

Ada Programming/All Keywords

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Augusta Ada King, Countess of Lovelace.

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1 Keywords

1.1 Language summary keywords

Most Ada **keywords** have different functions depending on where they are used. A good example is **for** which controls the representation clause when used within a declaration part and controls a loop when used within an implementation.

In Ada, a keyword is also a reserved word, so it cannot be used as an identifier.

1.2 List of keywords

Ada Keywords			
abort	else	new	return
abs	elsif	not	reverse
abstract	end	null	
accept	entry		select
access	exception	of	separate
aliased	exit	or	subtype
all		others	synchronized
and	for	out	
array	function	overriding	tagged
at			task
	generic	package	terminate
begin	goto	pragma	then
body		private	type
	if	procedure	
case	in	protected	until
constant	interface		use
	is	raise	
declare		range	when
delay	limited	record	while
delta	loop	rem	with
digits		renames	
do	mod	requeue	xor

1.3 See also

1.3.1 Wikibook

- Ada Programming

1.3.2 Ada 95 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary (Annotated (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

1.3.3 Ada 2005 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/05rm/html/RM-2-9.html>)

- (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary (Annotated)
- (<http://www.adaic.com/standards/05rm/html/RM-P.html>)
- (<http://www.adaic.com/standards/05aarm/html/AA-P.html>))

1.3.4 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

2 Keywords: abort

2.1 abort

The **abort** is used to abort either a task (thread) or partition (process).

2.2 See also

2.2.1 Wikibook

- Ada Programming
- Ada Programming/Keywords
- Ada Programming/Tasking

2.2.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary (Annotated)
- (<http://www.adaic.com/standards/95lrm/html/RM-P.html>)
- (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))
- 9.8 Abort of a Task - Abort of a Sequence of Statements (Annotated)
- (<http://www.adaic.com/standards/95lrm/html/RM-9-8.html>)
- (<http://www.adaic.com/standards/95aarm/html/AA-9-8.html>))
- E.1 Partitions (Annotated)
- (<http://www.adaic.com/standards/95lrm/html/RM-E-1.html>)
- (<http://www.adaic.com/standards/95aarm/html/AA-E-1.html>))

2.2.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

3 Keywords: abs

This keyword is used for the operator that gets the absolute value of an integer number.

```
y := abs (x);
```

3.1 See also

3.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

3.1.2 Ada 95 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- 4.4 Expressions (<http://www.adaic.com/standards/95lrm/html/RM-4-4.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-4-4.html>))
- 4.5.6 Highest Precedence Operators (<http://www.adaic.com/standards/95lrm/html/RM-4-5-6.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-4-5-6.html>))
- Annex P (informative) Syntax Summary (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

3.1.3 Ada 2005 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/05rm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-2-9.html>))
- 4.4 Expressions (<http://www.adaic.com/standards/05rm/html/RM-4-4.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-4-4.html>))
- 4.5.6 Highest Precedence Operators (<http://www.adaic.com/standards/05rm/html/RM-4-5-6.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-4-5-6.html>))
- Annex P (informative) Syntax Summary (<http://www.adaic.com/standards/05rm/html/RM-P.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-P.html>))

3.1.4 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)
- 5.5.3 Parenthetical Expressions (http://www.adaic.org/docs/95style/html/sec_5/5-5-3.html)

4 Keywords: abstract

4.1 Summary

The keyword **abstract** is used to define an abstract tagged type. See Ada Programming/Object Orientation for details on object orientation in Ada.

4.2 See also

4.2.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

4.2.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)

- (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary (Annotated)
- (<http://www.adaic.com/standards/95lrm/html/RM-P.html>)
- (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))
- 3.9.3 Abstract Types and Subprograms (Annotated)
- (<http://www.adaic.com/standards/95lrm/html/RM-3-9-3.html>)
- (<http://www.adaic.com/standards/95aarm/html/AA-3-9-3.html>))

4.2.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

5 Keywords: accept

5.1 Summary

The keyword **accept** is used in Ada tasks for accepting a rendezvous.

5.2 See also

5.2.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

5.2.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
- (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary (Annotated)
- (<http://www.adaic.com/standards/95lrm/html/RM-P.html>)
- (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))
- 9.7.1 Selective Accept (<http://www.adaic.com/standards/95lrm/html/RM-9-7-1.html>)
- (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-9-7-1.html>))
- 9.5.2 Entries and Accept Statements (Annotated)
- (<http://www.adaic.com/standards/95lrm/html/RM-9-5-2.html>)
- (<http://www.adaic.com/standards/95aarm/html/AA-9-5-2.html>))

5.2.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

6 Keywords: access

This keyword is used in access types declarations and anonymous access parameters.

6.1 See also

6.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

6.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary (Annotated) (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

6.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

7 Keywords: aliased

7.1 Description

If you come from C/C++ you are probably used to the fact that every element of an array, record and other variables has an address. The C/C++ standards actually demands that. In Ada this is not true.

Ada is a self optimizing language - there is for example no **register** keyword like in C/C++. Ada compilers will use a register for storage automatically. Incidentally, most C/C++ compilers nowadays just ignore the **register** and allocate registers themself, just like Ada does.

So if you want to take an access from any variable you need to tell the compiler that the variable needs to be in memory and may not reside inside a register. This is what the keyword aliased is for.

