

config-parser

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Chapter 1

Class Index

1.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

configEntry	5
-----------------------------------	---

Chapter 2

File Index

2.1 File List

Here is a list of all files with brief descriptions:

config.c	7
config.h	13
file.c	20
file.h	21
test.c	22

Chapter 3

Class Documentation

3.1 configEntry Struct Reference

```
#include <config.h>
```

Public Attributes

- char * [sectionName](#)
- char * [keyName](#)
- char * [keyValue](#)

3.1.1 Detailed Description

Definition at line 30 of file [config.h](#).

3.1.2 Member Data Documentation

3.1.2.1 keyName

```
char* configEntry::keyName
```

Definition at line 33 of file [config.h](#).

3.1.2.2 keyValue

```
char* configEntry::keyValue
```

Definition at line 34 of file [config.h](#).

3.1.2.3 sectionName

```
char* configEntry::sectionName
```

Definition at line 32 of file [config.h](#).

The documentation for this struct was generated from the following file:

- [config.h](#)

Chapter 4

File Documentation

4.1 config.c File Reference

```
#include "config.h"
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <errno.h>
```

Functions

- int [checkSection](#) (char *str, char delimiterLeft, char delimiterRight, char **sectionName)
Here we check if the given string contains a section for example [SECTIONName] here delimiterLeft is [and delimiterRight is] if a section is found, the section name will be written to sectionName.
- int [getStrAtPos](#) (char *str, int fromPos, int toPos, char **name, int sizeName)
Here we get / cut from fromPos to toPos and write it to an address.
- int [getNameValuePair](#) (char *str, char leftDelimiterPos, char rightDelimiterPos, char **name, char **value, int sizeName, int sizeValue)
Input:
- int [parseConfig](#) (char *originalBuffer, struct [configEntry](#) **entry, int configSizeCount, int *returnedCount)

4.1.1 Function Documentation

4.1.1.1 checkSection()

```
int checkSection (
    char * str,
    char delimiterLeft,
    char delimiterRight,
    char ** sectionName)
```

Here we check if the given string contains a section for example [SECTIONName] here delimiterLeft is [and delimiterRight is] if a section is found, the section name will be written to sectionName.

Input:

Parameters

<i>char</i>	**str: the string to check
<i>char</i>	delimiterLeft: the left delimiter to check for
<i>char</i>	delimiterRight: the right delimiter to check for

Output:

Parameters

<i>char</i>	**sectionName: if found the section Name of the section
-------------	---

Return:

Parameters

<i>int</i>	status_code: one of the following values:
------------	---

Definition at line 24 of file [config.c](#).**4.1.1.2 getNameValuePair()**

```
int getNameValuePair (
    char * str,
    char leftDelimiterPos,
    char rightDelimiterPos,
    char ** name,
    char ** value,
    int sizeName,
    int sizeValue)
```

Input:

Here we get a "pair" of data, parsed from *str, witch consists of a keyname and a keyvalue. These are written to the pointers at char **name and char **value. These pair can be in the form of:

ex1:

NAME=VALUE

```
  ^      ^
```

```
____|_____ Here we have no delimiter this means rightDelimiterPos must be NULL
```

```
____ This is the left delimiter
```

ex2:

name(value)

```
  ^      ^
```

```
____|_____ This is the rightDelimiterPos and must be ')'
```

```
____ This is leftDelimiterPos which must be '('
```

Parameters

<i>char</i>	*str: the line in the form of a string where a key value pair is stored
<i>char</i>	leftDelimiterPos: the left delimiter for example '='
<i>char</i>	rightDelimiterPos: the right delimiter can be NULL in most cases, if NULL we assume that there is only one delimiter, which is in this case the leftDelimiterPos

Output:

Parameters

<i>char</i>	**name: The address where we store the name of the Key
<i>char</i>	**value: The address where we store the key value
<i>int</i>	sizeName: for size checking against memory allocated at **name
<i>int</i>	sizeValue: for size checking against memory allocated at **value

Return:

Returns

will return NO_ERROR (0) if successfull. If not it will return the error of the subroutine

Definition at line 151 of file [config.c](#).

