

Symbolic constant name		
	Value (hexadecimal)	Mouse/keyboard equivalent
VK_LBUTTON	01	Left mouse button
VK_RBUTTON	02	Right mouse button
VK_CANCEL	03	Control-break processing
VK_MBUTTON	04	Middle mouse button
VK_UNDEFINED	05-07	Undefined
VK_BACK	08	BACKSPACE key
VK_TAB	09	TAB key
VK_CLEAR	0A-0B	Undefined
VK_RETURN	0C	CLEAR key
VK_UNDEFINED	0D	ENTER key
VK_SHIFT	0E-0F	Undefined
VK_CONTROL	10	SHIFT key
VK_MENU	11	CTRL key
VK_PAUSE	12	ALT key
VK_CAPITAL	13	PAUSE key
VK_ESCAPE	14	CAPS LOCK key
VK_UNDEFINED	15-19	Resv Kanji systems
VK_UNDEFINED	1A	Undefined
VK_ESCAPE	1B	ESC key
VK_UNDEFINED	1C-1F	Resv Kanji systems
VK_SPACE	20	SPACEBAR
VK_PRIOR	21	PAGE UP key
VK_NEXT	22	PAGE DOWN key
VK_END	23	END key
VK_HOME	24	HOME key
VK_LEFT	25	LEFT ARROW key
VK_UP	26	UP ARROW key
VK_RIGHT	27	RIGHT ARROW key
VK_DOWN	28	DOWN ARROW key
VK_SELECT	29	SELECT key
VK_EXECUTE	2A	OEM specific
VK_SNAPSHOT	2B	EXECUTE key
VK_INSERT	2C	Print Screen key
VK_DELETE	2D	INS key
VK_DELETE	2E	DEL key
VK_HELP	2F	HELP key
VK_0	30	0 key
VK_1	31	1 key
VK_2	32	2 key
VK_3	33	3 key
VK_4	34	4 key
VK_5	35	5 key
VK_6	36	6 key
VK_7	37	7 key
VK_8	38	8 key
VK_9	39	9 key
VK_UNDEFINED	3A-5A	Undefined
VK_LWIN	5B	Left Windows key (MS Keybd)
VK_RWIN	5C	Right Windows key (MS Keybd)
VK_APPS	5D	Applications key (MS Keybd)
VK_UNDEFINED	5E-5F	Undefined
VK_NUMPAD0	60	Numeric keypad 0 key
VK_NUMPAD1	61	Numeric keypad 1 key
VK_NUMPAD2	62	Numeric keypad 2 key
VK_NUMPAD3	63	Numeric keypad 3 key
VK_NUMPAD4	64	Numeric keypad 4 key
VK_NUMPAD5	65	Numeric keypad 5 key
VK_NUMPAD6	66	Numeric keypad 6 key
VK_NUMPAD7	67	Numeric keypad 7 key
VK_NUMPAD8	68	Numeric keypad 8 key
VK_NUMPAD9	69	Numeric keypad 9 key
VK_MULTIPLY	6A	Multiply key
VK_ADD	6B	Add key

