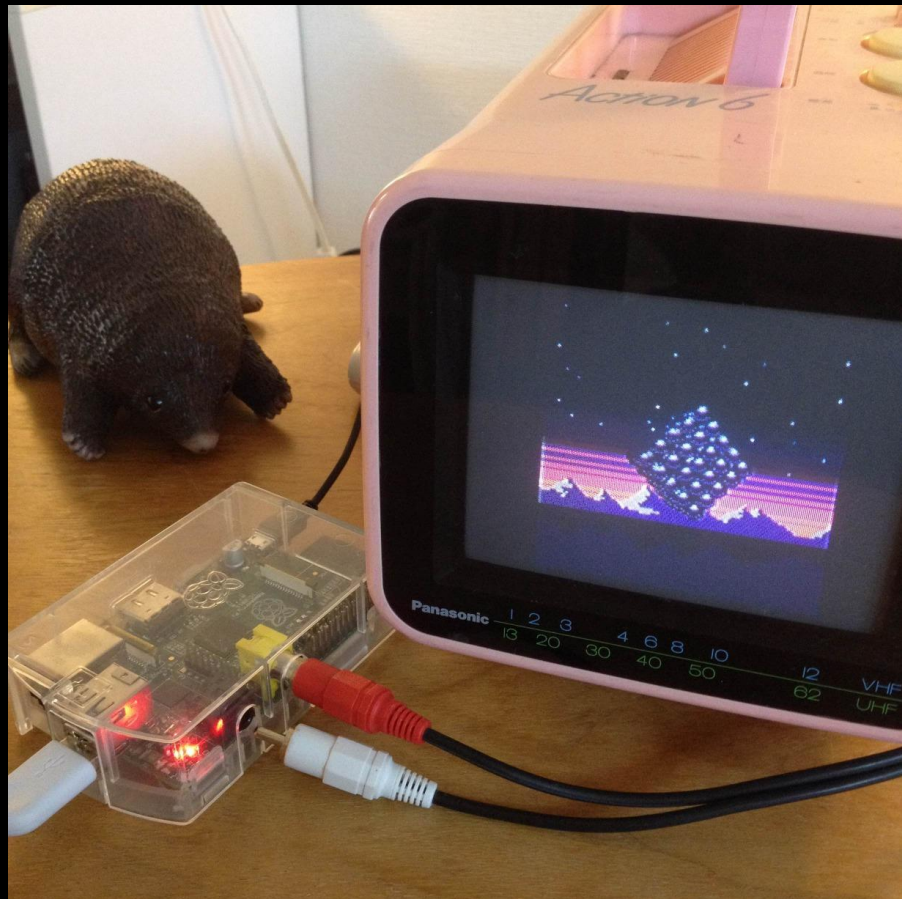
CARTRIDGE: 32K

LANGUAGE: SUBSET OF LUA

SPRITE SIZE: 8 PX

SPRITESHEET: 128 SPRITES

MAP: 128X32 8-BIT CELS







```
012345 + () 
-- GAME LIFECYCLE

FUNCTION _INIT()
  -- GET CALL ONCE
  -- AT THE CARTRIDGE LOAD
END

FUNCTION _UPDATE()
  -- CALLS EVERY FRAME
  -- USED TO UPDATE VARIABLES
END

FUNCTION _DRAW()
  -- CALLS EVERY FRAME
  -- USED TO DRAW GRAPHICS
END

LINE 20/20 237/8192
```

```
1  -- LOVE 2d game engine
2  -- dt is a deltaTime
3  function love.load(arg)
4  end
5
6  function love.update(dt)
7  end
8
9  function love.draw(dt)
10 end
```

```
1  // KontraJS tiny 2d game engine
2  kontra.init();
3
4  let loop = kontra.gameLoop({
5    update: function() {
6      // update the game state
7    },
8    render: function() {
9      // render the game state
10   }
11 });
12
13 loop.start();
```

```
HEIGHT = 16
@ = {X=24, Y=24, COL=3}
bot = {X=48, Y=48, C}

FUNCTION _UPDATE()
  IF (BTN(0)) bot.X = 1
  IF (BTN(1)) bot.X = 1
  IF (BTN(2)) bot.X = 1
  IF (BTN(3)) bot.X = 1
END

FUNCTION _DRAW()
  CLS()
  RECT(@)
  RECT(bot)
END
```