4.1.1.3 getStrAtPos()

```
int getStrAtPos (
    char * str,
    int fromPos,
    int toPos,
    char ** name,
    int sizeName)
```

Here we get / cut from fromPos to toPos and write it to an address.

Input:

Parameters

<i>char</i>	*str: the string to cut
<i>int</i>	fromPos: from which position we want to copy, the pos is included and zero indexed
<i>int</i>	toPos: to which position we want to copy, the pos is included and zero indexed

Output:

Parameters

<i>char</i>	**name: here we will write the section name to
-------------	--

Input:

Parameters

<i>int</i>	sizeName: the size of the user allocated buffer at **name
------------	---

Definition at line 98 of file [config.c](#).

4.1.1.4 parseConfig()

```
int parseConfig (
    char * originalBuffer,
    struct configEntry ** entry,
    int configSizeCount,
    int * returnedCount)
```

Given a null terminated buffer of content(ex. from a file) an parse it with a default syntax of: Sections -> [SECTIONNAME] name / value -> name=value

Input: char *originalBuffer: the buffer which holds the string for parsing. struct configEntry **entry: a user allocated buffer to which we write the parsed config data. int configSizeCount: the user allocated size of **entry. Output: int *returnedCount: to this variable the function writes the count of struct, which will be required to store all available data.

Note: The function returns the maximum allowed data structures, determined by configSizeCount. All data which exceeds will be dropped. To get the whole data we run the function a second time with the reallocated configSizeCount in the size of [returnedCount] structures.

Definition at line 215 of file [config.c](#).

4.2 config.c

[Go to the documentation of this file.](#)

```
00001 #include"config.h"
00002 #include<stdio.h>
00003 #include<stdlib.h>
00004 #include<string.h>
00005 #include<errno.h>
00006
00024 int checkSection(char *str,char delimiterLeft,char delimiterRight,char **sectionName)
00025 {
00026     char section[MAX_LEN_SECTIONNAME];
00027     int i = 0; //most outer loop -> character of string
00028     if(str == NULL)
00029     {
00030         return ERROR_STR;
00031     }
00032     int len = strlen(str);
00033     int state = ST_INIT;
00034     int leftDelimiterPos=0;
00035     int rightDelimiterPos=0;
00036     char *sectionName2 = NULL;
00037     while(state != ST_FINISH)
00038     {
00039         switch(state)
00040         {
00041             case ST_INIT:
00042                 for(i=0;i<=len;i++) //find first (left) delimiter
00043                 {
00044                     if(str[i] == delimiterLeft)
00045                     {
00046                         state = ST_FOUND_LEFT_DELIMITER;
00047                         leftDelimiterPos = i;
00048                         break;
00049                     }
00050                 }
00051                 if(state != ST_FOUND_LEFT_DELIMITER)
00052                 {
00053                     return ST_ERROR_NOT_FOUND_LEFT_DELIMITER;
00054                 }
00055                 break;
00056             case ST_FOUND_LEFT_DELIMITER:
00057                 for(i=0;i<=len;i++) //find second (right) delimiter
00058                 {
00059                     if(str[i] == delimiterRight)
00060                     {
00061                         state = ST_FOUND_RIGHT_DELIMITER;
00062                         rightDelimiterPos = i;
```

```

00063             break;
00064         }
00065     }
00066     if(state != ST_FOUND_RIGHT_DELIMITER)
00067     {
00068         return ST_ERROR_NOT_FOUND_RIGHT_DELIMITER;
00069     }
00070     break;
00071     case ST_FOUND_RIGHT_DELIMITER:
00072         int ret=0;
00073
00074     if((ret=getStrAtPos(str,leftDelimiterPos,rightDelimiterPos,sectionName,MAX_LEN_SECTIONNAME)) ==
NO_ERROR)
00075     {
00076         state = ST_FINISH;
00077     }else{
00078         return ret;
00079     }
00080     case ST_FINISH:
00081         return FOUND_SECTION;
00082     }
00083     return NO_SECTION;
00084 }
00085
00098 int getStrAtPos(char *str,int fromPos,int toPos,char **name,int sizeName)
00099 {
00100     if(*name == NULL)
00101     {
00102         int error = errno;
00103         printf("Pointer NULL:%d\n",error);
00104         return error;
00105     }
00106     int i=fromPos;        //character iterator, which starts from specified pos
00107     int j=0;             //the character iterator for the target string
00108     int diffLen=toPos-fromPos;
00109     char *ptr_name=*name;
00110     if(diffLen > MAX_LEN_SECTIONNAME || diffLen>sizeName)
00111     {
00112         return ERROR_MAX_LEN;
00113     }
00114     for(i=fromPos,j=0;i<=toPos;i++,j++)
00115     {
00116         ptr_name[j] = str[i];
00117     }
00118     ptr_name[j+1]='\0';
00119     return NO_ERROR;
00120 }
00121
00151 int getNameValuePair(char *str,char leftDelimiterPos,char rightDelimiterPos,char **name,char
**value,int sizeName,int sizeValue)
00152 {
00153     if(*name == NULL || *value == NULL)
00154     {
00155         int error = errno;
00156         printf("Pointer NULL:%d\n",error);
00157         return error;
00158     }
00159     int state=ST_INIT;
00160     char *ptr_name=*name;
00161     char *ptr_value=*value;
00162     int ret=0;
00163
00164     char *ptrDelimiter=NULL;
00165     int posDelimiter=0;
00166     int posEnd=0;
00167
00168     ptrDelimiter=strchr(str,leftDelimiterPos);
00169     if(ptrDelimiter==NULL)
00170     {
00171         return ERROR_DELIMITER_NOT_FOUND;
00172     }
00173     posDelimiter = (ptrDelimiter - str);
00174     printf("LenUntilDelimiter: %d\n",posDelimiter);
00175     if((ret=getStrAtPos(str,0,posDelimiter-1,&ptr_name,sizeName)) == NO_ERROR)
00176     {
00177         printf("ptr_name:%s\n",ptr_name);
00178     }else {
00179         printf("Error at getStrAtPos:%d\n",ret);
00180         return ret;
00181     }
00182     if(rightDelimiterPos == 0)
00183     {
00184         posEnd = strlen(str);
00185     }else{
00186         posEnd = rightDelimiterPos;
00187     }