Symbolic constant name		
	Value (hexadecimal)	Mouse/keyboard equivalent
VK_SEPARATOR	6C	Separator key
VK_SUBTRACT	6D	Subtract key
VK_DECIMAL	6E	Decimal key
VK_DIVIDE	6F	Divide key
VK_F1	70	F1 key
VK_F2	71	F2 key
VK_F3	72	F3 key
VK_F4	73	F4 key
VK_F5	74	F5 key
VK_F6	75	F6 key
VK_F7	76	F7 key
VK_F8	77	F8 key
VK_F9	78	F9 key
VK_F10	79	F10 key
VK_F11	7A	F11 key
VK_F12	7B	F12 key
VK_F13	7C	F13 key
VK_F14	7D	F14 key
VK_F15	7E	F15 key
VK_F16	7F	F16 key
VK_F17	80H	F17 key
VK_F18	81H	F18 key
VK_F19	82H	F19 key
VK_F20	83H	F20 key
VK_F21	84H	F21 key
VK_F22	85H	F22 key
VK_F23	86H	F23 key
VK_F24	87H	F24 key
VK_NUMLOCK	88-8F	Unassigned
VK_SCROLL	90	NUM LOCK key
	91	SCROLL LOCK key
	92-B9	Unassigned
	BA-C0	OEM specific
	C1-DA	Unassigned
	DB-E4	OEM specific
	E5	Unassigned
	E6	OEM specific
	E7-E8	Unassigned
	E9-F5	OEM specific
VK_ATTN	F6	Attn key
VK_CRSEL	F7	CrSel key
VK_EXSEL	F8	ExSel key
VK_EREOF	F9	Erase EOF key
VK_PLAY	FA	Play key
VK_ZOOM	FB	Zoom key
VK_NONAME	FC	Reserved for future use.
VK_PA1	FD	PA1 key
VK_OEM_CLEAR	FE	Clear key
	FF	Unassigned

```

File:
FPath := GetCurrentDir;
OpenDialog1.InitialDir := FPath;

ExtractFileDrive('<file name>')      C:
ExtractFileDir('<file name>')          C:\<path>
ExtractFilePath('<file name>')          C:\<path>\

ExtractFileName('<file name>')          fname.ext
ExtractFileExt('<file name>')           .ext
ExtractFilePath(Application.ExeName)    app path

DirectoryExists('<folder>')           [use FileCtrl]
CreateDir('<folder>')
FileExists('<file name>')
OpenDialog1.Filter := 
  'Text Files (*.txt)|*.txt|All (*.*)|*.*';
OpenDialog1.FilterIndex := 1; List .txt files
OpenDialog1.Execute;

```

Format Strings:

```

Format('%.3d', [<integer: 4>]);        '004'
Format('%.2d%2.2d%4d', [1,1,2000]);     '01012000'
Format('.0n', [<real: 1234567>]);      '1,234,567'
Format('.2n', [<real: 12345.675>]);     '12,345.68'
Format('.m', [<real: 12.34567>]);       '$12.35'
Format('%x', [<integer: 43>]);          '2B'
Format('%p', [<pointer>]);              '8 chr adr'
Format('%s string.', ['Some']);         'Some string.'
Format('{%-4.3s} {%-4.2s}', ['L123', 'R123']);   'L123' { R123 }
Format('%2:s %1:s %0:s', ['1st', '2nd', '3rd']);  '3rd 2nd 1st'
Format('{*.*f}', [<len: 9>, <dec: 4>], 100*PI);  '314.1593'
FloatToStrF(123.45, ffFixed, <len: 4>, <dec: 1>);  '123.5'
FormatMaskText('0-00-00;0;_', '12345');  '1-23-45'
FormatFloat('#0,000.0##', 1234.400);  '01,234.4'

```

Date/Time Formats:

```

FormatDateTime('mm/dd/yyyy', Now);  '09/07/2000'
FormatDateTime('hh:n:ss', Now);      '09:5:59'
FormatDateTime('<Specifier>', Now);
<c> 7/29/00 5:24:08 PM;
<m> 7; <mm> 07; <mmm> Jul; <mmmm> July;
<d> 1; <dd> 01; <ddd> Sun; <ddd> Sunday;
<ddd> 7/9/00; <ddd> Sunday, July 09, 2000;
<yy> 00; <yyyy> 2000;
<h> 9; <hh> 09; <n> 7; <nn> 07; <s> 9; <ss> 09;
<t> 5:38 PM; <tt> 5:38:28 PM;
<am/pm> pm; <a/p> ai; <ampm> PM; </> /; <:> :

```

String Manipulation:

```

Chr(<Integer>);
Copy(<SourceString>, <start pos>, <length>);
CompareStr(<SourceString1>, <SourceString2>);
Delete(<SourceString>, <start pos>, <length>);
IntToStr(<SourceInteger>);
Insert(<fromSourceString>, <toSourceString>,
      <start pos>);
IsCharAlpha(<Char>);
Length(<SourceString>);
LowerCase(<SourceString>);
Pos('find this', <SourceString>);
SetLength(<SourceString>, <length>);
StringOfChar('<Character>', <quantity>);
StrToInt(<SourceString>);
StrToIntDef(<SourceString>, <DefaultInteger>);
StrTo<??>(<SourceString>);
<??>ToStr(<SourceString>); ?? = Float, Currency,
                           Date, Time, DateTime
StringReplace(<SourceString>, '<replace this>',
             '<with this>', [rfReplaceAll]);
Trim(<SourceString>);      trim l/r blanks
TrimLeft(<SourceString>);  trim left blanks
TrimRight(<SourceString>); trim right blanks
UpperCase(<SourceString>);
UpCase(<Char>);
Val(<SourceString>, <Integers>, <ErrorPos>);

