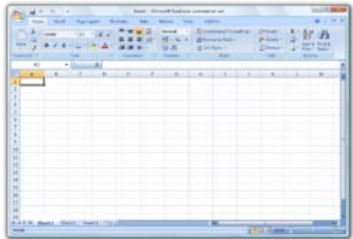


Microsoft Excel

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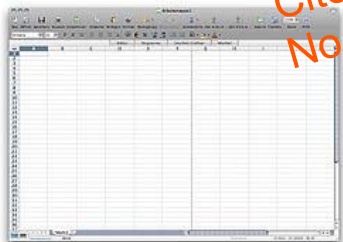
Microsoft Excel (Windows)



A typical blank Microsoft Excel 2007 spreadsheet running on [Windows Vista](#).

Developer(s)	Microsoft
Stable release	12.0.6425.1000 (2007 SP2) / April 28, 2009
Operating system	Microsoft Windows
Type	Spreadsheet
License	Proprietary
Website	Microsoft Office Excel Homepage

Microsoft Excel (Mac OS X)



Microsoft Excel: Mac 2008 spreadsheet running on [Mac OS X 10.5](#).

Developer(s)	Microsoft
Stable release	12.1.1 Buid 080522 (2008) / 2008-4-14; 16 months ago
Operating system	Mac OS X
Type	Spreadsheet
License	Proprietary
Website	Microsoft Excel: Mac 2008

Cited in U.S. v. Comprehensive Drug Testing, Inc.
No. 05-10067 archived on September 4, 2009

Microsoft Excel (full name **Microsoft Office Excel**) is a [spreadsheet](#)-application written and distributed by [Microsoft](#) for [Microsoft Windows](#) and [Mac OS X](#). It features calculation, graphing tools, [pivot tables](#) and a macro programming language called VBA ([Visual Basic for Applications](#)). It has been the most widely used spreadsheet application available for these platforms since version 5 in 1993.^{[\[citation needed\]](#)} Excel is part of [Microsoft Office](#).

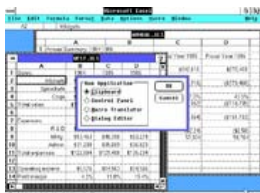
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[[edit](#)] History

[[edit](#)] Excel 2.0

Microsoft originally marketed a spreadsheet program called [Multiplan](#) in 1982, which became very popular on [CP/M](#) systems, but on [MS-DOS](#) systems it lost popularity to [Lotus 1-2-3](#). Microsoft released the first version of Excel for the Mac in 1985, and the first Windows version (numbered 2.05 to line up with the Mac and bundled with a run-time Windows environment) in November 1987. Lotus was slow to bring 1-2-3 to Windows and by 1988 Excel had started to outsell 1-2-3 and helped Microsoft achieve the position of leading PC software developer. This accomplishment, dethroning the king of the software world, solidified Microsoft as a valid competitor and showed its future of developing [GUI](#) software. Microsoft pushed its advantage with regular new releases, every two years or so. The current version for the Windows platform is Excel 12, also called Microsoft Office Excel 2007. The current version for the Mac OS X platform is Microsoft Excel 2008.



Microsoft Excel 2.1 included a [runtime](#) version of [Windows 2.1](#)

Early in 1993, Excel became the target of a trademark lawsuit by another company already selling a software package named "Excel" in the finance industry. As the result of the dispute Microsoft was required to refer to the program as "Microsoft Excel" in all of its formal press releases and legal documents. However, over time this practice has been ignored, and Microsoft cleared up the issue permanently when they purchased the trademark of the other program.^[*citation needed*] Microsoft also encouraged the use of the letters **XL** as shorthand for the program; while this is no longer common, the program's [icon](#) on Windows still consists of a stylized combination of the two letters, and the [file extension](#) of the default Excel format is [.xls](#).

