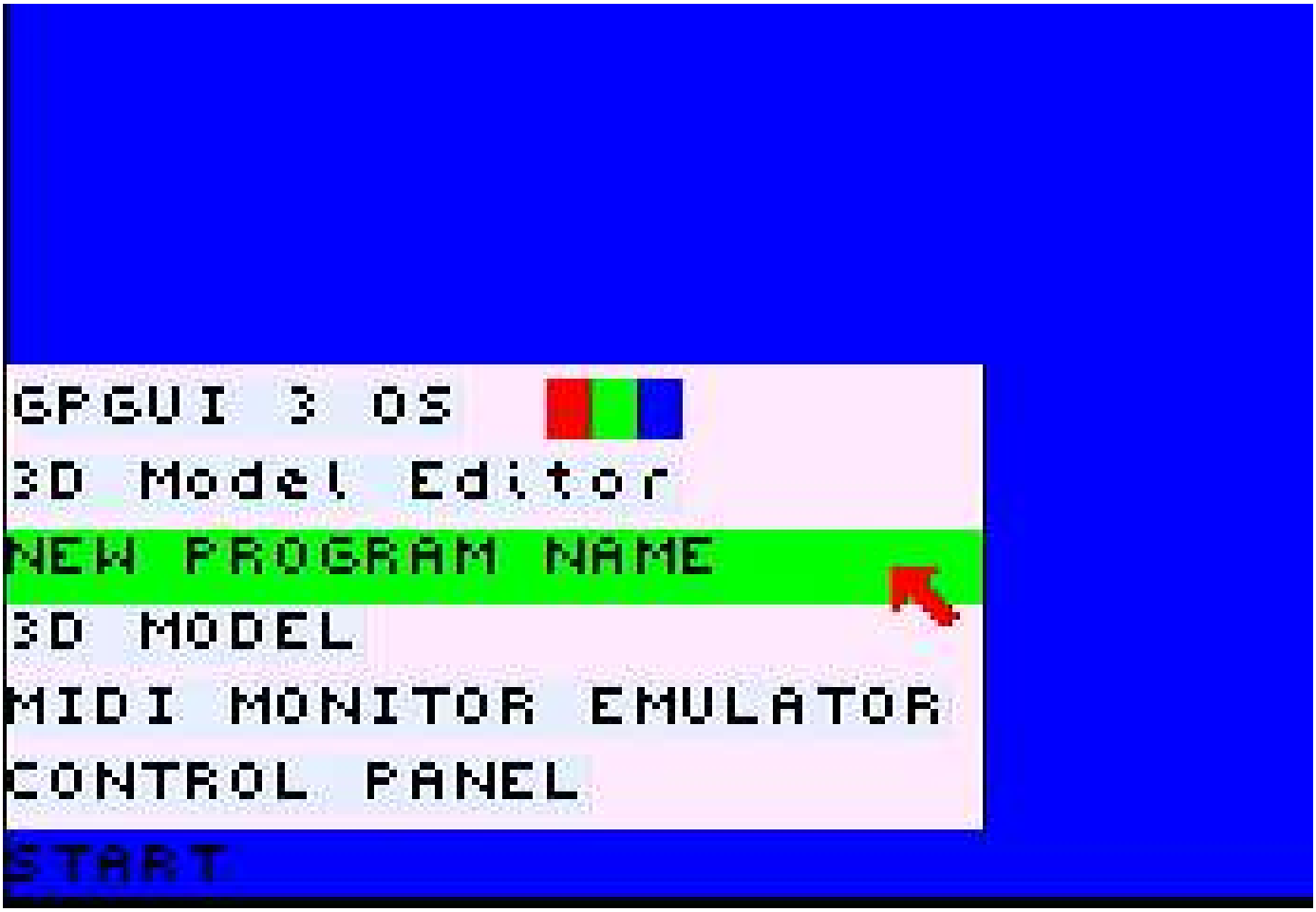
GPGUI 3 - HOW TO CREATE MOUSE BUTTONS

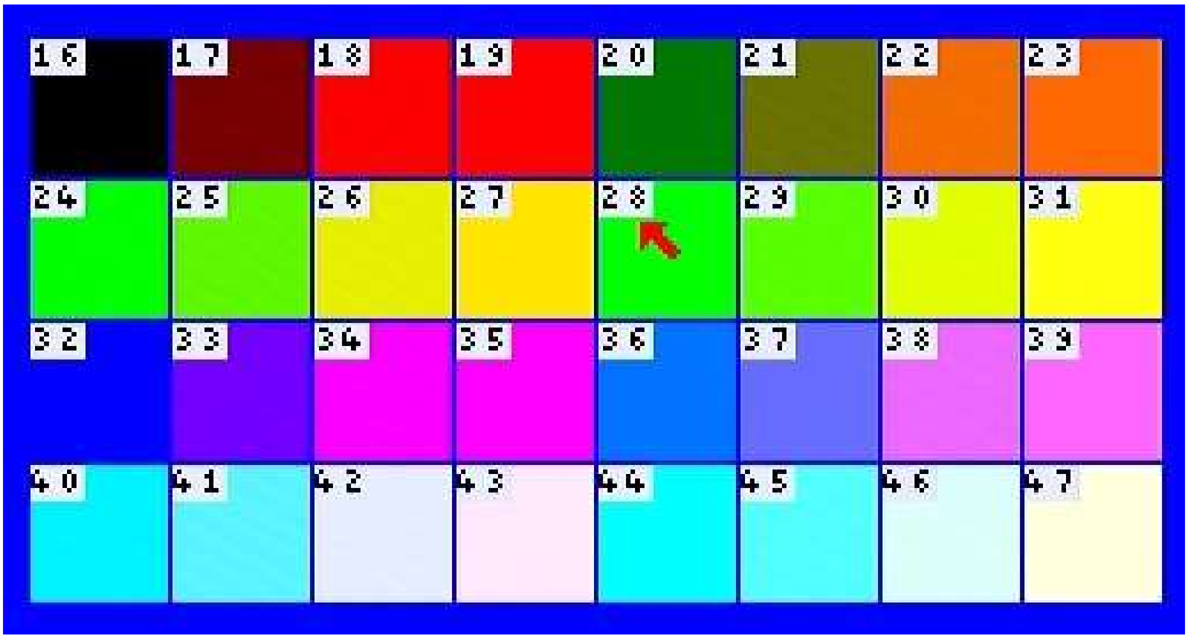


Summary:

How to create basic buttons on the screen that can be clicked on using the mouse cursor. The buttons can be flat shaded ON/OFF and highlight's when the cursor is over it, or text that highlight's when the cursor is over it, or an icon referenced to a color texture map byte array[16][16].

Contents

- **Color Values.**



- Color texture map, **NOTE**: Icons that are smaller than 16 are drawn in the top left corner.

```
byte exit_Sprite[16][16] =
{
{1, 1, 1, 1, 1, 1, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0},
{1, 0, 1, 1, 1, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0},
{1, 1, 0, 1, 1, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0},
{1, 1, 1, 0, 0, 1, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0},
{1, 1, 1, 0, 0, 1, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0},
{1, 1, 0, 1, 1, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0},
{1, 0, 1, 1, 1, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0},
{1, 1, 1, 1, 1, 1, 1, 1, 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, 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, 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, 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, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}
};
```

- **This is the button data structure**.

```
struct button
{
    bool state;
    int xStart;
    int yStart;
    int xSize;
    int ySize;
    int onColor;
    int offColor;
    int id;
    char* text;
    int icon[16][16];
    bool fill_Type;
    int texSize;
    bool text_Enable;
    int icon_Index_X;
    int icon_Index_Y;
};
```

STEP 1 - Create a buffer to hold the buttons.