```

Sets:

```

ThisSet : set of byte;  [0-255]
ThisSet := [1, 2, 3, 7]; initialize to 1,2,3,7
ThisSet := ThisSet - [3]; exclude number 3
ThisSet := ThisSet + [5]; include number 5
ThisSet := [];          purge all numbers
if 7 in ThisSet ...

```

Pointer:

```

Pt : pointer; CharSet := 'AbCd'; Data : string;
Pt := @CharSet;
Data := PChar(Pt^); Data = 'AbCd'
Data := PChar(Pt^)[0]; Data = 'A'

```

Math Expressions:

Absolute value:	x := Abs(x);
Addition:	x := y + z;
Address of operator:	ptr := @ThisRecord;
Array subscript operator:	x := ThisArray[5];
Assignment:	x := 10;
Bitwise AND:	x := x AND \$02;
Bitwise NOT:	x := x AND NOT \$02;
Bitwise OR:	x := x OR \$FF;
Bitwise SHL:	x := x SHL \$02;
Bitwise SHR:	x := x SHR \$02;
Bitwise XOR:	x := x XOR y;
Decrement:	Dec(x); Dec(x, 2);
Equal to:	if (x = 10) ...
Fraction return:	x := Frac(x);
Greater than or equal to:	if (x >= 10) ...
Greater than:	if (x > 10) ...
Hex value operator:	x := \$FF;
Increment:	Inc(x); Inc(x, 2);
Integer division:	x := y Div 10;
Less than or equal to:	if (x <= 10) ...
Less than:	if (x < 10) ...
Logical AND:	if (x = 1) And (y = 2) ...
Logical NOT:	if Not Valid then ...
Logical OR:	if (x = 1) Or (y = 2) ...
Maximum number return:	x := Max(x, y);
Membership (dot) operator:	x := Record.Data;
Minimum number return:	x := Min(x, y);
Multiplication:	x := y * z;
Not equal to:	if (x <> 10) ...
Odd number:	if Odd(9) ...
Ord:	x := Ord('<character>');
Pi:	x := Pi;
Pointer operator:	ThisObject.Data^;
Real division:	x := y / 3.14;
Remainder:	x := y Mod 2;
Round to negative:	x := Floor(x);
Round to positive:	x := Ceil(x);
Square:	x := Sqr(x);
Square root:	x := Sqrt(x);
Subtraction:	x := y - z;
Return integer rounded toward zero:	FloatValue := Int(Real);
Discard decimals and return Integer:	Int64Value := Trunc(Real);
Round to the nearest whole number:	Int64Value := Round(Real);

Numeric Variables:

Type	Size	Range of Values
Boolean	1	True or False
Byte	1	0 to 255
Cardinal	4	0 to 4,294,967,295
Char	1	0 to 255
Comp	8	-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807
Currency	8	-922,337,203,685,477,580 to 922,337,203,685,477,580
Double	8	5.0 ¥ 10^-324 to 1.7 ¥ 10^308
Extended	10	3.4 ¥ 10^4932 to 1.1 ¥ 10^4932
Int64	8	-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807
Integer	4	-2,147,483,648 to 2,147,483,647
LongInt	4	-2,147,483,648 to 2,147,483,647
LongWord	4	0 to 4,294,967,295
Real	8	5.0 ¥ 10^-324 to 1.7 ¥ 10^308
ShortInt	1	-128 to 127
Single	4	1.5 ¥ 10^-45 to 3.4 ¥ 10^38
SmallInt	2	-32,768 to 32,767
WideChar	2	0 to 65,535
Word	2	0 to 65,535
Variant	16	All above

