Day7 Circuit

Generated by Doxygen 1.9.8

Chapter 1

Class Index

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 Circuit Class Reference

Public Member Functions

- Circuit ()=default
- void assembleCircuit (const vector< string > &instructions)

  Assembles the circuit from a list of instruction strings.
- uint16_t evaluate (const string &wire)

  Evaluates the signal on a given wire.
- uint16_t getSignal (const string &wire)

  Gets the signal on a specified wire.

3.1.1 Constructor & Destructor Documentation

3.1.1.1 Circuit()

```
Circuit::Circuit ( )  [default]
```

3.1.2 Member Function Documentation

3.1.2.1 assembleCircuit()

```
void Circuit::assembleCircuit (
            const vector< string > & instructions )  [inline]
```

Assembles the circuit from a list of instruction strings.

Parameters

instructions	Vector of instruction strings

Each instruction is parsed and stored in the circuitKit map with the output wire as the key.

3.1.2.2 evaluate()

```
uint16_t Circuit::evaluate (
            const string & wire )  [inline]
```

Evaluates the signal on a given wire.

Parameters

wire	The wire identifier

Returns

The signal value as uint16_t

This function recursively evaluates the signal on the specified wire, using memoization to cache previously computed values.

3.1.2.3 getSignal()

```
uint16_t Circuit::getSignal (
            const string & wire )  [inline]
```

Gets the signal on a specified wire.

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

- day7.cpp

3.2 Parser::Instruction Struct Reference

Public Attributes

- Operation op
- string input1
- string input2
- string outputWire

3.2.1 Member Data Documentation

3.2.1.1 input1

```
string Parser::Instruction::input1
```

3.2.1.2 input2

```
string Parser::Instruction::input2
```

3.2.1.3 op

```
Operation Parser::Instruction::op
```

3.2.1.4 outputWire

```
string Parser::Instruction::outputWire
```

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

- day7.cpp

3.3 Parser Class Reference

Classes

- struct Instruction

Public Types

- enum class Operation {
  AND , OR , LSHIFT , RSHIFT ,
  NOT , ASSIGN , UNDEFINED = 6 }

Public Member Functions

- Instruction parseInstruction (const string &line)

  Parses a single instruction line into an Instruction struct.

Static Public Member Functions

- static string trim (const string &str)

3.3.1 Member Enumeration Documentation

3.3.1.1 Operation

```
enum class Parser::Operation  [strong]
```

Enumerator

AND	
OR	
LSHIFT	
RSHIFT	
NOT	
ASSIGN	
UNDEFINED	

3.3.2 Member Function Documentation

3.3.2.1 parseInstruction()

```
Instruction Parser::parseInstruction (
            const string & line )  [inline]
```

Parses a single instruction line into an Instruction struct.

Parameters

line	The instruction line as a string

Note

Supports operations: AND, OR, LSHIFT, RSHIFT, NOT, ASSIGN

removes leading/trailing whitespace from inputs and outputs to avoid bugs due to formatting issues.

Returns

Parsed Instruction struct

3.3.2.2 trim()

```
static string Parser::trim (
            const string & str )  [inline], [static]
```

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

- day7.cpp

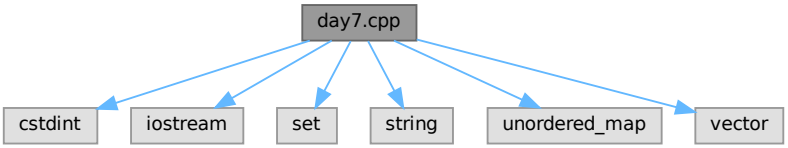
Chapter 4

File Documentation

4.1 day7.cpp File Reference

```
#include <cstdint>
#include <iostream>
#include <set>
#include <string>
#include <unordered_map>
#include <vector>
```

Include dependency graph for day7.cpp:



Classes

- class Parser
- struct Parser::Instruction
- class Circuit

Functions

- int main ()

4.1.1 Function Documentation

4.1.1.1 main()

```
int main ( )
```

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