Lab2

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Chapter 1

File Index

1.1 File List

Here is a list of all files with brief descriptions:

Chapter 2

File Documentation

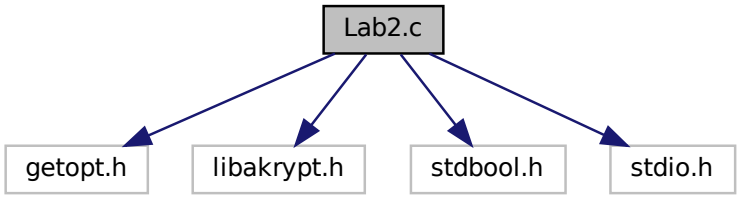
2.1 CMakeLists.txt File Reference

2.2 Lab2.c File Reference

Implements encryption and decription of files. Expected encrypted data input / output format is hexadecimal string.

```
#include <getopt.h>
#include <libakrypt.h>
#include <stdbool.h>
#include <stdio.h>
```

Include dependency graph for Lab2.c:



Macros

- #define ARGUMENT_LENGTH 32
- #define FILE_LENGTH 2048

Functions

- bool write_file (const char *buffer, size_t buffer_size, const char *path)

  Writes contents of the buffer to the specified file.
- bool read_file (char *buffer, size_t buffer_size, const char *path)

  Reads contents of the file to the buffer.
- int main (int argc, char **argv)

  Applications entry point.

2.2.1 Detailed Description

Implements encryption and decription of files. Expected encrypted data input / output format is hexadecimal string.

2.2.2 Macro Definition Documentation

2.2.2.1 ARGUMENT_LENGTH

```
#define ARGUMENT_LENGTH 32
```

2.2.2.2 FILE_LENGTH

```
#define FILE_LENGTH 2048
```

2.2.3 Function Documentation

2.2.3.1 main()

```
int main (
            int argc,
            char ** argv )
```

Applications entry point.

Parameters

argc	Number of external arguments.
argv	Pointers to external arguments.

Returns

Termination status.

Use getopt to analyze external arguments.

-p Required option. Additional argument - the password.

-i Required option. Additional argument - the name of the file to be encrypted.

-o Facultative option. Additional argument - the name of the file to store generated data. "encrypted/decrypted" by default.

-d Signals that the input data is encrypted and should be decrypted.

Fill buffer with the contents of the file.

Create libakrypt.

Create and set kuznechik key.

Encrypt data using created key.

Write encrypted data to file as a hexadecimal string.

Decrypt data using created key.

Write decrypted data to file.

Destroy context of the key & libakrypt instance.

2.2.3.2 read_file()

```
bool read_file (
             char * buffer,
             size_t buffer_size,
             const char * path )
```

Reads contents of the file to the buffer.

Parameters

buffer	Buffer, which will be filled with the contents of the file.
buffer_size	Size of the buffer.
path	File, from which the buffer will be filled.
return	True, if reading was successful, false otherwise.

2.2.3.3 write_file()

```
bool write_file (
             const char * buffer,
             size_t buffer_size,
             const char * path )
```

Writes contents of the buffer to the specified file.

Parameters

buffer	Buffer, which will be written to the file.
buffer_size	Size of the buffer.
path	File, which will be filled with the contents of the buffer.
return	True, if writing was successful, false otherwise.

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