7.2 For variables

```
I : aliased Integer := 0;
```

7.3 For type declarations

7.3.1 For the elements of an array

Declaring an **array** as **aliased** will only ensure that the array as a whole has an address. It says nothing about the individual elements of the **array** - which may be packed in a way that more then one element has the same address. You need to declare the actual elements as aliased as well. You can read in Types:array how this is done. Here is just a short example:

```
type Day_Of_Month is range 1 .. 31;
type Day_Has_Appointment is array (Day_Of_Month) of aliased Boolean;
```

7.3.2 For the elements of a record

Just like arrays, declaring a record as aliased will only ensure that the record as a whole has an address. It says nothing about the individual elements the record - - which again may be packed and share addresses. Again you need to declare the actual elements as aliased as well. You can read in `Types:record` how this is done. Here is just a short example:

```
type Basic_Record is
  record
    A : aliased Integer;
  end record;
```

7.4 See also

7.4.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

7.4.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrn/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrn/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))
- 3.10 Access Types (<http://www.adaic.com/standards/95lrn/html/RM-3-10.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-3-10.html>))

7.4.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

8 Keywords: all

This keyword is used in:

- General access types declaration
- Explicit dereferencing of access variables

8.1 See also

8.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

8.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrn/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrn/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

8.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

9 Keywords: and

9.1 Logical operator

9.1.1 Boolean operator

```
X : Boolean := A > 10 and A < 20;
```

9.1.2 Boolean shortcut operator

Shortcut operators are used to make the evaluation of parts of boolean expressions conditional: *and then*, *or else*. This should never be done to speed up the evaluation (with modern optimizing compilers, it will possibly not have that effect). The correct use is to prevent the evaluation of expressions known to raise an exception.

```
if Dog /= null and then G (Dog) then  
  Walk (Dog);  
end if;
```

In the example above, `G (Dog)` is only called when the pointer `Dog` is not `null`, i.e. it actually points to something.

Actually *and then* and *or else* are not operators in the sense of the reference manual, they are called 'Short-circuit Control Forms'. The difference is that (true) operators can be redefined (i.e. overloaded), whereas these cannot. They are however defined for any boolean type.

Since Ada allows parallel evaluation of the arguments for an expression, shortcut operators are not the standard way of evaluating boolean expressions. In case the final result of the evaluation is guaranteed to be the same, the compiler is allowed to use a shortcut evaluation.

9.1.3 Boolean operator on arrays

The `and` operator is applied to each pair of boolean elements from the left and right arrays. The result has the same bounds than the left operand.

```
type Day_Of_Month is range 1 .. 31;  
type Month_Array is array (Day_Of_Month) of Boolean;  
  
X : Month_Array := Function_1;  
Y : Month_Array := Function_2;  
Z : Month_Array := X and Y;
```

9.1.4 Bitwise operator

The operator `and` could be used with modular types to perform bitwise operations.

9.2 Adding interfaces to tagged types

This language feature will be made available in the forthcoming Ada 2005 standard.

```

type Programmer is new Person
                  and Printable
with
  record
    Skilled_In : Language_List;
  end record;

```

9.3 See also

9.3.1 Wikibook

- Ada Programming
- Ada Programming/Keywords
- Ada Programming/Operators
- Ada Programming/Keywords/interface

9.3.2 Ada 95 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrn/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- 4.4 Expressions (<http://www.adaic.com/standards/95lrn/html/RM-4-4.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-4-4.html>))
- Annex P (informative) Syntax Summary (Annotated (<http://www.adaic.com/standards/95lrn/html/RM-P.html>) (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

9.3.2.1 Ada 2005 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/05rm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-2-9.html>))
- 3.9.4 Interface Types (<http://www.adaic.com/standards/05rm/html/RM-3-9-4.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-3-9-4.html>))
- 4.4 Expressions (<http://www.adaic.com/standards/05rm/html/RM-4-4.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-4-4.html>))
- Annex P (informative) Syntax Summary (Annotated (<http://www.adaic.com/standards/05rm/html/RM-P.html>) (<http://www.adaic.com/standards/05aarm/html/AA-P.html>))

9.3.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

10 Keywords: array

This keyword is used in the declaration of array types and anonymous array objects.

10.1 See also

10.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

10.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary (Annotated) (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

10.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

11 Keywords: at

This keyword is used in representation clauses.

11.1 See also

11.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

11.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary (Annotated) (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

11.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

12 Keywords: begin

The **begin** keyword in Ada is almost synonymous with the { in C/C++/Java. In the paradigm of structured programming languages, a keyword or symbol is often needed to delimit the beginning of the body from the element (i.e. if, elsif, for loop, while loop) to which it pertains.

For the case of subprograms, packages, tasks and blocks this word is **begin**.

For example

```
procedure Some_Procedure is
begin
    Do_Something;
    Do_Something_Else;
end Some_Procedure;
```

The **begin** keyword is always closed with the **end** keyword. The opposite is not true in Ada.

12.1 See also

12.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords
- Ada Programming/Tasking

12.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))
(Annotated
- 9.8 Abort of a Task - Abort of a Sequence of Statements
(<http://www.adaic.com/standards/95lrm/html/RM-9-8.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-9-8.html>)) (Annotated
- E.1 Partitions (<http://www.adaic.com/standards/95lrm/html/RM-E-1.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-E-1.html>))

12.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

13 Keywords: body

This keyword is used to define the body (implementation) of the following units:

- Packages
- Tasks and protected units

13.1 See also

13.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

13.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>)
(Annotated

(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

13.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

14 Keywords: case

This keyword is used in case statements and variant record definitions.

14.1 See also

14.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

14.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

14.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

15 Keywords: constant

This keyword is used to declare constant objects and named numbers.

15.1 See also

15.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

15.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

15.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

16 Keywords: declare

This keyword is used to mark begining of the declarative part of a block.

```
Block_Name :
  declare
    A_Variable : The_Type;
  begin
    Use A_Variable
  end Block_Name;
```

The *Block_Name* is optional.

16.1 See also

16.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

16.1.2 Ada 95 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- 5.6 Block Statements (<http://www.adaic.com/standards/95lrm/html/RM-5-6.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-5-6.html>))
- Annex P (informative) Syntax Summary (Annotated) (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

16.1.3 Ada 2005 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/05rm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-2-9.html>))
- 5.6 Block Statements (<http://www.adaic.com/standards/05rm/html/RM-5-6.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-5-6.html>))
- Annex P (informative) Syntax Summary (Annotated) (<http://www.adaic.com/standards/05rm/html/RM-P.html>) (<http://www.adaic.com/standards/05aarm/html/AA-P.html>))

16.1.4 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

17 Keywords: delay

17.1 Delay statements

17.1.1 Relative delays

```
delay Wait_Time;
```

This language feature will be made available in the forthcoming Ada 2005 standard.

