# EnergyCalulator Library

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# Contents

# Chapter 1

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## 1.1 Class List

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

# Chapter 2

# File Index

## 2.1 File List

Here is a list of all files with brief descriptions:

# Chapter 3

# Class Documentation

## 3.1 EnergyCalc Class Reference

The EnergyCalc class deals with the relationship between CPU usage and power consumption.

`#include <energycalc.hpp>`

### Public Member Functions

- EnergyCalc ()
  *Default constructor for the EnergyCalc class.*
- EnergyCalc (map< double, double > CPUPowerMap)
  *Constructor for the EnergyCalc class that initializes the CPUPowerMap.*
- void SetCPUPower (map< double, double > CPUPowerMap)
  *Sets the CPUPowerMap with the provided map.*
- double CalculatePower (double cpuUsage)
  *Calculates the power consumption for the given CPU usage.*
- double CalculateCPU (double powerUsage)
  *Calculates the CPU usage for the given power consumption.*

### 3.1.1 Detailed Description

The EnergyCalc class deals with the relationship between CPU usage and power consumption.

### 3.1.2 Constructor & Destructor Documentation

#### 3.1.2.1 EnergyCalc() [1/2]

`EnergyCalc::EnergyCalc ( )`

Default constructor for the EnergyCalc class.

#### 3.1.2.2 EnergyCalc() [2/2]

```
EnergyCalc::EnergyCalc (
            map< double, double > CPUPowerMap )
```

Constructor for the EnergyCalc class that initializes the CPUPowerMap.

**Parameters**

| | |
|---|---|
| *CPUPowerMap* | Map storing CPU usage and corresponding power consumption values |

### 3.1.3 Member Function Documentation

#### 3.1.3.1 CalculateCPU()

```
double EnergyCalc::CalculateCPU (
            double powerUsage )
```

Calculates the CPU usage for the given power consumption.

**Parameters**

| | |
|---|---|
| *powerUsage* | Power consumption value |

**Returns**

CPU usage value

#### 3.1.3.2 CalculatePower()

```
double EnergyCalc::CalculatePower (
            double cpuUsage )
```

Calculates the power consumption for the given CPU usage.

**Parameters**

| | |
|---|---|
| *cpuUsage* | CPU usage value |

**Returns**

Power consumption value

#### 3.1.3.3 SetCPUPower()

```
void EnergyCalc::SetCPUPower (
            map< double, double > CPUPowerMap )
```

Sets the CPUPowerMap with the provided map.

**Parameters**

| | |
|---|---|
| *CPUPowerMap* | Map storing CPU usage and corresponding power consumption values |

The documentation for this class was generated from the following files:

- include/energycalc.hpp
- src/energycalc.cpp

# Chapter 4

# File Documentation

## 4.1 build/CMakeFiles/3.24.0-rc5/CompilerIdCXX/CMakeCXXCompilerId.cpp File Reference

### Macros

- #define __has_include(x) 0
- #define COMPILER_ID ""
- #define STRINGIFY_HELPER(X) #X
- #define STRINGIFY(X) STRINGIFY_HELPER(X)
- #define PLATFORM_ID
- #define ARCHITECTURE_ID
- #define DEC(n)
- #define HEX(n)
- #define CXX_STD __cplusplus

### Functions

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

### Variables

- char const * info_compiler = "INFO" ":" "compiler[" COMPILER_ID "]"
- char const * info_platform = "INFO" ":" "platform[" PLATFORM_ID "]"
- char const * info_arch = "INFO" ":" "arch[" ARCHITECTURE_ID "]"
- const char * info_language_standard_default
- const char * info_language_extensions_default

#### 4.1.1 Macro Definition Documentation

#### 4.1.1.1 __has_include

```
#define __has_include(
              x ) 0
```

#### 4.1.1.2 ARCHITECTURE_ID

```
#define ARCHITECTURE_ID
```

#### 4.1.1.3 COMPILER_ID

```
#define COMPILER_ID ""
```

#### 4.1.1.4 CXX_STD

```
#define CXX_STD __cplusplus
```

#### 4.1.1.5 DEC

```
#define DEC(
              n )
```

**Value:**

```
('0' + (((n) / 10000000)%10)), \
  ('0' + (((n) / 1000000)%10)),  \
  ('0' + (((n) / 100000)%10)),   \
  ('0' + (((n) / 10000)%10)),    \
  ('0' + (((n) / 1000)%10)),     \
  ('0' + (((n) / 100)%10)),      \
  ('0' + (((n) / 10)%10)),       \
  ('0' +  ((n) % 10))
```

#### 4.1.1.6 HEX

```
#define HEX(
               n )
```

**Value:**

```
('0' + ((n)>>28 & 0xF)), \
  ('0' + ((n)>>24 & 0xF)), \
  ('0' + ((n)>>20 & 0xF)), \
  ('0' + ((n)>>16 & 0xF)), \
  ('0' + ((n)>>12 & 0xF)), \
  ('0' + ((n)>>8  & 0xF)), \
  ('0' + ((n)>>4  & 0xF)), \
  ('0' + ((n)     & 0xF))
```

#### 4.1.1.7 PLATFORM_ID

```
#define PLATFORM_ID
```

#### 4.1.1.8 STRINGIFY

```
#define STRINGIFY(
               X ) STRINGIFY_HELPER(X)
```

#### 4.1.1.9 STRINGIFY_HELPER

```
#define STRINGIFY_HELPER(
               X ) #X
```

### 4.1.2 Function Documentation

#### 4.1.2.1 main()

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

### 4.1.3 Variable Documentation

#### 4.1.3.1 info_arch

```
char const* info_arch = "INFO" ":" "arch[" ARCHITECTURE_ID "]"
```

#### 4.1.3.2 info_compiler

```
char const* info_compiler = "INFO" ":" "compiler[" COMPILER_ID "]"
```

#### 4.1.3.3 info_language_extensions_default

```
const char* info_language_extensions_default
```

**Initial value:**

```
= "INFO" ":" "extensions_default["


  "OFF"
"]"
```

#### 4.1.3.4 info_language_standard_default

```
const char* info_language_standard_default
```

**Initial value:**

```
= "INFO" ":" "standard_default["


  "98"
"]"
```

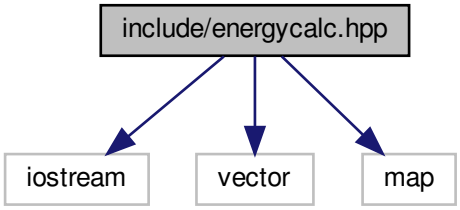
#### 4.1.3.5 info_platform

```
char const* info_platform = "INFO" ":" "platform[" PLATFORM_ID "]"
```

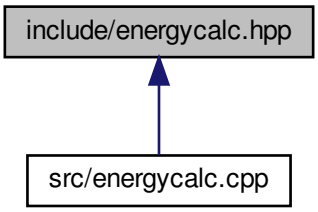
## 4.2 include/energycalc.hpp File Reference

```
#include <iostream>
#include <vector>
#include <map>
```

Include dependency graph for energycalc.hpp:




This graph shows which files directly or indirectly include this file:




### Classes

- class EnergyCalc

  *The EnergyCalc class deals with the relationship between CPU usage and power consumption.*

## 4.3 src/energycalc.cpp File Reference

```
#include "energycalc.hpp"
#include <Eigen/Dense>
```

Include dependency graph for energycalc.cpp: