

beginner

COLLABORATORS

	<i>TITLE :</i> beginner		
<i>ACTION</i>	<i>NAME</i>	<i>DATE</i>	<i>SIGNATURE</i>
WRITTEN BY		February 24, 2025	

REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

Contents

1	beginner	1
1.1	Main Index	1

Chapter 1

beginner

1.1 Main Index

Main Index

This index should be used to find detailed information about particular concepts. There is a separate index which deals with the keywords, variables, functions and constants which are part of Amiga E (see E Language Index).

A4 register	Things to watch out for
A5 register	Things to watch out for
Absolute value	Maths and logic functions
Absolute value (floating-point)	Floating-Point Functions
Abstract class	Inheritance in E
Abstract method	Inheritance in E
Access array outside bounds	Accessing array data
Accessing array data	Accessing array data
Accuracy of floating-point numbers	Accuracy and Range
Addition	Mathematics
Address	Addresses
Address	Memory addresses
Address, finding	Finding addresses (making pointers)
Algebra	Variables and Expressions
Alignment	SIZEOF expression
Allocating an object	Objects in E
Allocating memory	System support functions
Allocation, dynamic memory	Dynamic Allocation
Allocation, memory	Memory Allocation
Allocation, static memory	Static Allocation
Allocation, typed memory dynamically	NEW and END Operators
Allowable assignment left-hand sides	Assignments
Amiga E author	Amiga E Author
Amiga system module	Amiga System Modules
Amiga system objects	Amiga system objects
Analogy, pointers	Addresses
And	Maths and logic functions
AND, bit-wise	Bitwise AND and OR
AND-ing flags	Sets

Apostrophe	String Constants Special Character ↔
Sequences	
Append to a list	List functions
Append to an E-string	String functions
arg, using	Any AmigaDOS
Argument	Parameters
Argument parsing	Argument Parsing
Argument, default	Default Arguments
Array	Tables of data
Array and array pointer declaration	Array pointers
Array diagram	Array pointers
Array pointer, decrementing	Point to other elements
Array pointer, incrementing	Point to other elements
Array pointer, next element	Point to other elements
Array pointer, previous element	Point to other elements
Array size	Tables of data
Array, access outside bounds	Accessing array data
Array, accessing data	Accessing array data
Array, first element short-hand	Accessing array data
Array, initialised	Typed lists
Array, pointer	Array pointers
Array, procedure parameter	Array procedure parameters
ASCII character constant	Numeric Constants
Assembly and E constants	Assembly and the E language
Assembly and E variables	Assembly and the E language
Assembly and labels	Assembly and the E language
Assembly and procedures	Assembly and the E language
Assembly and static memory	Static memory
Assembly statements	Assembly Statements
Assembly, calling system functions	Assembly and the E language
Assembly, potential problems	Things to watch out for
Assignment expression	Assignments
Assignment versus copying	String functions
Assignment, :=	Assignment
Assignment, allowable left-hand sides	Assignments
Assignment, Emodules:	Using Modules
Assignment, multiple	Multiple Return Values
Automatic exceptions	Automatic Exceptions
Automatic exceptions and initialisation	Raise within an Exception Handler
Automatic voiding	Turning an Expression into a Statement
Background pen, setting colour	Graphics functions
Backslash	String Constants Special Character ↔
Sequences	
Base case	Factorial Example
Base class	Inheritance
Beginner's Guide author	Guide Author
Binary constant	Numeric Constants
Binary tree	Binary Trees
Bit shift left	Maths and logic functions
Bit shift right	Maths and logic functions
Bit-wise AND and OR	Bitwise AND and OR
Black box	Classes and methods
Block, conditional	Conditional Block
Block, IF	IF block
Block, SELECT	SELECT block
Block, SELECT..OF	SELECT..OF block
Books, further reading	Further Reading

Bounding a value	Maths and logic functions
Box drawing	Graphics functions
Box, black	Classes and methods
Bracketing expressions	Precedence and grouping
Branch	Binary Trees
Breaking a string over several lines	Statements
Breaking statements over several lines	Statements
Bug, finding	Common Problems
Built-in constants	Built-In Constants
Built-in functions	Built-In Functions
Built-in functions, floating-point	Floating-Point Functions
Built-in functions, linked list	Linked Lists
Built-in functions, list and E-list	List functions
Built-in functions, string and E-string	String functions
Built-in variables	Built-In Variables
BUT expression	BUT expression
Button click, left	Intuition support functions
Button click, left (wait)	Intuition support functions
Buttons state	Intuition support functions
Calculating with floating-point numbers	Floating-Point Calculations
Calling a method	Methods in E
Calling a procedure	Procedure Execution
Calling a procedure	Procedures
Calling system functions from Assembly	Assembly and the E language
Carriage return	String Constants Special Character ↔
Sequences	
Case of characters in identifiers	Identifiers
Case, base	Factorial Example
Case, recursive	Factorial Example
Ceiling of a floating-point value	Floating-Point Functions
Changing stdin	Input and output functions
Changing stdout	Input and output functions
Changing stdrast	Graphics functions
Changing the value of a variable	Assignment
Character constant	Numeric Constants
Character, apostrophe	String Constants Special Character ↔
Sequences	
Character, backslash	String Constants Special Character ↔
Sequences	
Character, carriage return	String Constants Special Character ↔
Sequences	
Character, double quote	String Constants Special Character ↔
Sequences	
Character, escape	String Constants Special Character ↔
Sequences	
Character, linefeed	String Constants Special Character ↔
Sequences	
Character, null	String Constants Special Character ↔
Sequences	
Character, printing	Input and output functions
Character, read from a file	Input and output functions
Character, tab	String Constants Special Character ↔
Sequences	
Character, write to file	Input and output functions
Choice, conditional block	Conditional Block
Class (OOP)	Classes and methods
Class hierarchy	Inheritance in E