LINE 2:10 100/1025





```
End = {X = 64, Y = 64}

FUNCTION _UPDATE()
  IF (STOP()) End.X -= 8
  IF (STOP()) End.X -= 8
  IF (STOP()) End.X -= 8
  IF (STOP()) End.X -= 8
END

FUNCTION _DRAW()
  CLS()
  MAP(0, 0, 8, 8, 16, 16)
  SPR(16, End.X, End.Y)
END
```

END MAP 64/64

```

0 1 2 + ()
HEIGHT = 16
@ = {X=24, Y=24, COL=3}
@ = {X=48, Y=48, COL=3}

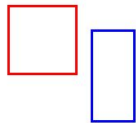
FUNCTION _UPDATE()
  IF (BTN(0)) @.X -= 1
  IF (BTN(1)) @.X += 1
  IF (BTN(2)) @.Y -= 1
  IF (BTN(3)) @.Y += 1

  HIT = COLLIDE(@, @)
  @.COL = HIT AND 8 OR 3
END

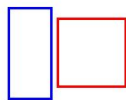
FUNCTION _DRAW()
  CLS()
  RECT(@)
  RECT(@)
END
TIME 12/19 100/1000

```

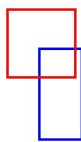
1



2



3





## EXPORTING AND DISTRIBUTING

1. AS A CARTRIDGE
2. AS HTML + JS CODE
3. BINARY (EXECUTABLE)

### EXPORTING ASSETS

- MUSIC AND SFX AS WAV FILES
- SPRITESHEETS



## HARDWARE

1. POCKET CHIP
2. RASPBERRY PI
3. GAMESHELL

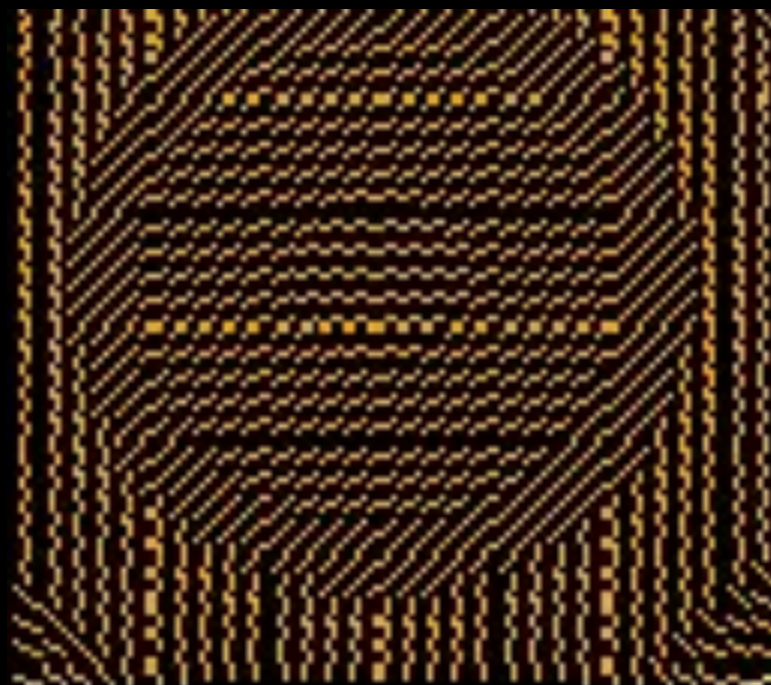


```

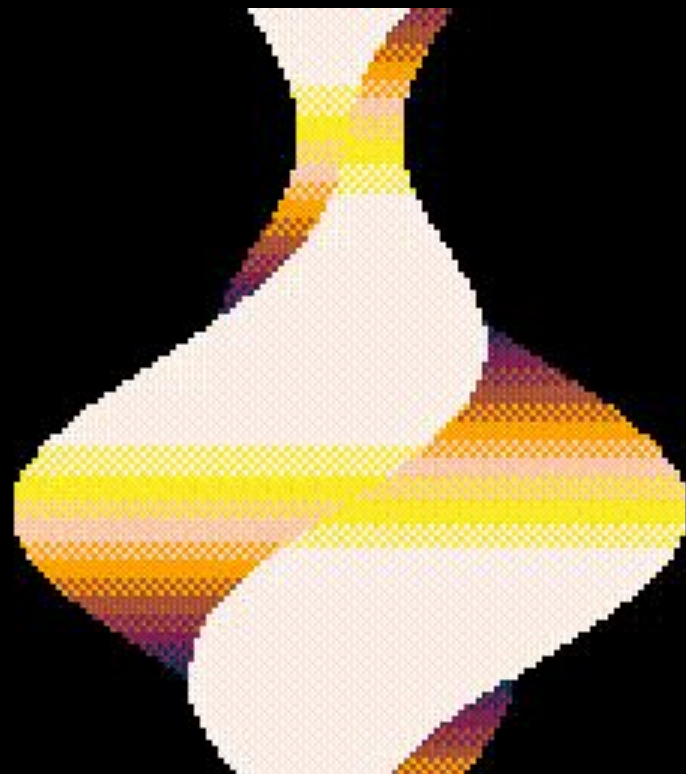
0 +
-- HTWEETCART CHALLENGE
n=30
C,S,T=COS,SIN,0
:::
CLS()
T+=.01
FOR I=1,n DO
  FOR J=1,n DO
    X,Y=I-n/2,J-n/2
    Z=C(SQRT(
      64-(X*X+Y*Y)*C(T))/(n-T)*2
    LINE(I*4+C(Z)*2,
      J*4+S(Z)*2+Z*8,
      I*4+C(.5+Z)*2,
      J*4+S(.5+Z)*2+Z*8, 11.5+Z)
  END END
FLIP()
GOTO _

