

programmers

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Chapter 1

programmers

1.1 SuperDark prog

Writing your own modules for superdark:

Overview

Info

Dark function

MyGadg

Debug

The info text

Problems

1.2 Overview

I Overview:

How to add modules to SuperDark.

- It is not very difficult to add your own module to Superdark, but you have to read carefully this doc, because there is some important things to understand!

You have to do four things to add a new module in SuperDark:

* Create your own

dark()

procedure, that's the procedure called at screen blanking. That's the biggest part of the job.

* Add the

```

proc_init()
,
proc_save()
,
proc_end()

```

function. Usually, these function are empty. But for special purpose, you could fill them, look at the doc.

* Add a

```
my_gadg[]
```

array. This array is used to create the param window, but also to read and save parameters. Very powerful, and easy to use after you've read the doc!

* Create an

```
info
text. This should be easy,no?
```

Notes:

* YOU MUST link your module with the proc_main.o object. Proc_main will make some important initialisation, contain important function for you!

* I use some special keyword of the Lattice compile, like `__saveds`. If you don't have them, check your compiler's documentation. But if you don't use callback procedure with button, you don't need this.

The simplest way to add a new module is to take a look at the module named "rien.dark.c", this module does aboslutly nothing, but you can use it at a skeletton program.

1.3 Info

II What is a module for SuperDark ?

- It's an executable program, loaded by SuperDark.
- You have link it with proc_main.o.
- Proc_main.o will make initialisation and wait for a signal from superdark, and then will call your

```

dark
function.
```

But:

- You can't do ANY printf
- You can't run it alone

Except:

```

If you link it with
proc_main_debug.o
instead of proc_main.o
```

1.4 Dark function

III

The `dark()` function:

This function is called by `proc_main` when the screen should be blanked. You can ask for a copy of the frontmost screen. To do this, look at the

```
proc_init()
function.
```

So you can put what you want here, but remember these limitations:

- Don't use any `printf` in your program
- Don't make any global auto-initialised variable. This may cause some problems if you don't see exactly what happens. Because when your `dark()` function is called two times, the global are not reset to their initial value. So if you use global var and change their value, be careful.
- Try to don't use the whole CPU time. Use `WaitTOF()`, `Delay()`, `Wait()`... But you are a good programmer, so you know what to do!

To test if your function have to exit, you have the `tst_end()` function. This function will return `TRUE` if you have to exit, or `FALSE` if you have to continue.

Example:

```
while(tst_end()==FALSE){
    do what you want...
}
```

The other function is `wait_end()`. This function will only return at the end of the blanking time. ←

1.5 `proc_init()`

IV `proc_init()`, `proc_save()` and `proc_end()`

`proc_init()` is called after your module have been loaded. You can do special initialisation here, but don't use too much memory. That's here that you told if you want a copy of the current frontmost screen be opened for you. To do this, you have to do this:

```
p_data_proc->type_screen=SCR_GIVEN;
```

You can also tell to `superdark` that your module should only run with `superdark` for `WB2.0` or higher.

```
p_data_proc->code_ret=DARK_WB_20;
```

`proc_save()` is no more used, but is still here for compatibility...

`proc_end()` is called when the module have to be removed from memory. You can free what you've allocated in `proc_init()`.

1.6 MyGadg

V The my_gadg array....

This one of the most powerful of superdark. Each module can have a parameter window. To do this, you have to define this window, but in a special manner. This array is an array of type tom_gadget. This is the definition of the type tom_gadget (from includes/tom_gadget.h) :

```
typedef struct tom_gadget{
    char *GadgetText; /* Text of the gadget on screen. */
    type_gadget type_gadg; /* The type of the gadget, see later */
    short int LeftEdge,TopEdge; /* position */
    short int Width,Height; /* size */
    short int value; /* value ! */
    short int d1,d2,d3; /* Used for special purpose.... */
    char *p_data; /* Used for special purpose.... */
    struct Gadget *p_gadg; /* Internal use only */
};
```

Note that the four standart gadget "ok","test","cancel","help" are automaticly added!

Let's see these field:

char *GadgetText:

So it's the text of your gadget in the configuration window, but also of the corrsponding value in the TOOL TYPE list. Yes, because SuperDark se these informations to save the configuration as ToolTypes in the .info of the module.

You can use shorcut, by using '_'. Example, a gadget named TEST can have the shortcut T if his name is:

"_TEST"

type_gadget type_gadg:

Define the type of the gadget. These type are availaible:
(note that they are also availble on WB1.3 for the most of them)

The following type are available(and look at the exemple

:

END_LISTE

BUTTON

SLIDER

CHECKBOX

MX

CYCLE

LISTVIEW

OWN_GADGET

STRING

INTEGER

SCREEN

FONT

DATA_STRING

IMAGE

LeftEdge, TopEdge, Width, Height:

Position and size of the gadget...nothing else to say!

1.7 end_liste

END_LISTE:

This is not really a type, but each tom_gadget array should end with this value! Remember it!!!