Class, abstract	Inheritance in E
Class, base	Inheritance
Class, derived	Inheritance
Class, super	Inheritance in E
Classes and modules	Data-Hiding in E
Clean-up, program termination	System support functions
Close screen	Intuition support functions
Close window	Intuition support functions
Code fragment	Conditional Block
Code modules	Code Modules
code part of Intuition message	Intuition support functions
Code, reuse	Style Reuse and Readability
Code, style	Style Reuse and Readability
Colour, setting	Graphics functions
Colour, setting foreground and background pen	Graphics functions
Command line argument parsing	Argument Parsing
Comment, nested	Comments
Comments	Comments
Common logarithm	Floating-Point Functions
Common problems	Common Problems
Common use of pointers	Extracting data (dereferencing pointers)
Comparison of lists	List functions
Comparison of strings	String functions
Comparison operators	Logic and comparison
Compiler, ec	Compilation
Complex memory, deallocate	System support functions
Complex memory, free	System support functions
Complex types	Complex types
Conditional block	Conditional Block
Constant	Constants
Constant string	Normal strings and E-strings
Constant, binary	Numeric Constants
Constant, built-in	Built-In Constants
Constant, character	Numeric Constants
Constant, decimal	Numeric Constants
Constant, enumeration	Enumerations
Constant, hexadecimal	Numeric Constants
Constant, named	Named Constants
Constant, numeric	Numeric Constants
Constant, set	Sets
Constant, use in Assembly	Assembly and the E language
Constructor	Classes and methods
Constructor, names	Methods in E
Control-C testing	System support functions
Controlling program flow	Program Flow Control
Conversion of floating-point numbers	Floating-Point Calculations
Convert an expression to a statement	Turning an Expression into a Statement
Convert header file to module	Non-Standard Modules
Convert include file to module	Non-Standard Modules
Convert pragma file to module	Non-Standard Modules
Converting floating-point numbers from a string	Floating-Point Functions
Converting strings to numbers	String functions
Copy middle part of a string	String functions
Copy right-hand part of an E-string	String functions
Copying a list	List functions
Copying a string	String functions
Copying versus assignment	String functions

Cosine function	Floating-Point Functions
Crash, avoiding stack problems	Stack (and Crashing)
Crash, running out of stack	Stack (and Crashing)
Create gadget	Intuition support functions
Cure for linefeed problem	Strings
Data, extracting from a pointer	Extracting data (dereferencing pointers)
Data, input	The Simple Program
Data, manipulation	The Simple Program
Data, named	Variables and Expressions
Data, output	The Simple Program
Data, static	Static data
Data, storage	Variable types
Data-abstraction	Classes and methods
Data-hiding	Classes and methods
Deallocating an object	Objects in E
Deallocating complex memory	System support functions
Deallocating memory	System support functions
Deallocation of memory	Deallocation of Memory
Deallocation, potential problems	Deallocation of Memory
Decimal constant	Numeric Constants
Decimal number, printing	Input and output functions
Decision, conditional block	Conditional Block
Declaration, array and array pointer	Array pointers
Declaration, illegal	Indirect types
Declaration, initialised	Initialised Declarations
Declaration, variable type	Default type
Declaring a variable	Variable declaration
Decrementing a variable	INC and DEC statements
Decrementing array pointer	Point to other elements
Default arguments	Default Arguments
Default type	Default type
Definition of a procedure with parameters	Global and local variables
Dereferencing a pointer	Extracting data (dereferencing pointers)
Derivation (OOP)	Inheritance
Derived class	Inheritance
Descoping a global variable	Global and local variables
Destructor	Classes and methods
Destructor, end	Methods in E
Direct type	Indirect types
Division	Mathematics
Division, 32-bit	Maths and logic functions
Double quote	String Constants Special Character ↔
Sequences	
Doubly linked list	Linked Lists
Dragon curve	Recursion Example
Drawing, box	Graphics functions
Drawing, line	Graphics functions
Drawing, text	Graphics functions
Dynamic (typed) memory allocation	NEW and END Operators
Dynamic E-list allocation	List functions
Dynamic E-string allocation	String functions
Dynamic memory allocation	Dynamic Allocation
Dynamic type	Inheritance in E
E author	Amiga E Author
E-list	Lists and E-lists
E-list functions	List functions
E-list, append	List functions