The Ravenscar profile forbids the use of the relative delay statement:

```
pragma Restrictions (No_Relative_Delay)
```

17.1.2 Absolute delays

```
delay until Next_Time;
```

17.2 Select statements

17.2.1 Delay alternative

Selective accept:

```
select
  when Cond =>
    accept_statement
    statements
or
  delay_alternative
end select;
```

17.2.2 Timed entry call

```
select
  entry_call_alternative
or
  delay_alternative
end select;
```

17.2.3 Asynchronous transfer of control

```
select
  delay until Abort_Time;
  statements
then abort
  abortable_part
end select;
```

17.3 See also

17.3.1 Wikibook

- Ada Programming
- Ada Programming/Keywords
- Ada Programming/Tasking
- Ada Programming/Pragmas/Restrictions/No_Relative_Delay

17.3.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))
- 9.6 Delay Statements, Duration, and Time
(<http://www.adaic.com/standards/95lrm/html/RM-9-6.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-9-6.html>))
- 9.7 Select Statements (<http://www.adaic.com/standards/95lrm/html/RM-9-7.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-9-7.html>))
- 9.7.1 Selective Accept (<http://www.adaic.com/standards/95lrm/html/RM-9-7-1.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-9-7-1.html>))
- 9.7.2 Timed Entry Calls (<http://www.adaic.com/standards/95lrm/html/RM-9-7-2.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-9-7-2.html>))
- 9.7.4 Asynchronous Transfer of Control
(<http://www.adaic.com/standards/95lrm/html/RM-9-7-4.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-9-7-4.html>))

17.3.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)
- 6.1.7 Delay Statements (http://www.adaic.org/docs/95style/html/sec_6/6-1-7.html)

18 Keywords: delta

18.1 Description

This keyword is used in the declaration of fixed point types. Delta represents the absolute error bound of a fixed point type; that is, delta gives a hint to the compiler how to choose the smallest incremental value of the type, called the *Small* of the type. This Small value is accessible via the attribute T'Small.

For Ordinary fixed point types, it is by default a power of two not greater than the delta; it is specifiable by an attribute clause to be any value not greater than the delta.

For decimal fixed point types, the Small value is equal to the delta, which of course must be a power of ten.

18.2 Example

```

type Fixed_Point is delta 0.01 digits 10; -- A decimal fixed point type
My_Fixed_Point : Fixed_Point := 0.0;
...
My_Fixed_Point := 0.1; -- Ok
My_Fixed_Point := 0.02; -- Ok
My_Fixed_Point := 0.001; -- Oops - this value is too small.
                           -- It will be represented by zero.

```

18.3 See also

18.3.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

18.3.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))
(Annotated

18.3.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

19 Keywords: digits

This keyword is used in the declaration of floating point types and fixed point types.

19.1 See also

19.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

19.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))
(Annotated

19.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

20 Keywords: do

This keyword is used in accept statements.

20.1 See also

20.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

20.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary (Annotated) (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

20.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

21 Keywords: else

This keyword is used in:

- The 'if' statements
- The or else shortcut operator
- Conditional entry calls in tasks.

21.1 See also

21.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

21.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary (Annotated) (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

21.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

22 Keywords: elsif

This keyword is used in 'if' statements.

22.1 See also

22.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

22.1.2 Ada Reference Manual

- **2.9 Reserved Words** (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- **Annex P (informative) Syntax Summary**
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>)) (Annotated

22.1.3 Ada Quality and Style Guide

- **3.1.3 Capitalization** (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

23 Keywords: end

This keyword is used to mark the end of the following constructs:

- Control statements
- Subprogram bodies
- Records
- Package specifications and bodies
- Tasks, protected objects, accept statements and select statements
- Blocks

23.1 See also

23.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

23.1.2 Ada Reference Manual

- **2.9 Reserved Words** (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- **Annex P (informative) Syntax Summary**
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>)) (Annotated

23.1.3 Ada Quality and Style Guide

- **3.1.3 Capitalization** (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

24 Keywords: entry

This keyword is used to define a rendezvous in the context of tasking.

24.1 See also

24.1.1 Wikibook

- Ada Programming

- Ada Programming/Keywords

24.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

24.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

25 Keywords: exception

This keyword is used in exception declarations and exception handlers.

25.1 See also

25.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

25.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

25.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

26 Keywords: exit

This keyword is used to exit the current or named loop, conditionally or unconditionally.

26.1 See also

26.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

26.1.2 Ada Reference Manual

- **2.9 Reserved Words** (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- **Annex P** (informative) **Syntax** **Summary**
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>)) (Annotated)

26.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

27 Keywords: for

This keyword is used in:

- For loops
- Representation clauses
- Attribute definition clauses

27.1 See also

27.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

27.1.2 Ada Reference Manual

- **2.9 Reserved Words** (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- **Annex P** (informative) **Syntax** **Summary**
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>)) (Annotated)

27.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

28 Keywords: function

This keyword is used in:

- the specification and body of functions, a kind of subprograms.
- access to subprogram type declarations.

28.1 See also

28.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

28.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>)) (Annotated)

28.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

29 Keywords: generic

This keyword is used in generic units declarations.

29.1 See also

29.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

29.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>)) (Annotated)

29.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

30 Keywords: goto

This keyword "goto" is used in the goto statement.

For details see the chapter Ada Programming/Control - goto.

30.1 See also

30.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

30.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)

- (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- **5.1 Simple and Compound Statements - Sequences of Statements** (<http://www.adaic.com/standards/95lrm/html/RM-5-1.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-5-1.html>))
- **5.8 Goto Statements** (<http://www.adaic.com/standards/95lrm/html/RM-5-8.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-5-8.html>))
- **Annex P (informative) Syntax Summary** (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

30.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

31 Keywords: if

This keyword is used in 'if' statements.