```

```

00188
00189     if((ret=getStrAtPos(str,posDelimiter+1,posEnd,&ptr_value,sizeValue)) == NO_ERROR)
00190     {
00191         printf("ptr_name:%s\n",ptr_value);
00192     }else {
00193         return ret;
00194     }
00195
00196     return NO_ERROR;
00197 }
00198
00215 int parseConfig(char *originalBuffer,struct configEntry **entry,int configSizeCount,int
*returnedCount)
00216 {
00217     int state=ST_INIT;
00218     int ret=0;
00219     int i=0;
00220     *returnedCount=0;
00221     char *sectionName=NULL;
00222     struct configEntry *ptr_entry = *entry;
00223     char *keyName=NULL;
00224     char *keyValue=NULL;
00225     char *buffer=NULL;
00226
00227     buffer = malloc(strlen(originalBuffer)+1);
00228     if(buffer == NULL)
00229     {
00230         int error = errno;
00231         printf("ERROR MALLOC:%d",error);
00232         return ERR_PARSECONFIG_UNKNOWN;
00233     }
00234     memset(buffer,0,strlen(originalBuffer)+1);
00235     strcpy(buffer,originalBuffer);
00236
00237     //this step is necessary, because the strok function modifies the originalBuffer
00238     //so we make a copy of it
00239     strcpy(buffer,originalBuffer);
00240
00241     printf("buffer:%s\n--",buffer);
00242
00243     sectionName = malloc(MAX_LEN_SECTIONNAME);
00244     memset(sectionName,0,MAX_LEN_SECTIONNAME);
00245
00246     //read buffer line by line
00247     char *token;
00248     token = strtok(buffer,"\n");
00249     while(token != NULL && state != ST_FINISH)
00250     {
00251
00252         switch(state)
00253         {
00254             case ST_INIT:
00255                 if((ret=checkSection(token,[' ','\n'],&sectionName))==FOUND_SECTION)
00256                 {
00257                     state = ST_FOUND_SECTION;
00258                     printf("FOUND_SECTION:%s\n",sectionName);
00259                 }
00260                 break;
00261             case ST_FOUND_SECTION:
00262                 keyName = malloc(MAX_LEN_SECTIONNAME);
00263                 keyValue = malloc(MAX_LEN_SECTIONNAME);
00264                 if(keyName == NULL || keyValue == NULL)
00265                 {
00266                     int error = errno;
00267                     printf("MALLOC:%d\n",error);
00268                     return error;
00269                 }
00270                 memset(keyName,0,MAX_LEN_SECTIONNAME);
00271                 memset(keyValue,0,MAX_LEN_SECTIONNAME);
00272
00273                 ret=getNameValuePair(token,['=','\n'],0,&keyName,&keyValue,MAX_LEN_SECTIONNAME,MAX_LEN_SECTIONNAME);
00274                 if(ret==NO_ERROR)
00275                 {
00276                     printf("configSizeCount: %d, i:%d\n",configSizeCount,i);
00277                     if(i<configSizeCount)
00278                     {
00279                         ptr_entry[i].sectionName = strdup(sectionName);
00280                         ptr_entry[i].keyValue= strdup(keyValue);
00281                         ptr_entry[i].keyName = strdup(keyName);
00282                     }
00283                     i++;
00284                     *returnedCount = i;
00285                     state = ST_FOUND_SECTION;
00286                 }
00287                 else {
00288                     state = ST_SKIP_READ;