- Create - `int` active_Button_Id memory address .
- Create - vector< **button** > of the struct type **button.**

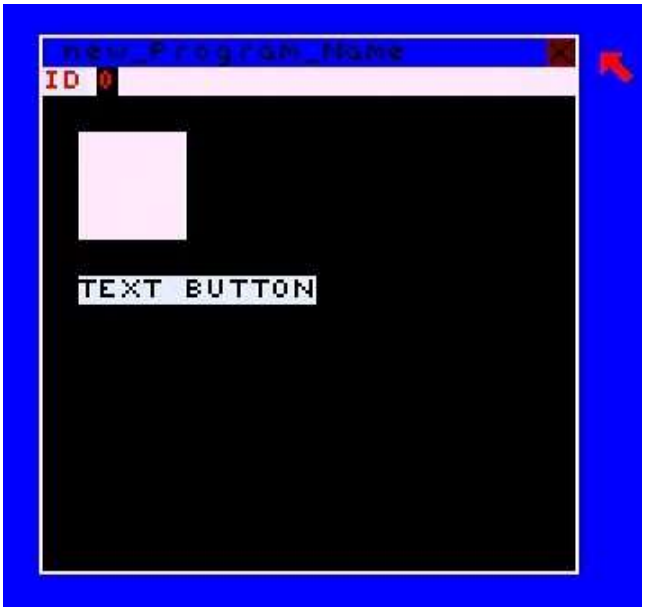
```
    vector<button> buttons_Buff;
    static int   active_Button_Id = 0;
```

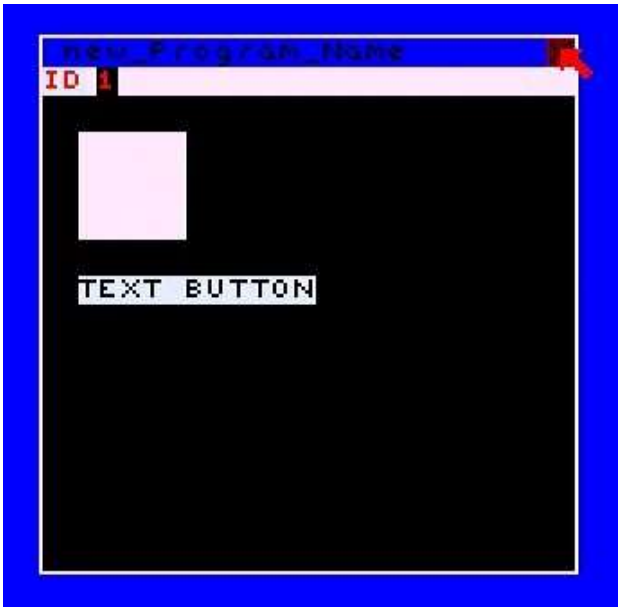
STEP 2 - Create a button object and add it to the button buffer.

STEP 2.1 - Create a button object and add it to the button buffer (ICON).

- Set button start (Top left).
- Set button area size.
- Set the button ID.
- Set fill Type to 1.
- set the texture size (this is a square size i.e. 16x16 = 16). 16 is the max size.
- Set text Enable too false.
- set the texture index (**Only if the texture is smaller than the button area and offset is required**).
- Use the write_Icon_To_Button(**button***, byte*[16][16]) function.
- Push the button object into the button buffer.

```
button exit;
exit.xStart = (w1.xStart + w1.xSize) - 9;
exit.yStart = w1.yStart + 1;
exit.xSize = 8;
exit.ySize = 8;
exit.id = 1;
exit.fill_Type = 1;
exit.texSize = 8;
exit.text_Enable = false;
exit.icon_Index_X = 0;
exit.icon_Index_Y = 0;
write_Icon_To_Button(exit, exit_Sprite);
buttons_Buff.push_back(exit);
```