E-list, comparison	List functions
E-list, copying	List functions
E-list, dynamic allocation	List functions
E-list, length	List functions
E-list, maximum length	List functions
E-list, setting the length	List functions
E-string	Normal strings and E-strings
E-string functions	String functions
E-string handling example	String Handling and I-O
E-string, append	String functions
E-string, comparison	String functions
E-string, copying	String functions
E-string, dynamic allocation	String functions
E-string, format text to	Input and output functions
E-string, length	String functions
E-string, lowercase	String functions
E-string, maximum length	String functions
E-string, middle copy	String functions
E-string, reading from a file	Input and output functions
E-string, right-hand copy	String functions
E-string, set length	String functions
E-string, trim leading whitespace	String functions
E-string, uppercase	String functions
Early termination of a function	Functions
ec compiler	Compilation
Element selection	Element selection and element types
Element types	Element selection and element types
Elements of a linked list	Linked Lists
Elements of an array	Accessing array data
Elements of an object	OBJECT Type
Emodules: assignment	Using Modules
end destructor	Methods in E
End of file	Input and output functions
Enumeration	Enumerations
EOF	Input and output functions
Error handling	Exception Handling
Escape character	String Constants Special Character ↵
Sequences	
Evaluation of quoted expressions	Evaluation
Even number	Maths and logic functions
Example module use	Example Module Use
Examples, altering	Tinkering with the example
Examples, tinkering	Tinkering with the example
Exception	Exception Handling
Exception handler in a procedure	Procedures with Exception Handlers
Exception handling	Exception Handling
Exception, automatic	Automatic Exceptions
Exception, raising	Raising an Exception
Exception, raising from a handler	Raise within an Exception Handler
Exception, recursive handling	Stack and Exceptions
Exception, throwing	Raising an Exception
Exception, use of stack	Stack and Exceptions
Exception, zero	Raising an Exception
Exceptions and initialisation	Raise within an Exception Handler
Exclusive or	Maths and logic functions
Executing a procedure	Procedure Execution
Execution	Execution

Execution, jumping to a label	Labelling and the JUMP statement
Exists a list element	Lists and quoted expressions
EXIT statement	EXIT statement
Exiting a loop	EXIT statement
Exponentiation	Floating-Point Functions
Expression	Expressions
Expression	Variables and Expressions
Expression in parentheses	Precedence and grouping
Expression, assignment	Assignments
Expression, bad grouping	Precedence and grouping
Expression, bracketing	Precedence and grouping
Expression, BUT	BUT expression
Expression, conversion to a statement	Turning an Expression into a Statement
Expression, grouping	Precedence and grouping
Expression, IF	IF expression
Expression, quotable	Quotable expressions
Expression, quoted	Quoted Expressions
Expression, sequence	BUT expression
Expression, side-effects	Side-effects
Expression, timing example	Timing Expressions
Expression, voiding	Turning an Expression into a Statement
Extracting data from a pointer	Extracting data (dereferencing pointers)
Extracting floating-point numbers from a string	Floating-Point Functions
Extracting numbers from a string	String functions
Factorial function	Factorial Example
Field formatting	Input and output functions
Field size	Input and output functions
Field, left-justify	Input and output functions
Field, right-justify	Input and output functions
Field, zero fill	Input and output functions
File length	Input and output functions
Filtering a list	Lists and quoted expressions
Find sub-string in a string	String functions
Finding addresses	Finding addresses (making pointers)
Finding bugs	Common Problems
First element of an array	Accessing array data
Flag, AND-ing	Sets
Flag, IDCMP	Intuition support functions
Flag, mouse button	Intuition support functions
Flag, OR-ing	Sets
Flag, screen resolution	Intuition support functions
Flag, set constant	Sets
Flag, window	Intuition support functions
Floating-point conversion operator	Floating-Point Calculations
Floating-point functions	Floating-Point Functions
Floating-point number	Floating-Point Numbers
Floating-point number, extracting from a string	Floating-Point Functions
Floor of a floating-point value	Floating-Point Functions
Flow control	Program Flow Control
Following elements in a linked list	Linked Lists
Font, setting Topaz	Graphics functions
For all list elements	Lists and quoted expressions
FOR loop	FOR loop
Foreground pen, setting colour	Graphics functions
Format rules	Format and Layout
Format text to an E-string	Input and output functions
Forward through a linked list	Linked Lists