```

```

00289         }
00290         free(keyName);
00291         free(keyValue);
00292         break;
00293     }
00294
00295     if(state != ST_SKIP_READ)
00296     {
00297         token = strtok(NULL, "\n");
00298     }
00299     else {
00300         state = ST_INIT;
00301     }
00302 }
00303 printf("token: %s\n", token);
00304 printf("buffer: %s\n--", buffer);
00305
00306 free(sectionName);
00307 free(buffer);
00308 printf("finish exiting parsing\nSTATE: %d\n", state);
00309 return NO_ERROR;
00310 }

```

4.3 config.h File Reference

Classes

- struct [configEntry](#)

Macros

- #define [NO_SECTION](#) 0
- #define [FOUND_SECTION](#) 10
- #define [ERROR_STR](#) 1001
- #define [ERROR_MAX_LEN](#) 2
- #define [NO_ERROR](#) 0
- #define [ERROR_DELIMITER_NOT_FOUND](#) 40
- #define [ST_INIT](#) 0
- #define [ST_FOUND_LEFT_DELIMITER](#) 1
- #define [ST_FOUND_RIGHT_DELIMITER](#) 2
- #define [ST_ERROR_NOT_FOUND_RIGHT_DELIMITER](#) 3
- #define [ST_ERROR_NOT_FOUND_LEFT_DELIMITER](#) 4
- #define [ST_FOUND_SECTION](#) 5
- #define [ST_SKIP_READ](#) 6
- #define [ST_FINISH](#) 20
- #define [ST_ERROR_GETSTRATPOS](#) 30
- #define [MAX_LEN_SECTIONNAME](#) 128
- #define [ERR_PARSECONFIG_UNKNOWN](#) 201

Functions

- int [loadConfig](#) (char *file, char **str_entry, char **host, int *interval, int size)
- int [checkSection](#) (char *str, char delimiterLeft, char delimiterRight, char **sectionName)
 - Here we check if the given string contains a section for example [SECTIONName] here delimiterLeft is [and delimiterRight is] if a section is found, the section name will be written to sectionName.*
- int [getStrAtPos](#) (char *str, int fromPos, int toPos, char **name, int sizeName)
 - Here we get / cut from fromPos to toPos and write it to an address.*
- int [getNameValuePair](#) (char *str, char leftDelimiterPos, char rightDelimiterPos, char **name, char **value, int sizeName, int sizeValue)
 - Input:*
- int [parseConfig](#) (char *buffer, struct [configEntry](#) **entry, int configSize, int *returnedCount)

4.3.1 Macro Definition Documentation

4.3.1.1 ERR_PARSECONFIG_UNKNOWN

```
#define ERR_PARSECONFIG_UNKNOWN 201
```

Definition at line 28 of file [config.h](#).