31.1 See also

31.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

31.1.2 Ada Reference Manual

- **2.9 Reserved Words** (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- **Annex P (informative) Syntax Summary** (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

31.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

32 Keywords: in

This keyword is used in:

- The **in** and **in out** mode of subprograms parameters.
- The membership test.

32.1 See also

32.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

32.1.2 Ada 95 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- 4.4 Expressions (<http://www.adaic.com/standards/95lrm/html/RM-4-4.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-4-4.html>))
- 6.1 Subprogram Declarations (<http://www.adaic.com/standards/95lrm/html/RM-6-1.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-6-1.html>))
- Annex P (informative) Syntax Summary (Annotated (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

32.1.3 Ada 2005 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/05rm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-2-9.html>))
- 4.4 Expressions (<http://www.adaic.com/standards/05rm/html/RM-4-4.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-4-4.html>))
- 6.1 Subprogram Declarations (<http://www.adaic.com/standards/05rm/html/RM-6-1.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-6-1.html>))
- Annex P (informative) Syntax Summary (Annotated (<http://www.adaic.com/standards/05rm/html/RM-P.html>) (<http://www.adaic.com/standards/05aarm/html/AA-P.html>))

32.1.4 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

33 Keywords: interface

Used to declare an **interface**. Interfaces are the most important innovation in Ada 2005. The basic semantic has been taken from the interface concept of the Java programming language. Interface inheritance is a reduced form of multiple inheritance.

33.1 Interface types

There are various forms of interfaces available:

33.1.1 Normal interface

The normal interface is declare as:

```
type Printable is interface;
```

33.1.2 Limited interface

Can be used as interface to limited tagged type.

```
type Printable is limited interface;
```

33.1.3 Synchronized interface

```
type Printable is synchronized interface;
```

All synchronized interfaces are also limited.

33.1.4 Task interface

Can be used as an interface to a task type.

```
type Printable is task interface;
```

All task interfaces are also synchronized.

33.1.5 Protected interface

Can be used as an interface to a protected type.

```
type Printable is protected interface;
```

All protected interfaces are also synchronized.

33.2 See also

33.2.1 Wikibook

- Ada Programming
- Ada Programming/Keywords
- Ada Programming/Object Orientation
- Ada Programming/OO

33.2.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

33.2.2.1 Ada 2005

- 3.9.4 Interface Types (<http://www.adaic.com/standards/05rm/html/RM-3-9-4.html>)
(Annotated (<http://www.adaic.com/standards/05aarm/html/AA-3-9-4.html>))

33.2.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

34 Keywords: is

The keyword **is** separates the name of an entity from its definition.

34.1 In type declarations

```
type Day_Of_Month is new range 1 .. 31;
```

See Ada Programming/Types and Ada Programming/Subtypes.

34.2 In subtype declarations

```
subtype Day_Of_February is Day_Of_Month range 1 .. 29;
```

See Ada Programming/Subtypes.

34.3 In package declarations

```
package My_Package is
... -- declarations
end My_Package;
```

See Ada Programming/Packages.

34.4 In procedure and function declaration

```
procedure My_Procedure is
... -- declarations
begin
... -- sentences
end My_Procedure;
```

See Ada Programming/Subprograms.

34.5 In generic instantiations

```
package Day_Of_Month_IO is
  new Ada.Text_IO.Integer_IO (Num => Day_Of_Month);
```

See Ada Programming/Generics.

34.6 See also

34.6.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

34.6.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated)

(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

34.6.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

35 Keywords: limited

This keyword is used to define limited types.

35.1 See also

35.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

35.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

35.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

36 Keywords: loop

This keyword is used in loop statements.

36.1 See also

36.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

36.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

36.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

37 Keywords: mod

This keyword is used in the mod operator and in the declaration of modular types.

37.1 See also

37.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

37.1.2 Ada 95 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

37.1.3 Ada 2005 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/05rm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/05aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/05rm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/05aarm/html/AA-P.html>))

37.1.4 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

38 Keywords: new

38.1 Declaration

38.1.1 In type derivation

```
type Day_of_Month is new Integer range 1 .. 31;
```

See Declaring new Types.

38.1.2 In type extension

```
type Derived_Tagged_Type is new Parent_Tagged_Type with
  record
    New_Data : Data;
  end record;
```

See Ada Programming/Object Orientation.

38.1.3 In instantiation of generics

```
package Day_Of_Month_IO is
  new Ada.Text_IO.Integer_IO (Day_Of_Month);
```

See Generics.

38.2 Allocator

```
type Day_Of_Month_Access is access Day_Of_Month;
X : Day_Of_Month_Access := new Day_Of_Month'(5);
```

See Creating object in a storage pool.

38.3 See also

38.3.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

38.3.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary (Annotated) (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))
- 4.8 Allocators (<http://www.adaic.com/standards/95lrm/html/RM-4-8.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-4-8.html>))

38.3.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

39 Keywords: not

This keyword is used in:

- Logical negation operator
- Negative membership test: **not in**

39.1 See also

39.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

39.1.2 Ada 95 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- 4.4 Expressions (<http://www.adaic.com/standards/95lrm/html/RM-4-4.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-4-4.html>))
- 4.5.6 Highest Precedence Operators (Annotated (<http://www.adaic.com/standards/95lrm/html/RM-4-5-6.html>) (<http://www.adaic.com/standards/95aarm/html/AA-4-5-6.html>))
- Annex P (informative) Syntax Summary (Annotated (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

39.1.3 Ada 2005 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/05rm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-2-9.html>))
- 4.4 Expressions (<http://www.adaic.com/standards/05rm/html/RM-4-4.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-4-4.html>))
- 4.5.6 Highest Precedence Operators (Annotated (<http://www.adaic.com/standards/05rm/html/RM-4-5-6.html>) (<http://www.adaic.com/standards/05aarm/html/AA-4-5-6.html>))
- Annex P (informative) Syntax Summary (Annotated (<http://www.adaic.com/standards/05rm/html/RM-P.html>) (<http://www.adaic.com/standards/05aarm/html/AA-P.html>))

39.1.4 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

40 Keywords: null

This keyword is used for:

- Null access value
- Null record definition
- Null variant part in a record definition
- Null statement

40.1 See also

40.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

40.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary (Annotated (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

40.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

41 Keywords: of

This keyword is used in array types declarations.