Fragment, code	Conditional Block
Free stack space	System support functions
Freeing complex memory	System support functions
Freeing memory	System support functions
Function	Procedures and Functions
Function, built-in	Built-In Functions
Function, early termination	Functions
Function, factorial	Factorial Example
Function, graphics	Graphics functions
Function, input	Input and output functions
Function, Intuition support	Intuition support functions
Function, logic	Maths and logic functions
Function, maths	Maths and logic functions
Function, one-line	One-Line Functions
Function, output	Input and output functions
Function, recursive	Recursion
Function, return value	Functions
Function, system support	System support functions
Functions, floating-point	Floating-Point Functions
Functions, linked list	Linked Lists
Functions, list and E-list	List functions
Functions, string and E-string	String functions
Further reading	Further Reading
Gadget and IDCMP example	IDCMP Messages
Gadget, create	Intuition support functions
Gadgets example	Gadgets
General loop	LOOP block
Global variable	Global and local variables
Global variable, descoping	Global and local variables
Graphics example	Graphics
Graphics functions	Graphics functions
Grouping expressions	Precedence and grouping
Grouping, bad	Precedence and grouping
Guide author	Guide Author
Handler in a procedure	Procedures with Exception Handlers
Handler raising an exception	Raise within an Exception Handler
Handler, recursive	Stack and Exceptions
Handling exceptions	Exception Handling
Head of a linked list	Linked Lists
Header file, convert to module	Non-Standard Modules
Hexadecimal constant	Numeric Constants
Hexadecimal number, printing	Input and output functions
Hierarchy, class	Inheritance in E
Horizontal FOR loop	FOR loop
Horizontal function definition	One-Line Functions
Horizontal IF block	IF block
Horizontal WHILE loop	WHILE loop
I/O example	String Handling and I-O
I/O example, with handler	String Handling and I-O
iaddr part of Intuition message	Intuition support functions
IDCMP and gadget example	IDCMP Messages
IDCMP flags	Intuition support functions
IDCMP message, code part	Intuition support functions
IDCMP message, iaddr part	Intuition support functions
IDCMP message, qual part	Intuition support functions
IDCMP message, waiting for	Intuition support functions
Identifier	Identifiers

Identifier, case of characters	Identifiers
IF block	IF block
IF block, nested	IF block
IF block, overlapping conditions	IF block
IF expression	IF expression
Illegal declaration	Indirect types
Include file, convert to module	Non-Standard Modules
Incrementing a variable	INC and DEC statements
Incrementing array pointer	Point to other elements
Indentation	Spacing and Separators
Indirect type	Indirect types
Inheritance (OOP)	Inheritance
Inheritance, OBJECT..OF	Inheritance in E
Initialisation	Global and local variables
Initialisation and automatic exceptions	Raise within an Exception Handler
Initialisation, general	Initialised Declarations
Initialised array	Typed lists
Initialised declaration	Initialised Declarations
Inlining procedures	Style Reuse and Readability
Input a character	Input and output functions
Input a string	Input and output functions
Input functions	Input and output functions
Input/output example	String Handling and I-O
Input/output example, with handler	String Handling and I-O
Interface	Classes and methods
Intuition message flags	Intuition support functions
Intuition message, code part	Intuition support functions
Intuition message, iaddr part	Intuition support functions
Intuition message, qual part	Intuition support functions
Intuition message, waiting for	Intuition support functions
Intuition support functions	Intuition support functions
Iteration	Loops
Jumping out of a loop	Labelling and the JUMP statement
Jumping to a label	Labelling and the JUMP statement
Kickstart version	System support functions
Label	Labelling and the JUMP statement
Label, use in Assembly	Assembly and the E language
Languages	Introduction to Amiga E
Layout rules	Format and Layout
Leaf	Binary Trees
Left mouse button click	Intuition support functions
Left mouse button click (wait)	Intuition support functions
Left shift	Maths and logic functions
Left-hand side of an assignment, allowable	Assignments
Left-justify field	Input and output functions
Length (maximum) of an E-list	List functions
Length (maximum) of an E-string	String functions
Length of a file	Input and output functions
Length of a list	List functions
Length of a string	String functions
Length of an E-list, setting	List functions
Length of an E-string	String functions
Length of an E-string, setting	String functions
Line drawing	Graphics functions
Linefeed	String Constants Special Character ↔
Sequences	
Linefeed problem	Execution