4.3.1.2 ERROR_DELIMITER_NOT_FOUND

```
#define ERROR_DELIMITER_NOT_FOUND 40
```

Definition at line 7 of file [config.h](#).

4.3.1.3 ERROR_MAX_LEN

```
#define ERROR_MAX_LEN 2
```

Definition at line 4 of file [config.h](#).

4.3.1.4 ERROR_STR

```
#define ERROR_STR 1001
```

Definition at line 3 of file [config.h](#).

4.3.1.5 FOUND_SECTION

```
#define FOUND_SECTION 10
```

Definition at line 2 of file [config.h](#).

4.3.1.6 MAX_LEN_SECTIONNAME

```
#define MAX_LEN_SECTIONNAME 128
```

Definition at line 25 of file [config.h](#).

4.3.1.7 NO_ERROR

```
#define NO_ERROR 0
```

Definition at line 5 of file [config.h](#).

4.3.1.8 NO_SECTION

```
#define NO_SECTION 0
```

Definition at line 1 of file [config.h](#).

4.3.1.9 ST_ERROR_GETSTRATPOS

```
#define ST_ERROR_GETSTRATPOS 30
```

Definition at line 22 of file [config.h](#).

4.3.1.10 ST_ERROR_NOT_FOUND_LEFT_DELIMITER

```
#define ST_ERROR_NOT_FOUND_LEFT_DELIMITER 4
```

Definition at line 15 of file [config.h](#).

4.3.1.11 ST_ERROR_NOT_FOUND_RIGHT_DELIMITER

```
#define ST_ERROR_NOT_FOUND_RIGHT_DELIMITER 3
```

Definition at line 14 of file [config.h](#).

4.3.1.12 ST_FINISH

```
#define ST_FINISH 20
```

Definition at line 19 of file [config.h](#).

4.3.1.13 ST_FOUND_LEFT_DELIMITER

```
#define ST_FOUND_LEFT_DELIMITER 1
```

Definition at line 12 of file [config.h](#).

4.3.1.14 ST_FOUND_RIGHT_DELIMITER

```
#define ST_FOUND_RIGHT_DELIMITER 2
```

Definition at line 13 of file [config.h](#).

4.3.1.15 ST_FOUND_SECTION

```
#define ST_FOUND_SECTION 5
```

Definition at line 16 of file [config.h](#).

4.3.1.16 ST_INIT

```
#define ST_INIT 0
```

Definition at line 11 of file [config.h](#).

4.3.1.17 ST_SKIP_READ

```
#define ST_SKIP_READ 6
```

Definition at line 17 of file [config.h](#).

4.3.2 Function Documentation

4.3.2.1 checkSection()

```
int checkSection (
    char * str,
    char delimiterLeft,
    char delimiterRight,
    char ** sectionName)
```

Here we check if the given string contains a section for example [SECTIONName] here delimiterLeft is [and delimiterRight is] if a section is found, the section name will be written to sectionName.

Input:

Parameters

<i>char</i>	**str: the string to check
<i>char</i>	delimiterLeft: the left delimiter to check for
<i>char</i>	delimiterRight: the right delimiter to check for

Output:

Parameters

<i>char</i>	**sectionName: if found the section Name of the section
-------------	---

Return:

Parameters

<i>int</i>	status_code: one of the following values:
------------	---

Definition at line 24 of file [config.c](#).