#	\$	Dec	Hex	Fn	Binary	Dec	Hex	Fn	Binary	Dec	Hex	Fn	Binary	Dec	Hex	Fn	Binary
00	00	0000	0000	0000	00000000	64	40	@	0100 0000	128	80	1000	0000	192	C0	À	1100 0000
01	01	0000	0001	0001	00000001	65	41	A	0100 0001	129	81	1000	0001	193	C1	À	1100 0001
02	02	0000	0010	0010	00000010	66	42	B	0100 0010	130	82	1000	0010	194	C2	À	1100 0010
03	03	0000	0011	0011	00000011	67	43	C	0100 0011	131	83	1000	0011	195	C3	À	1100 0011
04	04	0000	0100	0100	00000100	68	44	D	0100 0100	132	84	1000	0100	196	C4	À	1100 0100
05	05	0000	0101	0101	00000101	69	45	E	0100 0101	133	85	1000	0101	197	C5	À	1100 0101
06	06	0000	0110	0110	00000110	70	46	F	0100 0110	134	86	1000	0110	198	C6	À	1100 0110
07	07	BE	0000	0111	00000111	71	47	G	0100 0111	135	87	1000	0111	199	C7	À	1100 0111
08	08	BK	0000	1000	000001000	72	48	H	0100 1000	136	88	1000	1000	200	C8	È	1100 1000
09	09	TAB	0000	1001	000001001	73	49	I	0100 1001	137	89	1000	1001	201	C9	È	1100 1001
10	10	LF	0000	1010	000001010	74	4A	J	0100 1010	138	8A	1000	1010	202	CA	È	1100 1010
11	OB	VT	0000	1011	000001011	75	4B	K	0100 1011	139	8B	1000	1011	203	CB	È	1100 1011
12	OC	FF	0000	1100	000001100	76	4C	L	0100 1100	140	8C	1000	1100	204	CC	Ì	1100 1100
13	OD	CR	0000	1101	000001101	77	4D	M	0100 1101	141	8D	1000	1101	205	CD	Ì	1100 1101
14	OE	0000	1110	000001110	78	4E	N	0100 1110	142	8E	1000	1110	206	CE	Ì	1100 1110	
15	OF	0000	1111	000001111	79	4F	O	0100 1111	143	8F	1000	1111	207	CF	Ì	1100 1111	
16	10	00000000	80	50	P	0101 00000	144	90	10000	0000	208	D0	Ð	1101 00000			
17	11	00000001	81	51	Q	0100 00000001	145	91	10001	0000	209	D1	Ñ	1101 00000001			
18	12	00000010	82	52	R	0101 00010	146	92	10001	0010	210	D2	Ò	1101 00010			
19	13	00000011	83	53	S	0101 00011	147	93	10001	0011	211	D3	Ó	1101 00011			
20	14	000000100	84	54	T	0101 000100	148	94	10001	0100	212	D4	Ô	1101 000100			
21	15	000000101	85	55	U	0101 000101	149	95	10001	0101	213	D5	Ó	1101 000101			
22	16	000000110	86	56	V	0101 000110	150	96	10001	0110	214	D6	Ö	1101 000110			
23	17	000000111	87	57	W	0101 000111	151	97	10001	0111	215	D7	×	1101 000111			
24	18	0000001000	88	58	X	0101 0001000	152	98	10001	1000	216	D8	Ø	1101 0001000			
25	19	0000001001	89	59	Y	0101 0001001	153	99	10001	1001	217	D9	Ù	1101 0001001			
26	1A	EOF	0000001010	90	5A	Z	0101 0001010	154	9A	10001	1010	218	DA	Ù	1101 0001010		
27	1B	ESC	0000001011	91	5B	[0101 0001011	155	9B	10001	1011	219	DB	Ù	1101 0001011		
28	1C	0000001100	92	5C	\	0101 0001100	156	9C	10001	1100	220	DC	Ù	1101 0001100			
29	1D	0000001101	93	5D]	0101 0001101	157	9D	10001	1101	221	DD	Ý	1101 0001101			
30	1E	0000001110	94	5E	^	0101 0001110	158	9E	10001	1110	222	DE	Þ	1101 0001110			
31	1F	0000001111	95	5F	-	0101 0001111	159	9F	10001	1111	223	DF	Ù	1101 0001111			
32	20	SP	0000000000	96	60	-	0100 00000000	160	A0	10100	00000	224	E0	à	1100 00000000		
33	21	!	0000000001	97	61	a	0100 00000001	161	A1	í	10100	225	E1	á	1100 00000001		