Linefeed problem, cure	Strings
Linefeed, \n	Strings
Linked list	Linked Lists
Linked list, doubly	Linked Lists
Linked list, elements	Linked Lists
Linked list, following elements	Linked Lists
Linked list, functions	Linked Lists
Linked list, head	Linked Lists
Linked list, linking	Linked Lists
Linked list, next element	Linked Lists
Linked list, singly	Linked Lists
Linking a linked list	Linked Lists
List	Lists and E-lists
List functions	List functions
List, append	List functions
List, comparison	List functions
List, copying	List functions
List, filtering	Lists and quoted expressions
List, for all elements	Lists and quoted expressions
List, length	List functions
List, linked	Linked Lists
List, mapping a quoted expression	Lists and quoted expressions
List, normal	Lists and E-lists
List, selecting an element	List functions
List, tag	Lists and E-lists
List, there exists an element	Lists and quoted expressions
List, typed	Typed lists
Lists and quoted expressions	Lists and quoted expressions
Local variable	Global and local variables
Local variable, initialisation	Global and local variables
Local variable, same names	Global and local variables
Local variable, self	Methods in E
Local variables in a quoted expression	Quotable expressions
Locate sub-string in a string	String functions
Location, memory	Memory addresses
Location, memory	Addresses
Logarithm, common	Floating-Point Functions
Logarithm, natural	Floating-Point Functions
Logic	Logic and comparison
Logic functions	Maths and logic functions
Logic operators	Logic and comparison
Logic, and	Maths and logic functions
Logic, exclusive or	Maths and logic functions
Logic, not	Maths and logic functions
Logic, or	Maths and logic functions
LONG type	LONG Type
LONG type, definition	Indirect types
Loop	Loops
LOOP block	LOOP block
Loop check, REPEAT..UNTIL	REPEAT..UNTIL loop
Loop check, WHILE	WHILE loop
Loop termination	WHILE loop
Loop, EXIT	EXIT statement
Loop, exiting	EXIT statement
Loop, FOR	FOR loop
Loop, general	LOOP block
Loop, LOOP	LOOP block

Loop, REPEAT..UNTIL	REPEAT..UNTIL loop
Loop, terminate by jumping to a label	Labelling and the JUMP statement
Loop, WHILE	WHILE loop
Lowercase a string	String functions
main procedure	Procedures
Making pointers	Finding addresses (making pointers)
Manipulation, safe	LIST and STRING Types
Mapping a quoted expression over a list	Lists and quoted expressions
Matching patterns	Unification
Mathematical operators	Mathematics
Maths functions	Maths and logic functions
Maximum	Maths and logic functions
Maximum length of an E-list	List functions
Maximum length of an E-string	String functions
Memory address	Memory addresses
Memory address	Addresses
Memory, allocating	System support functions
Memory, allocation	Memory Allocation
Memory, deallocate	System support functions
Memory, deallocate complex	System support functions
Memory, deallocation	Deallocation of Memory
Memory, dynamic (typed) allocation	NEW and END Operators
Memory, dynamic allocation	Dynamic Allocation
Memory, free	System support functions
Memory, free complex	System support functions
Memory, reading	Maths and logic functions
Memory, sharing	Assignment and Copying
Memory, static allocation	Static Allocation
Memory, writing	Maths and logic functions
Method (OOP)	Classes and methods
Method, abstract	Inheritance in E
Method, calling	Methods in E
Method, constructor	Classes and methods
Method, destructor	Classes and methods
Method, end	Methods in E
Method, overriding	Inheritance in E
Method, PROC..OF	Methods in E
Method, self local variable	Methods in E
Middle copy of a string	String functions
Minimum	Maths and logic functions
Mnemonics, Assembly	Assembly Statements
Module	Modules
Module, Amiga system	Amiga System Modules
Module, code	Code Modules
Module, convert from include, header or pragma file	Non-Standard Modules
Module, example use	Example Module Use
Module, non-standard	Non-Standard Modules
Module, using	Using Modules
Module, view contents	Using Modules
Modules and classes	Data-Hiding in E
Modulus	Maths and logic functions
Mouse button flags	Intuition support functions
Mouse buttons state	Intuition support functions
Mouse click, left button	Intuition support functions
Mouse click, left button (wait)	Intuition support functions
Mouse x-coordinate	Intuition support functions
Mouse y-coordinate	Intuition support functions

Multiple return values	Multiple Return Values
Multiple-assignment	Multiple Return Values
Multiplication	Mathematics
Multiplication, 32-bit	Maths and logic functions
Mutual recursion	Mutual Recursion
Named constant	Named Constants
Named data	Variables and Expressions
Named elements	OBJECT Type
Names of constructors	Methods in E
Names of local variables	Global and local variables
Natural logarithm	Floating-Point Functions
Nested comment	Comments
Nested IF blocks	IF block
Next element of a linked list	Linked Lists
Node	Binary Trees
Non-standard module	Non-Standard Modules
Normal list	Lists and E-lists
Normal list, selecting an element	List functions
Normal string	Normal strings and E-strings
Not	Maths and logic functions
Null character	String Constants Special Character ↔
Sequences	
Number, even	Maths and logic functions
Number, extracting from a string	String functions
Number, floating-point	Floating-Point Numbers
Number, odd	Maths and logic functions
Number, printing	Input and output functions
Number, printing (simple)	Changing the example
Number, quick random	Maths and logic functions
Number, random	Maths and logic functions
Number, real	Floating-Point Numbers
Number, signed or unsigned	Signed and Unsigned Values
Numbered elements of an array	Accessing array data
Numeric constant	Numeric Constants
Object	OBJECT Type
Object (OOP)	Classes and methods
Object element types	Element selection and element types
Object elements, private	Data-Hiding in E
Object elements, public	Data-Hiding in E
Object pointer	Element selection and element types
Object selection, use of ++ and -	Element selection and element types
Object, allocation	Objects in E
Object, Amiga system	Amiga system objects
Object, deallocation	Objects in E
Object, element selection	Element selection and element types
Object, named elements	OBJECT Type
Object, size	SIZEOF expression
OBJECT..OF, inheritance	Inheritance in E
Odd number	Maths and logic functions
One-line function	One-Line Functions
OOP, class	Classes and methods
OOP, derivation	Inheritance
OOP, inheritance	Inheritance
OOP, method	Classes and methods
OOP, object	Classes and methods
Open screen	Intuition support functions
Open window	Intuition support functions

