

My Project

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Chapter 1

File Index

1.1 File List

Here is a list of all documented files with brief descriptions:

main.cpp	3
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Chapter 2

File Documentation

2.1 main.cpp File Reference

```
#include "random_functions.hpp"
```

Functions

- int **main** (int argc, char *argv[])

2.2 random_functions.cpp File Reference

```
#include "random_functions.hpp"
```

Functions

- double [random_number01](#) ()
- double [random_number_01_GSL](#) (gsl_rng *r)
- void [rejection_sampl_algo](#) (int number_samples=1)

2.2.1 Function Documentation

2.2.1.1 random_number01()

```
double random_number01 ( )
```

Draws a random number bewtween $[0, 1]$ via rand.

Returns

The drawn random number.

2.2.1.2 random_number_01_GSL()

```
double random_number_01_GSL (
    gsl_rng * r )
```

Draws a random number in $[0, 1]$ via the gsl.

Parameters

<i>r</i>	A pointer to the random number generator which is used.
----------	---

Returns

The drawn random number.

2.2.1.3 rejection_sampl_algo()

```
void rejection_sampl_algo (
    int number_samples = 1 )
```

Main function for random number evaluation. A first random number x_1 is drawn via rand. A second random number x_2 is drawn via gsl_rng_uniform.

Furthermore, an array of 10 doubles is allocated. However, someone seems to have forgotten to free the allocated space again in the end...

Parameters

<i>argc</i>	The number of arguments provided.
<i>argv</i>	An array of arguments (argv[0] is the name of the executable).

Returns

If everything worked fine, 0 is returned. rejection sampling algorithm this function produces specified by the input number of standard normal distributed values, which will be automatically written to the "rejection_↵
sampl.txt" file

Parameters

<i>number_samples</i>	an integer argument, specifies number of values, default = 1
-----------------------	--

interval bounds $[a, b]$, s.t. $\int_a^b p(x) dx = 1$, $p(x)$ density for a standard normal distribution

2.3 random_functions.hpp File Reference

```
#include <iostream>
#include <fstream>
```



```
#include <stdlib.h>
#include <stdio.h>
#include <gsl/gsl_rng.h>
#include <gsl/gsl_cdf.h>
#include <gsl/gsl_randist.h>
```

Functions

- double [random_number01](#) ()
- double [random_number_01_GSL](#) (gsl_rng *r)
- void [rejection_sampl_algo](#) (int number_samples)

2.3.1 Function Documentation

2.3.1.1 [random_number01\(\)](#)

```
double random_number01 ( )
```

Draws a random number bewtween $[0, 1]$ via rand.

Returns

The drawn random number.

2.3.1.2 [random_number_01_GSL\(\)](#)

```
double random_number_01_GSL (
    gsl_rng * r )
```

Draws a random number in $[0, 1]$ via the gsl.

Parameters

<i>r</i>	A pointer to the random number generator which is used.
----------	---

Returns

The drawn random number.

2.3.1.3 rejection_sampl_algo()

```
void rejection_sampl_algo (
    int number_samples = 1 )
```

Main function for random number evaluation. A first random number x_1 is drawn via rand. A second random number x_2 is drawn via gsl_rng_uniform.

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Parameters

<i>argc</i>	The number of arguments provided.
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Parameters

<i>number_samples</i>	an integer argument, specifies number of values, default = 1
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interval bounds $[a, b]$, s.t. $\int_a^b p(x) dx = 1$, $p(x)$ density for a standard normal distribution

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