4.3.2.2 getNameValuePair()

```
int getNameValuePair (
    char * str,
    char leftDelimiterPos,
    char rightDelimiterPos,
    char ** name,
    char ** value,
    int sizeName,
    int sizeValue)
```

Input:

Here we get a "pair" of data, parsed from *str, witch consists of a keyname and a keyvalue. These are written to the pointers at char **name and char **value. These pair can be in the form of:

ex1:

NAME=VALUE

_____ ^ _____ ^

_____|_____ Here we have no delimiter this means rightDelimiterPos must be NULL

_____| This is the left delimiter

ex2:

name(value)

_____ ^ _____ ^

_____|_____ This is the rightDelimiterPos and must be ')'

_____| This is leftDelimiterPos which must be '('

Parameters

<i>char</i>	*str: the line in the form of a string where a key value pair is stored
<i>char</i>	leftDelimiterPos: the left delimiter for example '='
<i>char</i>	rightDelimiterPos: the right delimiter can be NULL in most cases, if NULL we assume that there is only one delimiter, which is in this case the leftDelimiterPos

Output:

Parameters

<i>char</i>	**name: The address where we store the name of the Key
<i>char</i>	**value: The address where we store the key value
<i>int</i>	sizeName: for size checking against memory allocated at **name
<i>int</i>	sizeValue: for size checking against memory allocated at **value

Return:

Returns

will return NO_ERROR (0) if successfull. If not it will return the error of the subroutine

Definition at line 151 of file [config.c](#).

4.3.2.3 getStrAtPos()

```
int getStrAtPos (
    char * str,
    int fromPos,
    int toPos,
    char ** name,
    int sizeName)
```

Here we get / cut from fromPos to toPos and write it to an address.

Input:

Parameters

<i>char</i>	*str: the string to cut
<i>int</i>	fromPos: from which position we want to copy, the pos is included and zero indexed
<i>int</i>	toPos: to which position we want to copy, the pos is included and zero indexed

Output:

Parameters

<i>char</i>	**name: here we will write the section name to
-------------	--

Input:

Parameters

<i>int</i>	sizeName: the size of the user allocated buffer at **name
------------	---

Definition at line 98 of file [config.c](#).

4.3.2.4 loadConfig()

```
int loadConfig (
    char * file,
    char ** str_entry,
    char ** host,
    int * intervall,
    int size)
```

4.3.2.5 parseConfig()

```
int parseConfig (
    char * originalBuffer,
    struct configEntry ** entry,
    int configSizeCount,
    int * returnedCount)
```

Given a null terminated buffer of content(ex. from a file) an parse it with a default syntax of: Sections -> [SECTIONNAME] name / value -> name=value

Input: char *originalBuffer: the buffer which holds the string for parsing. struct configEntry **entry: a user allocated buffer to which we write the parsed config data. int configSizeCount: the user allocated size of **entry. Output: int *returnedCount: to this variable the function writes the count of struct, which will be required to store all available data.

Note: The function returns the maximum allowed data structures, determined by configSizeCount. All data which exceeds will be dropped. To get the whole data we run the function a second time with the reallocated configSizeCount in the size of [returnedCount] structures.

Definition at line 215 of file [config.c](#).

4.4 config.h

[Go to the documentation of this file.](#)

```
00001 #define NO_SECTION 0
00002 #define FOUND_SECTION 10
00003 #define ERROR_STR 1001
00004 #define ERROR_MAX_LEN 2
00005 #define NO_ERROR 0
00006 //ERROR DELIMITER
00007 #define ERROR_DELIMITER_NOT_FOUND 40
00008
00009 //State Machine
00010
00011 #define ST_INIT 0
00012 #define ST_FOUND_LEFT_DELIMITER 1
00013 #define ST_FOUND_RIGHT_DELIMITER 2
00014 #define ST_ERROR_NOT_FOUND_RIGHT_DELIMITER 3
00015 #define ST_ERROR_NOT_FOUND_LEFT_DELIMITER 4
00016 #define ST_FOUND_SECTION 5
00017 #define ST_SKIP_READ 6
00018
00019 #define ST_FINISH 20
00020
00021 //state machine ERROR
00022 #define ST_ERROR_GETSTRATPOS 30
00023
00024 //LIMITS
00025 #define MAX_LEN_SECTIONNAME 128
00026
00027 //error parseConfig
00028 #define ERR_PARSECONFIG_UNKNOWN 201
00029
00030 struct configEntry
00031 {
00032     char *sectionName;
00033     char *keyName;
00034     char *keyValue;
00035 };
00036
00037
00038 int loadConfig(char *file, char **str_entry, char **host, int *intervall, int size);
00039 int checkSection(char *str, char delimiterLeft, char delimiterRight, char **sectionName);
00040
00041 int getStrAtPos(char *str, int fromPos, int toPos, char **name, int sizeName);
00042 int getNameValuePair(char *str, char leftDelimiterPos, char rightDelimiterPos, char **name, char
    **value, int sizeName, int sizeValue);
00043
00044 int parseConfig(char *buffer, struct configEntry **entry, int configSize, int *returnedCount);
```

