Reference Manual

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4.4 RegisterFiles.java File Reference 13

Chapter 1

Class Index

1.1 Class List

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

Operation 5
OperationFileParser 7
OperationList 9
RegisterFiles 10

Chapter 2

File Index

2.1 File List

Here is a list of all files with brief descriptions:

Operation.java 13
OperationFileParser.java 13
OperationList.java 13
RegisterFiles.java 13

Chapter 3

Class Documentation

3.1 Operation Class Reference

Public Member Functions

- Operation (String opcode, String operand_1, String operand_2, String operand_-3, String comment)
- Operation (String opcode, String operand_1, String operand_2, String comment)
- Operation (Operation to_copy)
- String getOpcode ()
- String getComment ()
- String getOperand (int number) throws Exception
- int getNumberOperands ()
- String getOperands ()
- void setOpcode (String opcode)
- void setComment (String comment)
- void setOperand (int number, String operand_in) throws Exception
- String toString ()

Private Attributes

- String opcode

  Contains the opcode.

- String comment

  Stores the comment.

- String[ ] operands

  Stores all operands.

3.1.1 Detailed Description

THis class provides all Operation functionality.

3.1.2 Constructor & Destructor Documentation

3.1.2.1 Operation.Operation (String *opcode,* String *operand_1,* String *operand_2,* String *operand_3,* String *comment*)

Construct an Operation object give 1 opcode, 3 operands and one comment.

3.1.2.2 Operation.Operation (String *opcode,* String *operand_1,* String *operand_2,* String *comment*)

Construct an Operation object give 1 opcode, 2 operands and one comment.

3.1.2.3 Operation.Operation (Operation *to_copy*)

Construct an Operation object given an existing Operation object.

3.1.3 Member Function Documentation

3.1.3.1 String Operation.getComment ( )

Return the comment.

3.1.3.2 int Operation.getNumberOperands ( )

Return the number of operands

3.1.3.3 String Operation.getOpcode ( )

Return the opcode -- exempli gratia LOAD, SD, DADDI.

3.1.3.4 String Operation.getOperand (int *number*) throws Exception

Get the operand at the specified position. Positions start at "1". Return an error if the position is invalid.

3.1.3.5 String Operation.getOperands ( )

Return a String containing all operands.

3.1.3.6 void Operation.setComment (String *comment*)

Set a comment

3.1.3.7 void Operation.setOpcode (String *opcode*)

Set the Operation opcode.

3.1.3.8 void Operation.setOperand (int *number,* String *operand_in*) throws Exception

Set the operand at the specified position. Positions start at "1". Return an error if the position is invalid.

3.1.3.9 String Operation.toString ( )

Return the string represeation of the Operation object.

3.1.4 Member Data Documentation

3.1.4.1 String Operation.comment [private]

Stores the comment.

3.1.4.2 String Operation.opcode [private]

Contains the opcode.

3.1.4.3 String [] Operation.operands [private]

Stores all operands.

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

- Operation.java

3.2 OperationFileParser Class Reference

Public Member Functions

- OperationFileParser ()
- OperationFileParser (String filename)
- void parseFile (OperationList oplist, RegisterFiles reg_files) throws Exception
- String toString ()

Private Attributes

- String filename

  The input filename.

3.2.1 Detailed Description

This class provides all file parsing funtionality. Given an input file, one OperationList and one RegisterFiles will be generated.

3.2.2 Constructor & Destructor Documentation

3.2.2.1 OperationFileParser.OperationFileParser ( )

Set the input file to the default value of "a.in".

3.2.2.2 OperationFileParser.OperationFileParser (String *filename*)

Set the input file to the specified filename.

3.2.3 Member Function Documentation

3.2.3.1 void OperationFileParser.parseFile (OperationList *oplist*, RegisterFiles *reg_files*) throws Exception

Parse the input file; generate one OperationList and one RegisterFiles.

3.2.3.2 String OperationFileParser.toString ( )

Generates the string representation of the OperationFileParser Object.

3.2.4 Member Data Documentation

3.2.4.1 String OperationFileParser.filename [private]

The input filename.

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

- OperationFileParser.java

3.3 OperationList Class Reference

Public Member Functions

- OperationList ()
- OperationList (OperationList to_copy)
- ArrayList< Operation > getOperationList ()
- Operation getOperation (int num) throws Exception
- Operation getNextOperation () throws Exception
- boolean moreOperationsQueued ()
- void addOperation (Operation to_add)
- String toString ()

Private Attributes

- ArrayList< Operation > op_list

  The list op Operations.