```

LINE 18/18 124/8192







## MUSIC

GRUBERT IS CREATING  
ALBUMS OF MUSIC IN PICO-8  
AND MAKING COVERS OF POPULAR  
MUSIC FROM OLD GAMES.



## CELESTE

30 LEVELS

HARDCORE PLATFORMER

RELEASED IN 2018

ON WINDOWS, LINUX, MACOS

PS4, XBOX ONE, SWITCH

IGN: 10/10

GAMESPOT: 9/10

GAME INFORMER: 9/10



## COMMUNITY

1. EBS

- ```
- DEVELOPED BY ZED
- IS A FORUM SYSTEM
INTEGRATED WITH PICO-8 SPCORE
```

## 2. ITCH.ID

- OVER 1228 PUBLISHED GAMES  
CREATED IN PICO-8 AS OF TODAY  
- HAVE A GAME TAMS CALENDAR

[illegible]

## ALTERNATIVES

### 1. TIC-80

- OPENSOURCED
- 240X135 DISPLAY
- 256 8X8 SPRITES

### 2. PICOLOVE

- FORK OF PICO-8 IDEAS VIA LOVE API

### 3. PYXEL

- PYTHON 3

### 4. UNICORN CONSOLE (PREV PX8)

- 400X240 PIXELS DISPLAY
- 3200 8X8 SPRITES
- CODE: RUST/JS/PYTHON/LUA

```
LIK012
--LIK0-12 Code editor

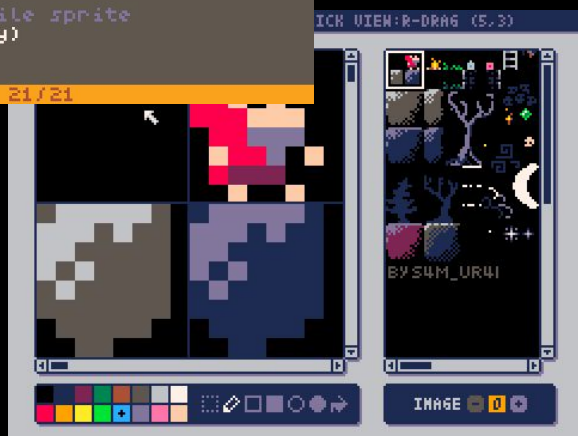
--The screen dimensions
local sw, sh = screenSize()

--The smile position.
local sx, sy = sw/2-4, sh/2-4

function _draw()
    --Clear the screen
    clear()

    --Draw the smile sprite
    Sprite(0, sx, sy)
end

LINE 1/23 CHAR 21/21
```



## PROS AND CONS

### PROS:

- CONSTRAINS
- RETRO LOOK AND FEEL
- ECOSYSTEM
- ACTIVE COMMUNITY
- "SHARE AND HACK" CULTURE
- COMPLETE TOOLCHAIN

### CONS:

- CLOSE SOURCED
- UNREADABLE FONT `bm`
- NO ONLINE SCORE BOARD (YET)



QUESTIONS?



## SPLORE

SMALL UTILITY TO BROWSE AND  
PLAY ALL CARTS PUBLISHED TO  
FORUM FROM THE PICO-8 APP.

## PICO-8

PICO-8 0.1.6  
(C) 2014-16 LEXALOFFLE GAMES LLP  
TYPE HELP FOR HELP

>

## STORY BEHIND

CREATOR: JOSEPH WHITE

LOCATION: PICO PICO CAFE,  
TOKIO, JAPAN

1. LEX500
2. VOXATRON
3. PICO-B

