

C Coding Guidelines

- *snake_case*: easier to type, harder to read
 - Though: some of the best ever written softwares were made in *snake_case*
- *camelCase*: harder to type, easier to read
 - Microsoft uses it...
- Dividing the code in functions increase its comprehension and readability.
- Code must not be generic, but very specific to what exactly you're doing.
- Code for debug purpose must be removed from the final form of the code.

Variables

Local: `{name_of_var}`
Global: `g_{detailed_name_of_var}`

`int i;`
`extern int g_alien_cnt;`

Functions

Names

`{libLabel}_{object}[_{action_or_verb}]` or `{libLabel}_{action_or_verb}_{object}`

`sfSyl_welcome_txt_print ()`
`sfSyl_print_welcome_txt ()`

Definitions

```
[attributes ]{type}
{function_name}( {args} )
{
/.../
}

noreturn void
usage( int status )
{
    /*...*/
    exit( status );
}
```

- Rationale: easier to `grep ("^func_name") ## Pointers {type} *{var}`

```
int *var1, *var2;    /* 2 pointers */
int *var1, var2;    /* 1 pointer, 1 int ! */
```

Typedefs

```
[libLabel_] {name}_t
superint_t i;
sfs_superint_t j;
```

Structures

```
{name_of_struct}_s, {name_of_struct_var}
datstruct_s this_is_a_struct;
```

Enums

```
{name_of_enum}_e, {ENUM_CONST}, {name_of_enum_var}
enum mood_e { TAKE_IT, GIVE_IT, KEEP_IT } my_mood;
```

Gotos

```
[GT_] {ThisPart} or [GT_] {this_part}
EmergencyClosure:
GT_EmergencyClosure:
GT_emergency_closure:
```

Define

```
[TYPE_] {NAME_OF_DEF}
#define ALIENS_ON_PLANET_CNT    1234
```

Macro (DEFINES)

```
[M_] {OBJECT}_ {VERB} or [M_] {VERB}_ {OBJECT}
#define ALIENS_ON_PLANET_LOCATE ()
#define M_ALIENS_ON_PLANET_LOCATE ()
#define LOCATE_ALIENS_ON_PLANET ()
```

Macro (header guards)

`{NAME_OF_HEADER}_H`

`MY_COOL_LIB_H`

- Rationale: `_` and `__`-starting header guards are used by standard library headers `##` Parenthesis / braces `{func}({args});`

```
printf( "spaces btwn args and parenthesis : %d", true_dat );
```

```
{statement} ({condition}) {  
/.../  
}
```

```
if (true_dat == 1) {  
    /*...*/  
} else {  
    /*...*/  
}
```

Code example

```
#ifndef THAT_GUARD_THOUGH_H  
#define THAT_GUARD_THOUGH_H
```

```
#include "myheader.h"
```

```
#include <header1.h>  
#include <header2.h>
```

```
#define STR_SIZE_OF_PLANET  "BIG"
```

```
noreturn void  
f_datFunc( void )  
{  
    unsigned int aliens_cnt = 100;  
    int happn = 0;  
  
    printf( "This planet is %s.\n", STR_SIZE_OF_PLANET );  
    if (aliens_cnt > 50) {  
        puts( "it's happening" );  
        happn = 1;  
    } else if (aliens_cnt > 0) {  
        puts( "we still have time" );  
        happn = 0;  
    } else { puts( "ERROR" ); goto GT_Habbening; }  
}
```

```

switch (happn) {
case 0:
    return( EXIT_SUCCESS );
default:
GT_Habbenig:
    return( EXIT_FAILURE );
}
}

#endif      /* ndef _THAT_GUARD_THOUGH_ */

```

General advices

- Always use header guards.
- Put braces even on one-line statements.

Linux kernel coding style

GNU `indent` now has an option to format your code according to the Linux kernel coding style: `indent -linux [file]`. Doc: <https://www.kernel.org/doc/html/v4.10/process/coding-style.html>

References/resources

- *Notes on Programming in C*, Rob Pike