41.1 See also

41.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

41.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

41.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

42 Keywords: or

42.1 Logical operator

42.1.1 Boolean operator

```
X : Boolean := A < 10 or A > 20;
```

42.1.2 Boolean shortcut operator

In the below example the function G is only called when F(X) returns the value *False*.

```
if F(X) or else G(Y) then  
    Walk_The_Dog;  
end if;
```

This shortcut operator is sometimes used to speed up the evaluation of boolean expressions, but the Ada Style Guide recommends to compare the performance of both forms before switching one to the other. In general, it is good idea to use **or else** in sake of performance only when the second expression involves a function call.

The **or else** form is also used when the second expression is known to raise an exception

unless the first expression is *False*.

Unlike C/C++, Ada short-cut operators are not the standard way to evaluate boolean expressions. This is because Ada is designed to do by default what is generally safer, but lets the programmer request a different behaviour.

42.1.3 Boolean operator on arrays

The `or` operator is applied to each pair of boolean elements from the left and right arrays. The result has the same bounds than the left operand.

```
-----
type Day_Of_Month is range 1 .. 31;
type Month_Array is array (Day_Of_Month) of Boolean;
X : Month_Array := Function_1;
Y : Month_Array := Function_2;
Z : Month_Array := X or Y;
-----
```

42.1.4 Bitwise operator

The operator `or` could be used with modular types to perform bitwise operations.

42.2 Select statement

42.2.1 alternative

See *Ada Programming/Tasking#Selective_waiting*.

42.2.2 delay

See *Ada Programming/Tasking#Timeout*.

42.3 See also

42.3.1 Wikibook

- Ada Programming
- Ada Programming/Keywords
- Ada Programming/Operators

42.3.2 Ada 95 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- 4.4 Expressions (<http://www.adaic.com/standards/95lrm/html/RM-4-4.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-4-4.html>))
- 4.5.1 Logical Operators and Short-circuit Control Forms (<http://www.adaic.com/standards/95lrm/html/RM-4-5-1.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-4-5-1.html>))
- Annex P (informative) Syntax Summary (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

42.3.3 Ada 2005 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)

- (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- 4.4 Expressions (<http://www.adaic.com/standards/95lrm/html/RM-4-4.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-4-4.html>))
- 4.5.1 Logical Operators and Short-circuit Control Forms (<http://www.adaic.com/standards/95lrm/html/RM-4-5-1.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-4-5-1.html>))
- Annex P (informative) Syntax Summary (Annotated (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

42.3.4 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)
- 5.5.5 Short Circuit Forms of the Logical Operators (http://www.adaic.org/docs/95style/html/sec_5/5-5-5.html)
- 10.5.2 Short-Circuit Operators (http://www.adaic.org/docs/95style/html/sec_10/10-5-2.html)
- 10.6.3 Bit Operations on Modular Types (http://www.adaic.org/docs/95style/html/sec_10/10-6-3.html)

43 Keywords: others

43.1 Summary

The keyword **others** is used to define the remaining options in a list of options:

- In exception handlers
- In case statements
- In variant records
- In array initialisations

43.2 See also

43.2.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

43.2.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary (Annotated (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

43.2.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

44 Keywords: out

This keyword is used in the **out** and **in out** mode of subprograms parameters.

44.1 See also

44.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

44.1.2 Ada 95 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- 6.1 Subprogram Declarations (<http://www.adaic.com/standards/95lrm/html/RM-6-1.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-6-1.html>))
- Annex P (informative) Syntax Summary (Annotated) (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

44.1.3 Ada 2005 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/05rm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-2-9.html>))
- 6.1 Subprogram Declarations (<http://www.adaic.com/standards/05rm/html/RM-6-1.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-6-1.html>))
- Annex P (informative) Syntax Summary (Annotated) (<http://www.adaic.com/standards/05rm/html/RM-P.html>) (<http://www.adaic.com/standards/05aarm/html/AA-P.html>))

44.1.4 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

45 Keywords: overriding

The keyword **overriding** can be used to explicitly declare a procedure or function as an overriding subprogram. There are two forms available:

```
overriding
procedure Overriding_Procedure (This: in Class_Type);
```

```
not overriding
procedure Not_Overriding_Procedure (This: in Class_Type);
```

The first declares the procedure as overriding the second does not.

45.1 See also

45.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

- Ada Programming/Object Orientation

45.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary (Annotated) (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))
- 6.1 Subprogram Declarations (<http://www.adaic.com/standards/05rm/html/RM-6-1.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-6-1.html>))
- 6.3 Subprogram Bodies (<http://www.adaic.com/standards/05rm/html/RM-6-3.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-6-3.html>))
- 8.5.4 Subprogram Renaming Declarations (Annotated) (<http://www.adaic.com/standards/05rm/html/RM-8-5-4.html>) (<http://www.adaic.com/standards/05aarm/html/AA-8-5-4.html>))
- 10.1.3 Subunits of Compilation Units (Annotated) (<http://www.adaic.com/standards/05rm/html/RM-10-1-3.html>) (<http://www.adaic.com/standards/05aarm/html/AA-10-1-3.html>))
- 12.3 Generic Instantiation (<http://www.adaic.com/standards/05rm/html/RM-12-3.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-12-3.html>))

45.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

46 Keywords: package

This keyword is used in regular packages (specification and body), in generic packages (specification and body), and in generic formal package parameters.

