

# Introduction

## Introduction

TODO

## Graphics

### Graphics

Provides graphics operations, such as for drawing pixels and images on the screen.

### Configuration

#### **GFX\_SET\_GRID**

Enables or disables a visual grid delimiting the screen pixels.

output bool GFX\_SET\_GRID

- Parameters:
  - bool: new state
    - \* **true**: enables the grid
    - \* **false**: disables the grid

The ratio between the real and logical dimensions must be greater then one.

#### **GFX\_SET\_RGB**

Changes the color for all subsequent drawing operation.

output (u8,u8,u8) GFX\_SET\_RGB

- Parameters:
  - u8: new red component
  - u8: new green component
  - u8: new blue component

#### **GFX\_SET\_TEXT\_CURSOR**

Changes the cursor position for drawing text.

output (u16,u16) GFX\_SET\_TEXT\_CURSOR

- Parameters:

- u16: new position in the x-axis
- u16: new position in the y-axis

### **GFX\_SET\_TEXT\_FONT**

Changes the font for drawing text.

output (string,u16) GFX\_SET\_TEXT\_FONT

- Parameters:
  - string: path for the .ttf font filename
  - u16: size of the new font

## **Drawing**

### **GFX\_DRAW\_BMP**

Draws a bitmap image on the screen.

output (string,u16,u16) GFX\_DRAW\_BMP

- Parameters:
  - string: path for the .bmp image filename
  - u16: drawing position in the x-axis
  - u16: drawing position in the y-axis

### **GFX\_DRAW\_PIXEL**

Draws a pixel on the screen.

output (u16,u16) GFX\_DRAW\_PIXEL

- Parameters:
  - u16: drawing position in the x-axis
  - u16: drawing position in the y-axis

The drawing color is specified with **GFX\_SET\_RGB**.

### **GFX\_DRAW\_RECT**

Draws a rectangle on the screen.

output (u16,u16,u16,u16) GFX\_DRAW\_RECT

- Parameters:
  - u16: drawing position in the x-axis
  - u16: drawing position in the y-axis
  - u16: rectangle width
  - u16: rectangle height

The drawing color is specified with `GFX_SET_RGB`.

### **GFX\_DRAW\_TEXT**

Draws a text on the screen.

output `string` `GFX_DRAW_TEXT`

- Parameters:
  - `string`: text to draw

The drawing position is first specified with `GFX_SET_TEXT_CURSOR`. The cursor advances automatically for the position after the text.

The drawing font is specified with `GFX_SET_TEXT_FONT`.

The drawing color is specified with `GFX_SET_RGB`.

### **GFX\_DRAW\_TEXTLN**

Draws a line of text on the screen.

output `string` `GFX_DRAW_TEXTLN`

The drawing position is first specified with `GFX_SET_TEXT_CURSOR`. The cursor advances automatically for the next line after the text, at the same initial position.

The drawing font is specified with `GFX_SET_TEXT_FONT`.

The drawing color is specified with `GFX_SET_RGB`.

### **Other**

#### **GFX\_CLEAR**

Clears the screen.

output `void` `GFX_CLEAR`

The clear color is specified with `GFX_SET_RGB`.

#### **GFX\_SCREENSHOT**

Takes a screen shot.

output `string` `GFX_SCREENSHOT`

- Parameters:
  - `string`: path for the `.bmp` image filename to generate

# Input Devices

## Input Devices

Provides input handling, such as for keyboard and mouse.

### Keyboard

#### KEY\_PRESS

input (bool,u16) KEY\_PRESS

- Occurrence:
  - whenever a keyboard key is pressed or released
- Payload:
  - **bool**: new key state
    - \* **true**: key is now pressed
    - \* **false**: key is now released
  - **u16**: the numeric key code

TODO: key codes

### Mouse

#### MOUSE\_CLICK

input (bool,int,u16,u16) MOUSE\_CLICK

- Occurrence:
  - whenever a mouse button is pressed or released
- Payload:
  - **bool**: new button state
    - \* **true**: button is now pressed
    - \* **false**: button is now released
  - **int**: the numeric button code (TODO: left, middle, right?)
  - **u16**: the current mouse position in the x-axis
  - **u16**: the current mouse position in the y-axis

#### MOUSE\_MOVE

input (u16,u16) MOUSE\_MOVE

- Occurrence:
  - whenever the mouse moves
- Payload:
  - **u16**: the current mouse position in the x-axis

- `u16`: the current mouse position in the `y`-axis

## Frame Management

### Frame Management

Manages the game frames, such as for updating animation and redrawing the screen.

#### Configuration

##### **FRAMES\_SET**

Enables or disables the generation of periodic `FRAMES_UPDATE` and `FRAMES_REDRAW` inputs to the application.

output `bool` `FRAMES_SET`

- Parameters:
  - `bool`: new state
    - \* `true`: enables the generation of frames
    - \* `false`: disables the generation of frames

##### **FRAMES\_SET\_CLEAR\_RGB**

Changes the redrawing background color.

output `(u8,u8,u8)` `FRAMES_SET_CLEAR_RGB`

- Parameters:
  - `u8`: new red component
  - `u8`: new green component
  - `u8`: new blue component

On every frame, the screen is cleared with the background color.

The default color is black.

#### Update

##### **FRAMES\_UPDATE**

input `int` `FRAMES_UPDATE`

- Occurrence:
  - on every frame, before `FRAMES_REDRAW`
- Payload:

- **int**: the number of elapsed milliseconds since the previous frame

## Redraw

### FRAMES\_REDRAW

input void FRAMES\_REDRAW

- Occurrence:
  - on every frame, after FRAMES\_UPDATE

Before the event occurs, the screen is cleared with the color set on FRAMES\_SET\_CLEAR\_RGB.

## Window Management

### Window Management

Manages the game window.

#### Configuration

### WINDOW\_SET\_SIZE

Changes the real and logical sizes of the window.

output (u16,u16,u16,u16) WINDOW\_SET\_SIZE

- Parameters:
  - **u16**: the new real width
  - **u16**: the new real height
  - **u16**: the new logical width
  - **u16**: the new logical height

The division between the real and logical dimensions must be exact.

### WINDOW\_SET\_TITLE

Changes the title of the window.

output string WINDOW\_SET\_TITLE

- Parameters:
  - **string**: new window title

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