- int curr_op

  The current Operation.

3.3.1 Detailed Description

This class provides all operation queueing and storage funtionality.

3.3.2 Constructor & Destructor Documentation

3.3.2.1 OperationList.OperationList ( )

Initialize the op_list.

3.3.2.2 OperationList.OperationList (OperationList *to_copy*)

Generate a new OperationList from the specified OperationList.

3.3.3 Member Function Documentation

3.3.3.1 void OperationList.addOperation (Operation *to_add*)

Add an operation to the OperationList

3.3.3.2 Operation OperationList.getNextOperation ( ) throws Exception

Get the next Operation to be scheduled.

3.3.3.3 Operation OperationList.getOperation (int *num*) throws Exception

Get an Operation given a position number. The first position is "1".

3.3.3.4 ArrayList<Operation> OperationList.getOperationList ( )

Return an ArrayList<Operation> that contains a copy of all Operations.

3.3.3.5 boolean OperationList.moreOperationsQueued ( )

Returns true when there is at least one Operation that hs not been scheduled. Returns false if there is not an Operation to schedule.

3.3.3.6 String OperationList.toString ( )

Generates the string representation of the Operation Object.

3.3.4 Member Data Documentation

3.3.4.1 int OperationList.curr_op [private]

The current Operation.

3.3.4.2 ArrayList<Operation> OperationList.op_list [private]

The list op Operations.

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

- OperationList.java

3.4 RegisterFiles Class Reference

Public Member Functions

- RegisterFiles ()
- RegisterFiles (RegisterFiles to_copy)
- Hashtable< String, String > getIntegerRegisters ()
- Hashtable< String, String > getFPRegisters ()
- String getRegister (String r_id) throws Exception

- void setRegister (String r_id, String val_in) throws Exception
- String toString ()

Static Public Attributes

- static final int NUM_INT_REGISTERS = 32
  Total number of integer registers.
- static final int NUM_FP_REGISTERS = 32
  Total number of floating point registers.

Private Attributes

- Hashtable< String, String > registers_int
  Consists of all integer registers.
- Hashtable< String, String > registers_fp
  Consists of all floating point registers.

3.4.1 Detailed Description

This class provides all register functionality for integer and floating point register files.

3.4.2 Constructor & Destructor Documentation

3.4.2.1 RegisterFiles.RegisterFiles ( )

Constructs the register files; initializes all floating point and integer registers to "0";

3.4.2.2 RegisterFiles.RegisterFiles (RegisterFiles *to_copy*)

Generates a copy of an existing RegisterFiles object.

3.4.3 Member Function Documentation

3.4.3.1 Hashtable<String, String> RegisterFiles.getFPRegisters ( )

Returns a Hashtable that conatins a copy of the current floating point register file.

3.4.3.2 Hashtable<String, String> RegisterFiles.getIntegerRegisters ( )

Returns a Hashtable that conatins a copy of the current integer register file.

3.4.3.3 String RegisterFiles.getRegister (String *r_id*) throws Exception

Returns the current value of the specified register. An "Invalid register ID" exception is thrown if the specified register does not exist.

3.4.3.4 void RegisterFiles.setRegister (String *r_id*, String *val_in*) throws Exception

Sets a new value for the specified register. An "Invalid register ID" exception is thrown if the specified register does not exist.

3.4.3.5 String RegisterFiles.toString ( )

Generates the string representation of the RegisterFiles Object.

3.4.4 Member Data Documentation

3.4.4.1 final int RegisterFiles.NUM_FP_REGISTERS = 32 [static]

Total number of floating point registers.

3.4.4.2 final int RegisterFiles.NUM_INT_REGISTERS = 32 [static]

Total number of integer registers.

3.4.4.3 Hashtable<String, String> RegisterFiles.registers_fp [private]

Consists of all floating point registers.

3.4.4.4 Hashtable<String, String> RegisterFiles.registers_int [private]

Consists of all integer registers.

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

- RegisterFiles.java

Chapter 4

File Documentation

4.1 Operation.java File Reference

Classes

- class Operation

4.2 OperationFileParser.java File Reference

Classes

- class OperationFileParser

4.3 OperationList.java File Reference

Classes

- class OperationList

4.4 RegisterFiles.java File Reference

Classes

- class RegisterFiles

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