46.1 See also

46.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

46.1.2 Ada 95 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Section 7: Packages (<http://www.adaic.com/standards/95lrm/html/RM-7.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-7.html>))
- 7.1 Package Specifications and Declarations (Annotated) (<http://www.adaic.com/standards/95lrm/html/RM-7-1.html>) (<http://www.adaic.com/standards/95aarm/html/AA-7-1.html>))
- 7.2 Package Bodies (<http://www.adaic.com/standards/95lrm/html/RM-7-2.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-7-2.html>))
- 8.5.3 Package Renaming Declarations (Annotated) (<http://www.adaic.com/standards/95lrm/html/RM-8-5-3.html>) (<http://www.adaic.com/standards/95aarm/html/AA-8-5-3.html>))
- 10.1.3 Subunits of Compilation Units (Annotated) (<http://www.adaic.com/standards/95lrm/html/RM-10-1-3.html>)

- (<http://www.adaic.com/standards/95aarm/html/AA-10-1-3.html>))
- 12.1 Generic Declarations (<http://www.adaic.com/standards/95lrm/html/RM-12-1.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-12-1.html>))
- 12.3 Generic Instantiation (<http://www.adaic.com/standards/95lrm/html/RM-12-3.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-12-3.html>))
- 12.7 Formal Packages (<http://www.adaic.com/standards/95lrm/html/RM-12-7.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-12-7.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))
- Annex E.2-3 Remote Call Interface Library Units
(<http://www.adaic.com/standards/95aarm/html/RM-E-2-3.html>)
(<http://www.adaic.com/standards/95aarm/html/RM-E-2-3.html>))

46.1.3 Ada 2005 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/05rm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/05aarm/html/AA-2-9.html>))
- Section 7: Packages (<http://www.adaic.com/standards/05rm/html/RM-7.html>) (Annotated
(<http://www.adaic.com/standards/05aarm/html/html/AA-7.html>))
- 7.1 Package Specifications and Declarations
(<http://www.adaic.com/standards/05rm/html/RM-7-1.html>)
(<http://www.adaic.com/standards/05aarm/html/AA-7-1.html>))
- 7.2 Package Bodies (<http://www.adaic.com/standards/05rm/html/RM-7-2.html>) (Annotated
(<http://www.adaic.com/standards/05aarm/html/AA-7-2.html>))
- 8.5.3 Package Renaming Declarations
(<http://www.adaic.com/standards/05rm/html/RM-8-5-3.html>)
(<http://www.adaic.com/standards/05aarm/html/AA-8-5-3.html>))
- 10.1.3 Subunits of Compilation Units
(<http://www.adaic.com/standards/05rm/html/RM-10-1-3.html>)
(<http://www.adaic.com/standards/05aarm/html/AA-10-1-3.html>))
- 12.1 Generic Declarations (<http://www.adaic.com/standards/05rm/html/RM-12-1.html>)
(Annotated (<http://www.adaic.com/standards/05aarm/html/AA-12-1.html>))
- 12.3 Generic Instantiation (<http://www.adaic.com/standards/05rm/html/RM-12-3.html>)
(Annotated (<http://www.adaic.com/standards/05aarm/html/AA-12-3.html>))
- 12.7 Formal Packages (<http://www.adaic.com/standards/05rm/html/RM-12-7.html>)
(Annotated (<http://www.adaic.com/standards/05aarm/html/AA-12-7.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/05rm/html/RM-P.html>)
(<http://www.adaic.com/standards/05aarm/html/AA-P.html>))
- Annex E.2.3 Remote Call Interface Library Units
(<http://www.adaic.com/standards/05rm/html/RM-E-2-3.html>)
(<http://www.adaic.com/standards/05aarm/html/AA-E-2-3.html>))

46.1.4 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

47 Keywords: pragma

This keyword is used in pragma statements.

47.1 See also

47.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords
- Ada Programming/Pragmas

47.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>)) (Annotated)

47.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

48 Keywords: private

This keyword is used to declare:

- Private types
- The private part in a package specification
- Private child packages

48.1 See also

48.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

48.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>)) (Annotated)

48.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

49 Keywords: procedure

This keyword is used in:

- the specification and body of procedures, a kind of subprograms.
- access to subprogram type declarations.
- Procedures as parameters in generic units.

49.1 See also

49.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

49.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

49.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

50 Keywords: protected

This keyword is used in the definition of protected types.

50.1 See also

50.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

50.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

50.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

51 Keywords: raise

This keyword is used for raising a named exception or reraising the current exception in an exception handler.

51.1 See also

51.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

51.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary (Annotated) (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

51.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

52 Keywords: range

52.1 Description

The keyword **range** is used in the following type definitions.

- Defining the first and last element in an integer range.
- Defining the first and last element in a Modulus subtype.
- Defining the first and last element in an enumeration subtype.
- Defining the minimum range of a floating point type.
- Defining the minimum range of a fixed point type.
- Defining the range of an array type.

It is also used within the following statements:

- Specify the range of a for loop.

52.2 See also

52.2.1 Wikibook

- Ada Programming
- Ada Programming/Keywords
- Ada Programming/Types/range
- Ada Programming/Types/Enumeration
- Ada Programming/Types/digits
- Ada Programming/Types/delta
- Ada Programming/Types/array
- Ada Programming/Control

52.2.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary (Annotated) (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))
- 3.5 Scalar Types (<http://www.adaic.com/standards/95lrm/html/RM-3-5.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-3-5.html>))

- 3.6 Array Types (<http://www.adaic.com/standards/95lrm/html/RM-3-6.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-3-6.html>))
- 3.6.1 Index Constraints and Discrete Ranges (<http://www.adaic.com/standards/95lrm/html/RM-3-6-1.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-3-6-1.html>))
- 4.4 Expressions (<http://www.adaic.com/standards/95lrm/html/RM-4-4.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-4-4.html>))

52.2.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

53 Keywords: record

This keyword is used in record types declarations.