Operator precedence	Precedence and grouping
Operator, SUPER	Inheritance in E
Operators, comparison	Logic and comparison
Operators, logic	Logic and comparison
Operators, mathematical	Mathematics
Option, set constant	Sets
Optional return values	Multiple Return Values
Or	Maths and logic functions
OR, bit-wise	Bitwise AND and OR
Or, exclusive	Maths and logic functions
OR-ing flags	Sets
Output a character	Input and output functions
Output functions	Input and output functions
Output text	Input and output functions
Output window	Built-In Variables
Overlapping conditions	IF block
Overriding methods	Inheritance in E
Pad byte	SIZEOF expression
Parameter	Parameters
Parameter variable	Global and local variables
Parameter, default	Default Arguments
Parameter, procedure local variables	Global and local variables
Parentheses and expressions	Precedence and grouping
Parsing command line arguments	Argument Parsing
Pattern matching	Unification
Peeking memory	Maths and logic functions
Pen colour, setting	Graphics functions
Pen, setting foreground and background colour	Graphics functions
Place-holder, decimal \d	Changing the example
Place-holder, field formatting	Input and output functions
Place-holder, field size	Input and output functions
Place-holders	Input and output functions
Plot a point	Graphics functions
Point, plot	Graphics functions
Pointer	PTR Type
Pointer (array) and array declaration	Array pointers
Pointer analogy	Addresses
Pointer diagram	Addresses
Pointer type	PTR Type
Pointer, array	Array pointers
Pointer, common use	Extracting data (dereferencing pointers)
Pointer, dereference	Extracting data (dereferencing pointers)
Pointer, making	Finding addresses (making pointers)
Pointer, object	Element selection and element types
Pointer, sharing memory	Assignment and Copying
Poking memory	Maths and logic functions
Polymorphism	Inheritance in E
Potential problems using Assembly	Things to watch out for
Pragma file, convert to module	Non-Standard Modules
Precedence, operators	Precedence and grouping
Printing characters	Input and output functions
Printing decimal numbers	Input and output functions
Printing hexadecimal numbers	Input and output functions
Printing numbers	Changing the example
Printing strings	Input and output functions
Printing text	Input and output functions
Printing to an E-string	Input and output functions

Private, object elements	Data-Hiding in E
Problems, common	Common Problems
PROC..OF, method	Methods in E
Procedure	Procedures
Procedure argument	Parameters
Procedure parameter	Parameters
Procedure parameter local variables	Global and local variables
Procedure parameter types	Procedure parameters
Procedure parameter variable	Global and local variables
Procedure parameter, array	Array procedure parameters
Procedure parameter, default	Default Arguments
Procedure with parameters, definition	Global and local variables
Procedure, calling	Procedures
Procedure, calling	Procedure Execution
Procedure, definition	Procedure Definition
Procedure, early termination	Functions
Procedure, exception handler	Procedures with Exception Handlers
Procedure, execution	Procedure Execution
Procedure, inlining	Style Reuse and Readability
Procedure, recent	Raising an Exception
Procedure, return value	Functions
Procedure, reuse	Style Reuse and Readability
Procedure, running	Procedure Execution
Procedure, running	Procedures
Procedure, style	Style Reuse and Readability
Procedure, use in Assembly	Assembly and the E language
Program flow control	Program Flow Control
Program termination	System support functions
Program, finish	Procedures
Program, running	Execution
Program, start	Procedures
Pseudo-random number	Maths and logic functions
Public, object elements	Data-Hiding in E
qual part of Intuition message	Intuition support functions
Quick random number	Maths and logic functions
Quotable expressions	Quotable expressions
Quoted expression	Quoted Expressions
Quoted expression, evaluation	Evaluation
Quoted expression, for all list elements	Lists and quoted expressions
Quoted expression, local variables	Quotable expressions
Quoted expression, mapping over a list	Lists and quoted expressions
Quoted expression, there exists a list element	Lists and quoted expressions
Quoted expressions and lists	Lists and quoted expressions
Raising an exception	Raising an Exception
Raising an exception from a handler	Raise within an Exception Handler
Raising to a power	Floating-Point Functions
Random number	Maths and logic functions
Random number, quick	Maths and logic functions
Range of floating-point numbers	Accuracy and Range
ReadArgs, using	AmigaDOS 2.0 (and above)
Reading a character from a file	Input and output functions
Reading a string from a file	Input and output functions
Reading from memory	Maths and logic functions
Reading, further	Further Reading
Real number	Floating-Point Numbers
Recent procedure	Raising an Exception
Recursion	Recursion

