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- [Prev Class](#)
- [Next Class](#)

- [Frames](#)
- [No Frames](#)

- [All Classes](#)

- [Summary:](#)
- [Nested |](#)
- [Field |](#)
- [Constr |](#)
- [Method](#)

- [Detail:](#)
- [Field |](#)
- [Constr |](#)
- [Method](#)

jminusminus

Class NHIRInstruction

- [java.lang.Object](#)
 - [jminusminus.NHIRInstruction](#)

- Direct Known Subclasses:

[NHIRALoad](#), [NHIRArithmetic](#), [NHIRAShre](#), [NHIRConditionalJump](#), [NHIRGetField](#), [NHIRGoto](#), [NHIRIntConstant](#), [NHIRInvoke](#), [NHIRLoadLocal](#), [NHIRLocal](#), [NHIRNewArray](#), [NHIRPhiFunction](#), [NHIRPutField](#), [NHIRReturn](#), [NHIRStringConstant](#)

```
abstract class NHIRInstruction
extends Object
```

High-level intermediate representation (HIR) of a JVM instruction.

- **Field Summary**

Fields	
Modifier and Type	Field and Description
NBasicBlock	block The block containing this instruction.
protected static String[]	hirMnemonic Maps JVM opcode to a string mnemonic for HIR instructions.
int	id Unique identifier of this instruction.
NLIRInstruction	lir The LIR instruction corresponding to this HIR instruction.

<code>String</code>	<code>lType</code> Long type name for this instruction.
<code>String</code>	<code>sType</code> Short type name for this instruction.

- **Constructor Summary**

Constructors

Modifier	Constructor and Description
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protected	<code>NHIRInstruction</code> (<code>NBasicBlock</code> block, int id) Construct an NHIRInstruction object.
protected	<code>NHIRInstruction</code> (<code>NBasicBlock</code> block, int id, <code>String</code> sType, <code>String</code> lType) Construct an NHIRInstruction object.

- **Method Summary**

Methods

Modifier and Type	Method and Description
-------------------	------------------------

boolean	<code>equals</code> (<code>NHIRInstruction</code> other) Return true if this instruction is the same as the other, false otherwise.
<code>String</code>	<code>id</code> () Return the identifier of this instruction with the short type name prefixed.
<code>NLIRInstruction</code>	<code>toLir</code> () Convert and return a low-level representation (LIR) of this HIR instruction.
<code>String</code>	<code>toString</code> () Return a string representation of this instruction.

- **Methods inherited from class `java.lang.Object`**

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

- **Field Detail**

- **`hirMnemonic`**

protected static `String`[] `hirMnemonic`

Maps JVM opcode to a string mnemonic for HIR instructions. For example, the opcode `imul` is mapped to the string `"*"`.

- **`block`**

public `NBasicBlock` `block`

The block containing this instruction.

- **`id`**

public int `id`

Unique identifier of this instruction.

- **sType**

`publicString` sType

Short type name for this instruction.

- **lType**

`publicString` lType

Long type name for this instruction.

- **lir**

`publicNLIRInstruction` lir

The LIR instruction corresponding to this HIR instruction.

- **Constructor Detail**

- **NHIRInstruction**

`protectedNHIRInstruction(NBasicBlockblock,`
`intid)`

Construct an NHIRInstruction object.

Parameters:

block - enclosing block.

id - identifier of the instruction.

- **NHIRInstruction**

`protectedNHIRInstruction(NBasicBlockblock,`
`intid,`
`Stringstype,`
`Stringltype)`

Construct an NHIRInstruction object.

Parameters:

block - enclosing block.

id - identifier of the instruction.

sType - short type name of the instruction.

lType - long type name of the instruction.

- **Method Detail**

- **equals**

`publicbooleanequals(NHIRInstructionother)`

Return true if this instruction is the same as the other, false otherwise. Two instructions are the same if their ids are the same.

Parameters:

other - the instruction to compare to.

Returns:

true if the instructions are the same, false otherwise.

- **toLir**

`publicNLIRInstructiontoLir()`

Convert and return a low-level representation (LIR) of this HIR instruction.

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Also adds the returned LIR instruction to the list of LIR instructions for the block containing this instruction, along with any other intermediate LIR instructions needed.

Returns:

LIR instruction corresponding to this HIR instruction.

- **id**

`publicStringid()`

Return the identifier of this instruction with the short type name prefixed.

Returns:

identifier of this IR instruction with the short type name prefixed.

- **toString**

`publicStringtoString()`

Return a string representation of this instruction.

Overrides:

`toString` in class `Object`

Returns:

string representation of this instruction.

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