53.1 See also

53.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

53.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

53.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

54 Keywords: rem

54.1 Operator rem

The **rem** keyword is used as the remainder operator, that is, the remainder of the signed integer division. The following formula applies:

$$A = (A / B) * B + (A \text{ rem } B)$$

54.2 See also

54.2.1 Wikibook

- Ada Programming

- Ada Programming/Keywords

54.2.2 Ada 95 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrn/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrn/html/RM-P.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))
(Annotated)
- 4.5.5 Multiplying Operators
(<http://www.adaic.com/standards/95lrn/html/RM-4-5-5.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-4-5-5.html>))
(Annotated)

54.2.3 Ada 2005 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/05rm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/05aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/05rm/html/RM-P.html>)
(<http://www.adaic.com/standards/05aarm/html/AA-P.html>))
(Annotated)
- 4.5.5 Multiplying Operators (<http://www.adaic.com/standards/05rm/html/RM-4-5-5.html>)
(Annotated (<http://www.adaic.com/standards/05aarm/html/AA-4-5-5.html>))

54.2.4 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

55 Keywords: renames

This keyword is used in renaming declarations.

55.1 See also

55.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

55.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrn/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrn/html/RM-P.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))
(Annotated)

55.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

56 Keywords: requeue

This keyword is used for requeue statements.

56.1 See also

56.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

56.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrn/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrn/html/RM-P.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

56.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

57 Keywords: return

This keyword is used in:

- Functions specifications for declaring the returned type.
- In function bodies for returning a value to the caller.
- In procedure bodies for returning the control to the caller.

57.1 See also

57.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

57.1.2 Ada 95 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrn/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- 6.5 Return Statements (<http://www.adaic.com/standards/95lrn/html/RM-6-5.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-6-5.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrn/html/RM-P.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

57.1.3 Ada 2005 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/05rm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/05aarm/html/AA-2-9.html>))
- 6.5 Return Statements (<http://www.adaic.com/standards/05rm/html/RM-6-5.html>)
(Annotated (<http://www.adaic.com/standards/05aarm/html/AA-6-5.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/05rm/html/RM-P.html>)
(Annotated

(<http://www.adaic.com/standards/05aarm/html/AA-P.html>))

57.1.4 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

58 Keywords: reverse

This keyword is used in **for** loops to specify that the loop is performed in reverse order:

```
for I in reverse 1 .. 10 loop
  Ada.Integer_Text_IO.Put (I);
  Ada.Text_IO.New_Line;
end loop;
```

Outputs:

```
10
 9
 8
 7
 6
 5
 4
 3
 2
 1
```

58.1 See also

58.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

58.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

58.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

59 Keywords: select

This keyword is used in selective waiting in tasks.

59.1 See also

59.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

59.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>)) (Annotated)

59.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

60 Keywords: separate

This keyword is used to declare subunits.

60.1 See also

60.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

60.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>)) (Annotated)

60.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

61 Keywords: subtype

61.1 Summary

The keyword **subtype** is used to declare and name a new subtype. For more information on types and subtypes read Ada Programming/Subtypes.

61.2 See also

61.2.1 Wikibook

- Ada Programming
- Ada Programming/Keywords
- Ada Programming/Types
- Ada Programming/Subtypes

61.2.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

61.2.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

62 Keywords: synchronized

This language feature will be made available in the forthcoming Ada 2005 standard.

The **synchronized** keyword is used to declare that the interface has to be implemented by task types or protected types. The syntax is:

```
type Printable is synchronized interface;
```

62.1 See also

62.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

62.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

62.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

63 Keywords: tagged

This keyword is used in object-oriented type declarations (tagged types).

63.1 See also

63.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

63.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

63.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

64 Keywords: task

The keyword **task** is used to define either a task or task type. See Ada Programming/Tasking for more information on the Ada tasking system.

64.1 See also

64.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords
- Ada Programming/Tasking

64.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

64.1.2.1 Ada 95

- Section 9: Tasks and Synchronization
(<http://www.adaic.com/standards/95lrm/html/RM-9.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-9.html>))

64.1.2.2 Ada 2005

- 3.9.4 Interface Types (<http://www.adaic.com/standards/05rm/html/RM-3-9-4.html>)
(Annotated (<http://www.adaic.com/standards/05aarm/html/AA-3-9-4.html>))
- Section 9: Tasks and Synchronization
(<http://www.adaic.com/standards/05rm/html/RM-9.html>) (Annotated
(<http://www.adaic.com/standards/05aarm/html/html/AA-9.html>))

64.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

65 Keywords: terminate

This keyword is used in task termination.

65.1 See also

65.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

65.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

65.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

66 Keywords: then

This keyword is used in:

- 'if' statements
- 'and then' shortcut operator
- Asynchronous select

66.1 See also

66.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

66.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

66.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

67 Keywords: type

The keyword **type** is used to declare a new type and name the first subtype. For more information on types and subtypes read Ada Programming/Subtypes.

67.1 See also

67.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords
- Ada Programming/Types
- Ada Programming/Subtypes

67.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))
- 3.2 Types and Subtypes (<http://www.adaic.com/standards/95lrm/html/RM-3-2.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-3-2.html>))

67.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

68 Keywords: until

68.1 Delay until statement

The keyword **until** is used only in delay until statements.

68.2 See also

68.2.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

68.2.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated

(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

- 9.6 Delay Statements, Duration, and Time
(<http://www.adaic.com/standards/95lrm/html/RM-9-6.html>)
(<http://www.adaic.com/standards/95aarm/html/AA-9-6.html>)) (Annotated)

68.2.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)
- 6.1.7 Delay Statements (http://www.adaic.org/docs/95style/html/sec_6/6-1-7.html)

69 Keywords: use

69.1 Use clause

69.1.1 At library level

This use clause make the content of a package immediately visible.

```
with Ada.Text_IO;    use Ada.Text_IO;

procedure Hello is
begin
  Put_Line("Hello, world!");
  New_Line;
  Put_Line("I am an Ada program with package use.");
end Hello;
```

If readability is your main concern then you should avoid this type of use clause. However it is needed to resolve a name clash between the packages which are imported and the package currently compiled.