1.8 button

BUTTON:

A simple button. You can define a function called when the button is pressed, by giving a pointer to this function in the p_data field.

1.9 slider

SLIDER:

A normal slider. The direction of the slizer (horiz/vertical) is defined by the ratio Width/Height. If Width is > Height, this will be an horizontal slider, otherwise it's an vertical one.

* value must contain the initial value of the slider,

* d1 and d2 must contain the range of the slider

* if p_data is not nul, it must contain a pointer to the variable wich will receive a copy of the current value of the slider.

1.10 checkbox

CHECKBOX:

Checkbock gadget.

* value contain the initial value, and will be re-actualised,

1.11 mx

MX:

Multiple choice gadget.

* p_data must contain a pointer to an array of char

example: p_data={"Choice1","Choice2","Choice3",NULL}

* value contain the initial value, and will be re-actualised,

1.12 cycle

CYCLE:

Cycle gadget.

Same kind of configuration than the MX gadget.

1.13 listview

LISTVIEW:

Listview gadget.

* p_data must containt a pointer to a List structure. the name of each node of the list will be be show on screen.

* value contain the position of the initial selected value, and will be re-actulised.

1.14 own_gadget

OWN_GADGET:

Very special purpose gadget!!!!

No time to describe it now...sorry.

I just can say that it's used to create other type of gadget than the current available.

1.15 string

STRING:

String gadget

* p_data must contain a pointer to a buffer of char. This buffer will contain the value of the string gadget.

* dl MUST CONTAIN the size of the buffer.

1.16 integer

INTEGER:

Integer gadget.

*value contain the initial value, and will be re-actualised,

*dl contain the max number of digits for the number.

1.17 screen

SCREEN:

High level gadget....

This gadget will only be active if reqtools.library v38 or higher is present on your system.

It allow you to choose a screen resolution, size, and overscan value, by using the screen requester from the reqtools lib.

* value contain the initial Overscan mode of the screen, and will be re-actualised. Look at intuition/screens.h

* dl contain the initial Width of the screen, and will be re-actualised

* d2 contain the initial Height of the screen, and will be re-actualised

* d3 contain the initial Depth of the screen, and will be re-actualised

* p_data contain the initial Mode ID of the screen, and will be re-actualised

Note:

If d3 (depth) is null, this mean that none of the value is significative.

1.18 font

FONT:

The second high level gadget....

This gadget will only be active if reqtools.library is present on your system.

It allow you to choose a font, include size and attributes.

* p_data is a pointer to a TextAttr structure.
 IMPORTANT NOTE: This text attr must have the field ta_Name initialized with a pointer to a string buffer, with enough space to put the biggest name of the available font

1.19 data_string

DATA_STRING:
 This data type is only used for configuration. I mean than you won't see anything on configuration window, but a string will be saved and loaded in the configuration file.

1.20 image

IMAGE
 With this data, you can include an image in your parameter window. Just put a pointer to an image structure in the p_data field

1.21 exemple

Example: we want to make a parameter window, with three things:
 - a checkbox,
 - a slider , wich can have value from -10 to 50
 - a "screen" button.

```
struct tom_gadget my_gadg[]={
    {"_Check it" ,CHECKBOX , 100, 10, 10,10,0,0,0,0,0},
    {"_slide it" ,SLIDER , 100, 25, 10,10,10,-10,50,0,0},
    {"s_screen" ,SCREEN , 200, 10, 50,10,0,0,0,0,0}};
```

The parameter window will look like this:

```
-----
|           |
|   _   _____   |
| Check it | |         |screen|   |
|   -   - - - - -   | |         |
|   _____   | |         |
| slide it | |         |#     |   |
|   - - - - -   | |         |
|           | |         |
|         Ok   Test   Cancel   Info |
|           |
|-----
```

and when you press OK, you'll see in the tootype of your module:

```
CHECK IT=FALSE
SLIDE IT=20
SCREEN =320 x 256 x 3 ID=21000 OVSCN=0
Nice no?
```

1.22 Info_text

The information text:

It's the text show when you press the "Info" button. It's just an ascii string, named p_text_info. Example:

```
char *p_text_info=
"  Hi evrybody\n"
"now I can do my\n"
"own module for\n"
"  SUPERDARK!\n";
```

Note the \n at the end of each line

1.23 debug

Now, a little help to debug your module....

- First, try to make your 'effect' alone, without using superdark. Then, put it as a blanker.
- Use proc_main_debug instead of proc_main.
With proc_main_debug, you can run your module exactly like running with superdark. But now you can put printf, you can use a source level debugger, etc....very useful! The only problem is that you can't have the saved configuration for this module! And one more thing: don't try to run this module FROM superdark!!! If you do this....CRASH (you must now what you want!) You have to link it with proc_main to do so.
- To stop a module linked with proc_main_debug, just click the close button of the window opened in the Workbench screen.

1.24 Problems

VI If it doesn't work....

Hum....take a look at the other sourcecodes in the disk

If this still doesn't work, you can send me you module and I'll try to make it work....

my adress

```
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```

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