Recursion example	Recursion Example
Recursion, mutual	Mutual Recursion
Recursive case	Factorial Example
Recursive exception handling	Stack and Exceptions
Recursive function	Recursion
Recursive type	Recursion
Registers, A4 and A5	Things to watch out for
Regular return value	Multiple Return Values
Remainder	Maths and logic functions
REPEAT..UNTIL loop	REPEAT..UNTIL loop
REPEAT..UNTIL loop check	REPEAT..UNTIL loop
REPEAT..UNTIL loop version of a FOR loop	REPEAT..UNTIL loop
Repeated execution	Loops
Resolution flags	Intuition support functions
Return value of a function	Functions
Return value, optional	Multiple Return Values
Return value, regular	Multiple Return Values
Return values, multiple	Multiple Return Values
Reusing code	Style Reuse and Readability
Reusing procedures	Style Reuse and Readability
Revision, Kickstart	System support functions
Rewriting a FOR loop as a REPEAT..UNTIL loop	REPEAT..UNTIL loop
Rewriting a FOR loop as a WHILE loop	WHILE loop
Rewriting SELECT block as IF block	SELECT block
Rewriting SELECT..OF block as IF block	SELECT..OF block
Right shift	Maths and logic functions
Right-hand copy of an E-string	String functions
Right-justify field	Input and output functions
Root	Binary Trees
Rounding a floating-point value	Floating-Point Functions
Rules, format and layout	Format and Layout
Running a method	Methods in E
Running a procedure	Procedures
Running a program	Execution
Safe manipulation	LIST and STRING Types
Same names of local variables	Global and local variables
Screen example, with handler	Screens
Screen example, without handler	Screens
Screen resolution flags	Intuition support functions
Screen, close	Intuition support functions
Screen, open	Intuition support functions
Seed of a random sequence	Maths and logic functions
SELECT block	SELECT block
SELECT block, rewriting as IF block	SELECT block
SELECT..OF block	SELECT..OF block
SELECT..OF block, rewriting as IF block	SELECT..OF block
SELECT..OF block, speed versus size	SELECT..OF block
Selecting an element of a normal list	List functions
Selecting an element of an object	Element selection and element types
Selection, use of ++ and -	Element selection and element types
self, method local variable	Methods in E
Separators	Spacing and Separators
Sequencing expressions	BUT expression
Sequential composition	Statements
Set	Sets
Set length of an E-string	String functions
Setting foreground and background pen colours	Graphics functions

Setting pen colours	Graphics functions
Setting stdin	Input and output functions
Setting stdout	Input and output functions
Setting stdrast	Graphics functions
Setting the length of an E-list	List functions
Setting Topaz font	Graphics functions
Sharing memory	Assignment and Copying
Shift left	Maths and logic functions
Shift right	Maths and logic functions
Short-hand for first element of an array	Accessing array data
Show module contents	Using Modules
Side-effects	Side-effects
Sign of a number	Maths and logic functions
Signed and unsigned values	Signed and Unsigned Values
Sine function	Floating-Point Functions
Singly linked list	Linked Lists
Size of an array	Tables of data
Size of an object	SIZEOF expression
Size versus speed, SELECT..OF block	SELECT..OF block
Spacing	Spacing and Separators
Special character sequences	String Constants Special Character ←
Sequences	
Speed versus size, SELECT..OF block	SELECT..OF block
Splitting a string over several lines	Statements
Splitting statements over several lines	Statements
Square root	Floating-Point Functions
Stack and crashing	Stack (and Crashing)
Stack and exceptions	Stack and Exceptions
Stack space, free	System support functions
Stack, avoiding crashes	Stack (and Crashing)
State of mouse buttons	Intuition support functions
Statement	Statements
Statement, Assembly	Assembly Statements
Statement, breaking	Statements
Statement, conversion from an expression	Turning an Expression into a Statement
Statement, several on one line	Statements
Statement, splitting	Statements
Static data	Static data
Static data, potential problems	Static data
Static memory allocation	Static Allocation
Static memory, use in Assembly	Static memory
stdin, setting	Input and output functions
stdout, setting	Input and output functions
stdrast, setting	Graphics functions
String	Strings
String	Normal strings and E-strings
String diagram	Normal strings and E-strings
String functions	String functions
String handling example	String Handling and I-O
String handling example, with handler	String Handling and I-O
STRING type	Normal strings and E-strings
String, append	String functions
String, breaking	Statements
String, comparison	String functions
String, constant	Normal strings and E-strings
String, converting to floating-point number	Floating-Point Functions
String, converting to numbers	String functions