Excel offers many [user interface](#) tweaks over the earliest electronic spreadsheets; however, the essence remains the same as in the original spreadsheet, [VisiCalc](#): the program displays cells organized in rows and columns, and each cell contains data or a formula, with relative or absolute references to other cells.

Excel was the first spreadsheet that allowed the user to define the appearance of spreadsheets (fonts, character attributes and cell appearance). It also introduced intelligent cell recomputation, where only cells dependent on the cell being modified are updated (previous spreadsheet programs recomputed everything all the time or waited for a specific user command). Excel has extensive graphing capabilities, and enables users to perform [mail merge](#).

When Microsoft first bundled [Microsoft Word](#) and [Microsoft PowerPoint](#) into [Microsoft Office](#) in 1993, those applications had their [GUIs](#) redesigned for consistency with Excel,^[*citation needed*] the [killer app](#) on the [PC](#) at the time.

Since 1993, Excel has included [Visual Basic for Applications](#) (VBA), a programming language based on [Visual Basic](#) which adds the ability to automate tasks in Excel and to provide user defined functions (UDF) for use in worksheets. VBA is a powerful addition to the application which, in later versions, includes a fully featured [integrated development environment](#) (IDE). Macro recording can produce VBA code replicating user actions, thus allowing simple automation of regular tasks. VBA allows the creation of forms and in-worksheet controls to communicate with the user. The language supports use (but not creation) of [ActiveX](#) ([COM](#)) [DLL](#)'s; later versions add support for class modules allowing the use of basic [object-oriented programming](#) techniques.

The automation functionality provided by VBA has caused Excel to become a target for [macro viruses](#). This was a serious problem in the corporate world until antivirus products began to detect these viruses. Microsoft belatedly took steps to prevent the misuse by adding the ability to disable macros completely, to enable macros when opening a workbook or to trust all macros signed using a trusted certificate.

[[edit](#)] Excel 5.0

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Versions 5.0 to 9.0 of Excel contain various [Easter eggs](#), although since version 10 [Microsoft](#) has taken measures to eliminate such undocumented features from their products.^[1]

[[edit](#)] Excel 2000

See also: [Microsoft Office 2000](#)

For most users, one of the most obvious changes introduced with Excel 2000 (and the rest of the Office 2000 suite) was a clipboard that could hold multiple objects at once. Another noticeable change was that the Office Assistant, whose frequent unsolicited appearance in Excel 97 had annoyed many users, was changed to be less intrusive.

[[edit](#)] Versions

[[edit](#)] Microsoft Windows

- 1987 Excel 2.0 for Windows
- 1990 Excel 3.0
- 1992 Excel 4.0
- 1993 Excel 5.0 (Office 4.2 & 4.3, also a 32-bit version for [Windows NT](#) only on the [PowerPC](#), [DEC Alpha](#), and [MIPS](#))
- 1995 Excel for Windows 95 (version 7.0) - included in [Office 95](#)
- 1997 Excel 97 - included in Office 97 (x86 and also a DEC Alpha version). This version of Excel includes a flight simulator as an [Easter Egg](#).
- 1999 Excel 2000 (version 9.0) included in Office 2000
- 2001 Excel 2002 (version 10) included in [Office XP](#)
- 2003 Excel 2003 (version 11) included in [Office 2003](#)
- 2007 Excel 2007 (version 12) included in [Office 2007](#)
- Notice: There is no MS-DOS version or Excel 1.0 for Windows, because the Windows version was introduced at the time the Mac version was up to 2.0.*
- Notice: There is no Excel 6.0, because the [Windows 95](#) version was launched with Word 7. All the Office 95 & Office 4.X products have [OLE 2](#) capacity — moving data automatically from various programs — and Excel 7 should show that it was contemporary with Word 7.*