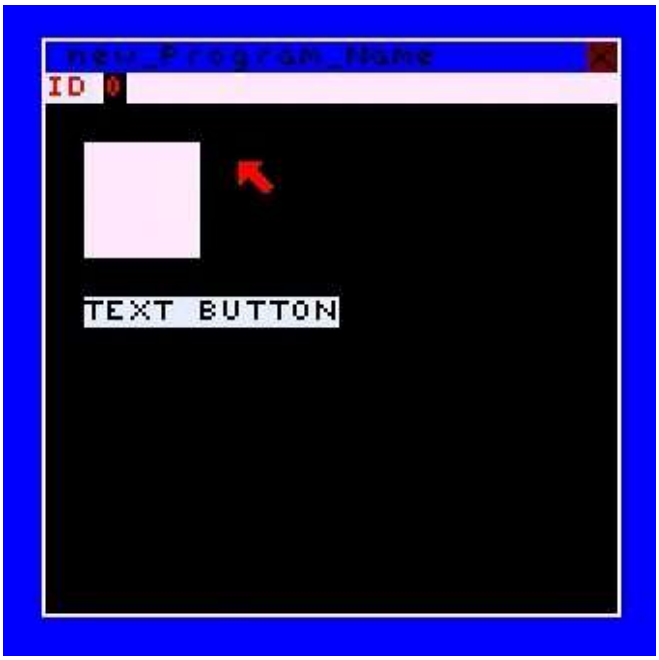


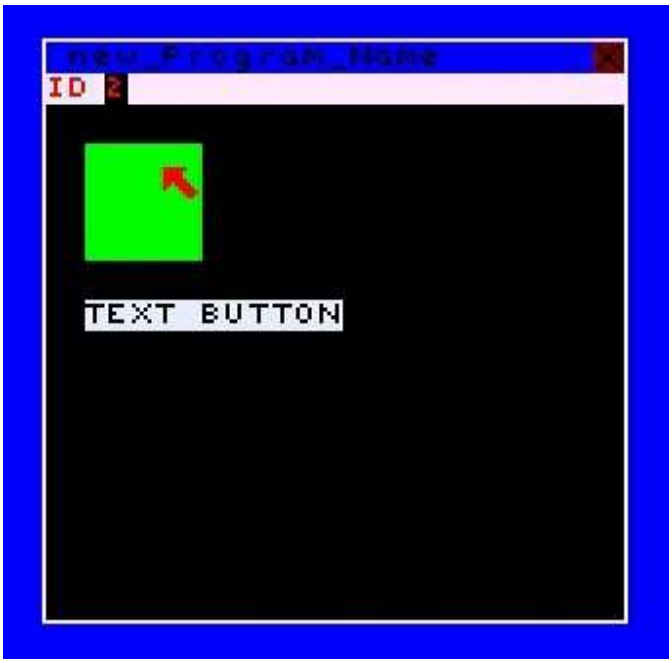


STEP 2.2 - Create a button object and add it to the button buffer (FLAT SHADED).

- **Set the active and inactive color.**
- **Set button start (Top left).**
- **Set the button ID.**
- **Set button area size.**
- **Set text Enable too false.**
- **Set fill Type to 0.**
- **Push the button object into the button buffer.**

```
button b1;
b1.onColor = green;
b1.offColor = grey;
b1.xStart = w1.index_X + 10;
b1.yStart = w1.index_Y + 10;
b1.xSize = 30;
b1.ySize = 30;
b1.id = 2;
b1.text_Enable = false;
b1.fill_Type = 0;
buttons_Buff.push_back(b1);
```





STEP 2.3 - Create a button object and add it to the button buffer (TEXT BOX).

- **Set button start (Top left).**
- **Set button area size(The width is the number of chars in the TEXT * 6).**
- **Set the button ID.**
- **Set the text string.**
- **Set text Enable too true.**
- **Set fill Type to 0.**
- **Push the button object into the button buffer.**

```
button b2;
b2.xStart = w1.index_X + 10;
b2.yStart = w1.index_Y + 50;
b2.xSize = 66;
b2.ySize = 8;
b2.id = 3;
b2.text = "TEXT BUTTON";
b2.text_Enable = true;
b2.fill_Type = 0;
buttons_Buff.push_back(b2);
```