String, copying	String functions
String, find sub-string	String functions
String, length	String functions
String, lowercase	String functions
String, middle copy	String functions
String, printing	Input and output functions
String, right-hand copy	String functions
String, special character sequence	String Constants Special Character ↔
Sequences	
String, splitting	Statements
String, trim leading whitespace	String functions
String, uppercase	String functions
Structure	OBJECT Type
Sub-string location in a string	String functions
Subtraction	Mathematics
Successful, zero exception	Raising an Exception
Summary of Part One	Summary
Super class	Inheritance in E
SUPER, operator	Inheritance in E
System function, calling from Assembly	Assembly and the E language
System module	Amiga System Modules
System objects	Amiga system objects
System support functions	System support functions
System variables	Built-In Variables
Tab character	String Constants Special Character ↔
Sequences	
Table of data	Tables of data
Tag list	Lists and E-lists
Tail of a linked list	Linked Lists
Tangent function	Floating-Point Functions
Terminating loops	WHILE loop
Termination, program	System support functions
Test for control-C	System support functions
Test for even number	Maths and logic functions
Test for odd number	Maths and logic functions
Text drawing	Graphics functions
Text, printing	Input and output functions
There exists a list element	Lists and quoted expressions
Throwing an exception	Raising an Exception
Timing expressions example	Timing Expressions
Tinkering	Tinkering with the example
Topaz, setting font	Graphics functions
Tree, binary	Binary Trees
Tree, branch	Binary Trees
Tree, leaf	Binary Trees
Tree, node	Binary Trees
Tree, root	Binary Trees
Trigonometry functions	Floating-Point Functions
Trim leading whitespace from a string	String functions
Trouble-shooting	Common Problems
Truth values as numbers	Logic and comparison
Turn an expression into a statement	Turning an Expression into a Statement
Type	Types
Type of a variable	Variable types
Type, 16-bit	Indirect types
Type, 32-bit	Default type
Type, 8-bit	Indirect types

Type, address	Addresses
Type, array	Tables of data
Type, complex	Complex types
Type, default	Default type
Type, direct	Indirect types
Type, dynamic	Inheritance in E
Type, E-list	Lists and E-lists
Type, indirect	Indirect types
Type, list	Lists and E-lists
Type, LONG	LONG Type
Type, LONG (definition)	Indirect types
Type, object	OBJECT Type
Type, object elements	Element selection and element types
Type, pointer	PTR Type
Type, procedure parameters	Procedure parameters
Type, recursive	Recursion
Type, STRING	Normal strings and E-strings
Type, variable declaration	Default type
Typed list	Typed lists
Unification	Unification
Unsigned and signed values	Signed and Unsigned Values
Uppercase a string	String functions
Using a module	Using Modules
Using arg	Any AmigaDOS
Using modules, example	Example Module Use
Using ReadArgs	AmigaDOS 2.0 (and above)
Using wbmessage	Any AmigaDOS
van Oortmerssen, Wouter	Amiga E Author
Variable	Variables and Expressions
Variable initialisation and automatic Handler	exceptions Raise within an Exception ←
Variable type	Default type
Variable, built-in	Built-In Variables
Variable, changing value	Assignment
Variable, declaration	Variable declaration
Variable, decrement	INC and DEC statements
Variable, global	Global and local variables
Variable, increment	INC and DEC statements
Variable, initialisation	Global and local variables
Variable, local	Global and local variables
Variable, procedure parameter	Global and local variables
Variable, same global and local names	Global and local variables
Variable, same local names	Global and local variables
Variable, system	Built-In Variables
Variable, type	Variable types
Variable, use in Assembly statements	Assembly and the E language
Version, Kickstart	System support functions
Vertical FOR loop	FOR loop
Vertical IF block	IF block
Vertical WHILE loop	WHILE loop
View module contents	Using Modules
Voiding an expression	Turning an Expression into a Statement
Voiding, automatic	Turning an Expression into a Statement
Wait for left mouse button click	Intuition support functions
Waiting for Intuition messages	Intuition support functions
wbmessage, using	Any AmigaDOS
WHILE loop	WHILE loop

WHILE loop check
WHILE loop version of a FOR loop
Whitespace
Whitespace, trim from a string
Window flags
Window, close
Window, open
Window, output
Wouter van Oortmerssen
Writing a character to file
Writing to memory
X-coordinate, mouse
Y-coordinate, mouse
Zero exception (success)
Zero fill field

WHILE loop
WHILE loop
Spacing and Separators
String functions
Intuition support functions
Intuition support functions
Intuition support functions
Built-In Variables
Amiga E Author
Input and output functions
Maths and logic functions
Intuition support functions
Intuition support functions
Raising an Exception
Input and output functions