69.1.2 At declaration level

File: [hello_world_3.adb](http://svn.sourceforge.net/viewcvcs.cgi/wikibook-ada/trunk/demos/Source/hello_world_3.adb) (view
(http://svn.sourceforge.net/viewcvcs.cgi/wikibook-ada/trunk/demos/Source/hello_world_3.adb?view=mark
, plain text
(http://svn.sourceforge.net/viewcvcs.cgi/*checkout*/wikibook-ada/trunk/demos/Source/hello_world_3.adb)
, download page (https://sourceforge.net/project/showfiles.php?group_id=124904) , browse all
(<http://wikibook-ada.sourceforge.net/html/index.html>))

```
with Ada.Text_IO;

procedure Hello is
  use Ada.Text_IO;
begin
  Put_Line("Hello, world!");
  New_Line;
  Put_Line("I am an Ada program with package use.");
end Hello;
```

69.1.3 For types

```
with Ada.Text_IO;

procedure Hello is
  use type Ada.Text_IO.File_Type;
begin
  Ada.Text_IO.Put_Line("Hello, world!");
  Ada.Text_IO.New_Line;
  Ada.Text_IO.Put_Line("I am an Ada program with package use.");
end Hello;
```

69.2 Representation clause

69.2.1 For attributes

```
type Day_Of_Month is range 1 .. 31;
for Day_Of_Month'Size use 8;
```

69.2.2 For records

69.2.3 For enumerations

69.3 See also

69.3.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

69.3.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary (Annotated) (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))
- 8.3 Visibility (<http://www.adaic.com/standards/95lrm/html/RM-8-3.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-8-3.html>))
- 8.4 Use Clauses (<http://www.adaic.com/standards/95lrm/html/RM-8-4.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-8-4.html>))
- 13.3 Operational and Representation Attributes (Annotated) (<http://www.adaic.com/standards/95lrm/html/RM-13-3.html>) (<http://www.adaic.com/standards/95aarm/html/AA-13-3.html>))
- 13.4 Enumeration Representation Clauses (Annotated) (<http://www.adaic.com/standards/95lrm/html/RM-13-4.html>) (<http://www.adaic.com/standards/95aarm/html/AA-13-4.html>))
- 13.5.1 Record Representation Clauses (Annotated) (<http://www.adaic.com/standards/95lrm/html/RM-13-5-1.html>) (<http://www.adaic.com/standards/95aarm/html/AA-13-5-1.html>))

69.3.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

70 Keywords: when

This keyword is used in:

- case statements,
- variant record definitions,
- exception handlers
- loops exit conditions.

70.1 See also

70.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

70.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

70.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

71 Keywords: while

This keyword is used in the while loops.

71.1 See also

71.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

71.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>)
(Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary
(<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (Annotated
(<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

71.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

72 Keywords: with

This keyword is used in:

- With clauses
- Extension declarations in OOP
- Subprogram and package parameters in generics

72.1 See also

72.1.1 Wikibook

- Ada Programming
- Ada Programming/Keywords

72.1.2 Ada Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- Annex P (informative) Syntax Summary (Annotated) (<http://www.adaic.com/standards/95lrm/html/RM-P.html>) (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

72.1.3 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)

73 Keywords: xor

73.1 Logical operator

73.1.1 Boolean operator

```
X : Boolean := A = 10 xor B = 10;
```

73.1.2 Boolean operator on arrays

The xor operation is applied to each boolean inside the array.

```
type Day_Of_Month is range 1 .. 31;
type Month_Array is array (Day_Of_Month) of Boolean;

X : Month_Array := Function_1;
Y : Month_Array := Function_2;
Z : Month_Array := X xor Y;
```

73.1.3 Bitwise operator

The operator **xor** could be used with modular types and also with boolean arrays to perform bitwise operations.

73.2 See also

73.2.1 Wikibook

- Ada Programming
- Ada Programming/Keywords
- Ada Programming/Operators

73.2.2 Ada 95 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/95lrn/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-2-9.html>))
- 4.4 Expressions (<http://www.adaic.com/standards/95lrn/html/RM-4-4.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-4-4.html>))
- 4.5.1 Logical Operators and Short-circuit Control Forms (<http://www.adaic.com/standards/95lrn/html/RM-4-5-1.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-4-5-1.html>))
- Annex P (informative) Syntax Summary (<http://www.adaic.com/standards/95lrn/html/RM-P.html>) (Annotated (<http://www.adaic.com/standards/95aarm/html/AA-P.html>))

73.2.3 Ada 2005 Reference Manual

- 2.9 Reserved Words (<http://www.adaic.com/standards/05rm/html/RM-2-9.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-2-9.html>))
- 4.4 Expressions (<http://www.adaic.com/standards/05rm/html/RM-4-4.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-4-4.html>))
- 4.5.1 Logical Operators and Short-circuit Control Forms (<http://www.adaic.com/standards/05rm/html/RM-4-5-1.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-4-5-1.html>))
- Annex P (informative) Syntax Summary (<http://www.adaic.com/standards/05rm/html/RM-P.html>) (Annotated (<http://www.adaic.com/standards/05aarm/html/AA-P.html>))

73.2.4 Ada Quality and Style Guide

- 3.1.3 Capitalization (http://www.adaic.org/docs/95style/html/sec_3/3-1-3.html)
- 10.6.3 Bit Operations on Modular Types (http://www.adaic.org/docs/95style/html/sec_10/10-6-3.html)

Von „http://en.wikibooks.org/wiki/Ada_Programming/All_Keywords“

Kategorien: Books with print version | Ada Programming/Ada 2005 feature | Ada Programming | Ada programming language | Programming

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