4.5 file.c File Reference

```
#include "file.h"
#include <stdio.h>
```

Functions

- int [getFile](#) (char *fname, char **strContent, int cbSize, long *neededSize)

4.5.1 Function Documentation

4.5.1.1 getFile()

```
int getFile (
    char * fname,
    char ** strContent,
    int cbSize,
    long * neededSize)
```

Definition at line 17 of file [file.c](#).

4.6 file.c

[Go to the documentation of this file.](#)

```
00001 #include "file.h"
00002 #include <stdio.h>
00003 /*
00004  * Here we load a file and write the file as string to a memory address:
00005  * Input:
00006  *     char* fname: the name of the file to open
00007  *     int cbSize: the size of the strContent
00008  * Output:
00009  *     char **strContent: a pointer to a address where you have to allocate enough memory to store
the whole file
00010  *     int neededSize: this returns the needed size of the buffer strContent
00011  *
00012  * Note:
00013  *     to get the size define strContent as NULL, then the needed size will return the needed
buffersize
00014  *
00015  *
00016  */
00017 int getFile(char *fname, char **strContent,int cbSize,long *neededSize)
00018 {
00019     FILE *hfile = fopen(fname,"r");
00020     long file_size=0;
00021     int ret=0;
00022     if(hfile == NULL)
00023     {
00024         return FILE_ERROR_OPEN;
00025     }
00026
00027     printf("file openend:%s",fname);
00028     fseek(hfile,0,SEEK_END);
00029     file_size = ftell(hfile);
00030     if(strContent == NULL) //we must determine the size and return to neededSize
00031     {
00032         *neededSize = file_size+1;
00033         fclose(hfile);
00034         return NO_ERROR;
00035     }
00036
00037     if(cbSize < file_size)
```

```
00038     {
00039         *neededSize = file_size+1; //null terminator
00040         fclose(hfile);
00041         return FILE_ERROR_STRCONTENT_TO_SMALL;
00042     }
00043
00044     fseek(hfile,0,SEEK_SET);
00045     ret=fread(*strContent,file_size,1,hfile);
00046     if(ret != 1)
00047     {
00048         printf("Reading error read and should read mismatch\nnumber written elements:%d\n",
00049             ret);
00050         fclose(hfile);
00051         return FILE_ERROR_READ_MISMATCH;
00052     }
00053     //buffer end-1 = \0
00054     //buffer end-2 = \n
00055     //buffer end-3 = last character
00056     printf("strcontent: %ld, [%c]\n",*neededSize,*(*strContent+ *neededSize-3));
00057     *(*strContent + *neededSize -1) = '\0';
00058     printf("after zero assign: %ld, %s\n",*neededSize,(*strContent+ *neededSize-1));
00059     //printf("content:%s",*strContent);
00060     fclose(hfile);
00061     return NO_ERROR;
00062 }
00063
00064
```

4.7 file.h File Reference

Macros

- `#define NO_ERROR 0`
- `#define FILE_ERROR_OPEN 11`
- `#define FILE_ERROR_STRCONTENT_TO_SMALL 12`
- `#define FILE_ERROR_READ_MISMATCH 13`

Functions

- `int getFile (char *fname, char **strContent, int cbSize, long *neededSize)`

4.7.1 Macro Definition Documentation

4.7.1.1 FILE_ERROR_OPEN

```
#define FILE_ERROR_OPEN 11
```

Definition at line 4 of file [file.h](#).

