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jminusminus

## Class CLFlowControlInstruction

- [java.lang.Object](#)
  - [jminusminus.CLIInstruction](#)
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```
class CLFlowControlInstruction  
extends CLIInstruction
```

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Representation for FLOW\_CONTROL1, FLOW\_CONTROL2, FLOW\_CONTROL3 and FLOW\_CONTROL4 instructions.

- **Field Summary**
- **Fields inherited from class jminusminus.CLIInstruction**  
[instructionInfo](#), [localVariableIndex](#), [mnemonic](#), [opcode](#),  
[operandCount](#), [pc](#), [stackUnits](#)
- **Constructor Summary**

Constructors

**Constructor and Description**

```
CLFlowControlInstruction(int pc, int index,  
boolean isWidened)  
Construct a CLFlowControlInstruction object for RET instruction.
```

```
CLFlowControlInstruction(int opcode, int pc,  
String jumpToLabel)  
Construct a CLFlowControlInstruction object for FLOW_CONTROL1 instructions.
```

```
CLFlowControlInstruction(int opcode, int pc,
```

```
String defaultLabel, int low, int high,
ArrayList<String> labels)
```

Construct a CLFlowControlInstruction object for TABLESWITCH instruction.

```
CLFlowControlInstruction(int opcode, int pc,
String defaultLabel, int numPairs,
TreeMap<Integer,String> matchLabelPairs)
```

Construct a CLFlowControlInstruction object for LOOKUPSWITCH instruction.

## • Method Summary

Methods	
Modifier and Type	Method and Description
int	<b>jumpToOffset()</b> Return the pc of instruction to jump to.
boolean	<b>resolveLabels</b> (Hashtable<String,Integer> labelToPC) Resolve the jump labels to the corresponding offset values using the given label to pc mapping.
ArrayList<Integer>	<b>toBytes()</b> Return the bytecode for this instruction.

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## • Methods inherited from class `jminusminus.CLInstruction`

`byteAt`, `isValid`, `localVariableIndex`, `mnemonic`, `opcode`, `operandCount`, `pc`, `stackUnits`

## • Methods inherited from class `java.lang.Object`

`clone`, `equals`, `finalize`, `getClass`, `hashCode`, `notify`, `notifyAll`, `toString`, `wait`, `wait`, `wait`

## • Constructor Detail

### • CLFlowControlInstruction

```
publicCLFlowControlInstruction(intopcode,
                               intpc,
                               StringjumpToLabel)
```

Construct a CLFlowControlInstruction object for FLOW\_CONTROL1 instructions.

#### Parameters:

- `opcode` - the opcode for this instruction.
- `pc` - index of this instruction within the code array of a method.
- `jumpToLabel` - the label to jump to.

### • CLFlowControlInstruction

```
publicCLFlowControlInstruction(intpc,
                               intindex,
                               booleanisWidened)
```

Construct a CLFlowControlInstruction object for RET instruction.

#### Parameters:

- `pc` - index of this instruction within the code array of a method.

index - index of the local variable containing the return address.  
isWidened - whether this instruction is preceeded by the WIDE (widening) instruction.

- **CLFlowControlInstruction**

```
public CLFlowControlInstruction(int opcode,
                                int pc,
                                String defaultLabel,
                                int low,
                                int high,
                                ArrayList<String> labels)
```

Construct a CLFlowControlInstruction object for TABLESWITCH instruction.

**Parameters:**

opcode - the opcode for this instruction.  
pc - index of this instruction within the code array of a method.  
defaultLabel - jump label for default value.  
low - smallest value of index.  
high - highest value of index.  
labels - list of jump labels for each index value from low to high, end values included.

- **CLFlowControlInstruction**

```
public CLFlowControlInstruction(int opcode,
                                int pc,
                                String defaultLabel,
                                int numPairs,
                                TreeMap<Integer, String> matchLabelPairs)
```

Construct a CLFlowControlInstruction object for LOOKUPSWITCH instruction.

**Parameters:**

opcode - the opcode for this instruction.  
pc - index of this instruction within the code array of a method.  
defaultLabel - jump label for default value.  
numPairs - number of pairs in the match table.  
matchLabelPairs - key match table.

- **Method Detail**

- **resolveLabels**

```
public boolean resolveLabels(Hashtable<String, Integer> labelToPC)
```

Resolve the jump labels to the corresponding offset values using the given label to pc mapping. If unable to resolve a label, the offset is set such that the next instruction will be executed.

**Parameters:**

labelToPC - label to pc mapping.

**Returns:**

true if all labels were resolved successfully; false otherwise.

- **jumpToOffset**

```
public int jumpToOffset()
```

Return the pc of instruction to jump to.

**Returns:**

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pc to jump to.

- **toBytes**

```
public ArrayList<Integer> toBytes()
```

**Description copied from class: `CLInstruction`**

Return the bytecode for this instruction.

**Specified by:**

`toBytes` in class `CLInstruction`

**Returns:**

bytecode.

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- Method

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