34	22	"	00000000010	98	62	b	0100 00000010	162	A2	¢	10100	226	E2	á	1100 00000010		
35	23	#	00000000011	99	63	c	0100 00000011	163	A3	£	10100	227	E3	ää	1100 00000011		
36	24	\$	00000000100	100	64	d	0100 0000100	164	A4	¤	10100	228	E4	ää	1100 0000100		
37	25	%	00000000101	101	65	e	0100 0000101	165	A5	¥	10100	229	E5	å	1100 0000101		
38	26	&	00000000110	102	66	f	0100 0000110	166	A6	¡	10100	230	E6	æ	1100 0000110		
39	27	'	00000000111	103	67	g	0100 0000111	167	A7	§	10100	231	E7	ç	1100 0000111		
40	28	(000000001000	104	68	h	0100 00001000	168	A8	·	10100	232	E8	é	1100 00001000		
41	29)	000000001001	105	69	i	0100 00001001	169	A9	®	10100	233	E9	é	1100 00001001		
42	2A	*	000000001010	106	6A	j	0100 00001010	170	AA	ª	10100	234	EA	é	1100 00001010		
43	2B	+	000000001011	107	6B	k	0100 00001011	171	AB	«	10100	235	EB	ë	1100 00001011		
44	2C	,	000000001100	108	6C	l	0100 00001100	172	AC	¬	10100	236	EC	í	1100 00001100		
45	2D	-	000000001101	109	6D	m	0100 00001101	173	AD	10100	1101	237	ED	í	1100 00001101		
46	2E	.	000000001110	110	6E	n	0100 00001110	174	AE	®	10100	238	EE	î	1100 00001110		
47	2F	/	000000001111	111	6F	o	0100 00001111	175	AF	¬	10100	239	EF	í	1100 00001111		
48	30	0	000000000000	112	70	p	0101 00000000	176	B0	º	101100000	240	F0	ð	1111 00000000		
49	31	1	000000000001	113	71	q	0101 00000001	177	B1	±	101100001	241	F1	ñ	1111 00000001		
50	32	2	000000000010	114	72	r	0101 00000010	178	B2	²	1011000010	242	F2	ð	1111 00000010		
51	33	3	000000000011	115	73	s	0101 00000011	179	B3	³	1011000011	243	F3	ó	1111 00000011		
52	34	4	0000000000100	116	74	t	0111 000000100	180	B4	·	10110000100	244	F4	ô	1111 000000100		
53	35	5	0000000000101	117	75	u	0111 000000101	181	B5	µ	10110000101	245	F5	ö	1111 000000101		
54	36	6	0000000000110	118	76	v	0111 000000110	182	B6	¶	10110000110	246	F6	ö	1111 000000110		
55	37	7	0000000000111	119	77	w	0111 000000111	183	B7	·	10110000111	247	F7	÷	1111 000000111		
56	38	8	0000000000000000	120	78	x	0111 00000000000000	184	B8	·	101100000000000000	248	F8	ø	1111 00000000000000		
57	39	9	0000000000000001	121	79	y	0111 000000000001	185	B9	í	1011000000000001	249	F9	ú	1111 000000000001		
58	3A	:	0000000000000010	122	7A	z	0111 000000000010	186	BA	º	1011000000000010	250	FA	ú	1111 000000000010		
59	3B	;	0000000000000011	123	7B	{	0111 000000000011	187	BB	»	1011000000000011	251	FB	û	1111 000000000011		
60	3C	<	000000000000001100	124	7C		0111 00000000001100	188	BC	¼	101100000000001100	252	FC	û	1111 00000000001100		
61	3D	=	000000000000001101	125	7D	}	0111 00000000001101	189	BD	½	101100000000001101	253	FD	ý	1111 00000000001101		
62	3E	>	000000000000001110	126	7E	~	0111 00000000001110	190	BE	°	101100000000001110	254	FE	þ	1111 00000000001110		
63	3F	? 000000000000001111	127	7F	0111 00000000001111	191	BF	¿	101100000000001111	255	FF	ÿ	1111 00000000001111				