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jminusminus

Class NPhysicalRegister

- java.lang.Object
  - jminusminus.NRegister
    - jminusminus.NPhysicalRegister

```
class NPhysicalRegister
extends NRegister
```

An abstraction for a physical (SPIM) register.

- **Field Summary**

Fields	
Modifier and Type	**Field and Description**
static int	**A0** Argument 1.
static int	**A1** Argument 2.
static int	**A2** Argument 3.
static int	**A3** Argument 4.
static int	**AT** Reserved for assembler.
static int	**FP** Frame pointer.

static int	**GP** Pointer to global area.
static int	**K0** Reserved for OS kernel.
static int	**K1** Reserved for OS kernel.
static int	**MAX_COUNT** Maximum number of physical registers used for allocation, starting at T0.
static int	**RA** Return address (used by function call).
static NPhysicalRegister[]	**regInfo** Maps register number to the register's representation.
static int	**S0** Temporary (preserved across call).
static int	**S1** Temporary (preserved across call).
static int	**S2** Temporary (preserved across call).
static int	**S3** Temporary (preserved across call).
static int	**S4** Temporary (preserved across call).
static int	**S5** Temporary (preserved across call).
static int	**S6** Temporary (preserved across call).
static int	**S7** Temporary (preserved across call).
static int	**SP** Stack pointer.
static int	**T0** Temporary (not preserved across call).
static int	**T1** Temporary (not preserved across call).
static int	**T2** Temporary (not preserved across call).
static int	**T3** Temporary (not preserved across call).
static int	**T4** Temporary (not preserved across call).
static int	**T5** Temporary (not preserved across call).

static int	**T6**	
	Temporary (not preserved across call).	
static int	**T7**	
	Temporary (not preserved across call).	
static int	**T8**	
	Temporary (not preserved across call).	
static int	**T9**	
	Temporary (not preserved across call).	
static int	**V0**	
	Expression evaluation and results of a function.	
static int	**V1**	
	Expression evaluation and results of a function.	
static int	**ZERO**	
	Constant 0.	

- **Fields inherited from class jminusminus.NRegister**

  name, number

- **Constructor Summary**

Constructors
Constructor and Description
NPhysicalRegister(int number, String name)
Construct an NPhysicalRegister.

- **Method Summary**

	Methods
Modifier and Type	**Method and Description**
String	**toString**() Return a string representation of this physical register.

- **Methods inherited from class jminusminus.NRegister**

  name, number

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

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

- **Field Detail**

  - **MAX_COUNT**

  public staticint MAX_COUNT

  Maximum number of physical registers used for allocation, starting at T0.

- **ZERO**

```
public static finalint ZERO
```

Constant 0.

See Also:
> Constant Field Values

- **AT**

```
public static finalint AT
```

Reserved for assembler.

See Also:
> Constant Field Values

- **V0**

```
public static finalint V0
```

Expression evaluation and results of a function.

See Also:
> Constant Field Values

- **V1**

```
public static finalint V1
```

Expression evaluation and results of a function.

See Also:
> Constant Field Values

- **A0**

```
public static finalint A0
```

Argument 1.

See Also:
> Constant Field Values

- **A1**

```
public static finalint A1
```

Argument 2.

See Also:
> Constant Field Values

- **A2**

```
public static finalint A2
```

Argument 3.

See Also:
> Constant Field Values

- **A3**

```
public static finalint A3
```

Argument 4.

See Also:
> Constant Field Values

- **T0**

```
public static finalint T0
```

Temporary (not preserved across call).

See Also:
> Constant Field Values

- **T1**

```
public static finalint T1
```

Temporary (not preserved across call).

See Also:
> Constant Field Values

- **T2**

```
public static finalint T2
```

Temporary (not preserved across call).

See Also:
> Constant Field Values

- **T3**

```
public static finalint T3
```

Temporary (not preserved across call).

See Also:
> Constant Field Values

- **T4**

```
public static finalint T4
```

Temporary (not preserved across call).

See Also:
> Constant Field Values

- **T5**

```
public static finalint T5
```

Temporary (not preserved across call).

See Also:
> Constant Field Values

- **T6**

```
public static finalint T6
```

Temporary (not preserved across call).

See Also:
> Constant Field Values

- **T7**

```
public static finalint T7
```

Temporary (not preserved across call).

See Also:
> Constant Field Values

- **S0**

```
public static finalint S0
```

Temporary (preserved across call).

See Also:
    Constant Field Values

- **S1**

```
public static finalint S1
```

Temporary (preserved across call).

See Also:
    Constant Field Values

- **S2**

```
public static finalint S2
```

Temporary (preserved across call).

See Also:
    Constant Field Values

- **S3**

```
public static finalint S3
```

Temporary (preserved across call).

See Also:
    Constant Field Values

- **S4**

```
public static finalint S4
```

Temporary (preserved across call).

See Also:
    Constant Field Values

- **S5**

```
public static finalint S5
```

Temporary (preserved across call).

See Also:
    Constant Field Values

- **S6**

```
public static finalint S6
```

Temporary (preserved across call).

See Also:
    Constant Field Values

- **S7**

```
public static finalint S7
```

Temporary (preserved across call).

See Also:
    Constant Field Values

- **T8**

```
public static finalint T8
```

Temporary (not preserved across call).
See Also:

- **T9**

```
public static finalint T9
```

Temporary (not preserved across call).
See Also:

- **K0**

```
public static finalint K0
```

Reserved for OS kernel.
See Also:

- **K1**

```
public static finalint K1
```

Reserved for OS kernel.
See Also:

- **GP**

```
public static finalint GP
```

Pointer to global area.
See Also:

- **SP**

```
public static finalint SP
```

Stack pointer.
See Also:

- **FP**

```
public static finalint FP
```

Frame pointer.
See Also:

- **RA**

```
public static finalint RA
```

Return address (used by function call).
See Also:

- **regInfo**

```
public static finalNPhysicalRegister[] regInfo
```

Maps register number to the register's representation.

- **Constructor Detail**

  - **NPhysicalRegister**

```
publicNPhysicalRegister(intnumber,
                   Stringname)
```

Construct an NPhysicalRegister.

Parameters:
number - number of the register.
name - name of the register.

- **Method Detail**

  - **toString**

```
publicStringtoString()
```

Return a string representation of this physical register.

Overrides:
toString in class Object

Returns:
string representation.