4.7.1.2 FILE_ERROR_READ_MISMATCH

```
#define FILE_ERROR_READ_MISMATCH 13
```

Definition at line 6 of file [file.h](#).

4.7.1.3 FILE_ERROR_STRCONTENT_TO_SMALL

```
#define FILE_ERROR_STRCONTENT_TO_SMALL 12
```

Definition at line 5 of file [file.h](#).

4.7.1.4 NO_ERROR

```
#define NO_ERROR 0
```

Definition at line 1 of file [file.h](#).

4.7.2 Function Documentation

4.7.2.1 getFile()

```
int getFile (  
    char * fname,  
    char ** strContent,  
    int cbSize,  
    long * neededSize)
```

Definition at line 17 of file [file.c](#).

4.8 file.h

[Go to the documentation of this file.](#)

```
00001 #define NO_ERROR 0  
00002  
00003 //ERRORS  
00004 #define FILE_ERROR_OPEN 11  
00005 #define FILE_ERROR_STRCONTENT_TO_SMALL 12  
00006 #define FILE_ERROR_READ_MISMATCH 13  
00007  
00008 int getFile(char *fname, char **strContent,int cbSize,long *neededSize);
```

4.9 test.c File Reference

```
#include "config.h"  
#include <errno.h>  
#include <stdio.h>  
#include <stdlib.h>  
#include <string.h>  
#include "file.h"
```

Functions

- int [main](#) (void)


```

00064     int error = errno;
00065     printf("MALLOC: %d\n",error);
00066     return error;
00067 }
00068 memset(content,0,neededSize);
00069 if((ret=getFile("config-segfault.cfg",&content,neededSize,&neededSize))==NO_ERROR)
00070 {
00071     //printf("Successfull read file into buffer:%s|\n---\n",content);
00072 }
00073 else {
00074     printf("Error on getFile:%d\n",ret);
00075     free(content);
00076     return 1;
00077 }
00078 struct configEntry *entry=NULL;
00079 int returnedCount=0;
00080 int i=0;
00081 int count=10;
00082
00083 entry = malloc(count*sizeof(struct configEntry));
00084 if(entry == NULL)
00085 {
00086     int error = errno;
00087     printf("MALLOC: %d\n",error);
00088     return 0;
00089 }
00090 ret = parseConfig(content,&entry,count,&returnedCount);
00091 if(ret!=NO_ERROR)
00092 {
00093     printf("Error on parseConfig:%d\nReallocate from size %d, to %d\n",ret,count,returnedCount);
00094 }
00095 if(returnedCount > count)
00096 {
00097     for(i=0;i<count;i++)
00098     {
00099         free(entry[i].keyName);
00100         free(entry[i].keyValue);
00101         free(entry[i].sectionName);
00102     }
00103
00104     printf("Error on parseConfig:%d\nReallocate from size %d, to %d\n",ret,count,returnedCount);
00105     if((entry=realloc(entry,returnedCount*sizeof(struct configEntry)))==NULL)
00106     {
00107         printf("error could not reallocate from size %d to %d \n",count,returnedCount);
00108         return 1;
00109     }
00110     ret = parseConfig(content,&entry,returnedCount,&returnedCount);
00111     if(ret!=NO_ERROR)
00112     {
00113         printf("Error on parseConfig:%d\n",ret);
00114         return ret;
00115     }
00116     printf("returnedCount:%d\n",returnedCount);
00117 }
00118
00119
00120
00121 free(content);
00122
00123 for(i=0;i<returnedCount;i++)
00124 {
00125     printf("i:%d/%d, struct section: %s, keyname: %s, keyvalue:
%s\n",i,returnedCount,entry[i].sectionName,entry[i].keyName,entry[i].keyValue);
00126     free(entry[i].keyName);
00127     free(entry[i].keyValue);
00128     free(entry[i].sectionName);
00129 }
00130
00131
00132 free(keyValue);
00133 free(keyName);
00134 free(name);
00135 free(entry);
00136 free(sectionName);
00137 return 0;
00138 }
00139

```

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