[[edit](#)] Apple Macintosh

- 1985 Excel 1.0
- 1988 Excel 1.5
- 1989 Excel 2.2
- 1990 Excel 3.0
- 1992 Excel 4.0
- 1993 Excel 5.0 (Office 4.X—Motorola 68000 version and first PowerPC version)
- 1998 Excel 8.0 (Office '98)
- 2000 Excel 9.0 (Office 2001)
- 2001 Excel 10.0 (Office v. X)
- 2004 Excel 11.0 (part of [Office 2004 for Mac](#))
- 2008 Excel 12.0 (part of [Office 2008 for Mac](#))

[[edit](#)] OS/2

- 1989 Excel 2.2
- 1990 Excel 2.3
- 1991 Excel 3.0

Versions of Excel up to 7.0 had a limitation in the size of their data sets of 16K (2¹⁴=16384) rows. Versions 8.0 through 11.0 could handle 65K (2¹⁶=65536) rows and 256 columns (2⁸ as label 'IV'). Version 12.0 can handle 1M (2²⁰=1048576) rows, and 16384 (2¹⁴ as label 'XFD') columns.^[2]

[[edit](#)] File formats

Excel Spreadsheet

Filename extension	.xls
Internet media type	application/vnd.ms-excel
Uniform Type Identifier	com.microsoft.excel.xls ^[3]
Developed by	Microsoft
Type of format	Spreadsheet

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Microsoft Excel up until 2007 version used a proprietary binary file format called Binary Interchange File Format (BIFF) as its primary format.^[4] Excel 2007 uses [Office Open XML](#) as its primary file format, an XML-based format that followed after a previous XML-based format called "XML Spreadsheet" ("XMLSS"), first introduced in Excel 2002.^[5] The latter format is not able to encode VBA macros.

Although supporting and encouraging the use of new XML-based formats as replacements, Excel 2007 remained backwards-compatible with the traditional, binary formats. In addition, most versions of Microsoft Excel can read [CSV](#), [DBF](#), [SYLK](#), [DIF](#), and other legacy formats. Support for some older file formats were removed in Excel 2007^[6]. The file formats were mainly from DOS based programs.

[edit] Binary

[OpenOffice.org](#) has created documentation of the Excel format.^[7] Since then Microsoft made the Excel binary format specification available to freely download.^[8]

[edit] Standard file-extensions

 This section requires [expansion](#) with: explanation of purpose and when deprecated.

Format	Extension	Description
Spreadsheet	.xls	Main spreadsheet format which holds data in worksheets, charts, and macros
Add-in (VBA)	.xla	Adds custom functionality; written in VBA
Toolbar	.xlb	The file extension where Microsoft Excel custom toolbar settings are stored.
Chart	.xlc	A chart created with data from a Microsoft Excel spreadsheet that only saves the chart. To save the chart and spreadsheet save as .XLS. >XLC is not supported in Excel 2007.
Dialog	.xld	Used in older versions of Excel.
Archive	.xlk	A backup of an Excel Spreadsheet
Add-in (DLL)	.xll	Adds custom functionality; written in C++/C , Visual Basic , Fortran , etc. and compiled in to a special dynamic-link library
Macro	.xlm	A macro is created by the user or pre-installed with Excel.
Template	.xlt	A pre-formatted spreadsheet created by the user or by Microsoft Excel.
Module	.xlv	A module is written in VBA (Visual Basic for Applications) for Microsoft Excel
Workspace	.xlw	Arrangement of the windows of multiple Workbooks

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[edit] Office Open XML

Main article: [Office Open XML](#)

Microsoft Excel 2007, along with the other products in the [Microsoft Office 2007](#) suite, introduces a host of new file formats. These form part of the [Office Open XML](#) (OOXML) specification.

The new Excel 2007 formats are:

New Excel 2007 formats

Format	Extension	Description
Excel Workbook	.xlsx	The default Excel 2007 workbook format. In reality a ZIP compressed archive with a directory structure of XML text documents. Functions as the primary replacement for the former binary .xls format, although it does not support Excel macros for security reasons.
Excel Macro-enabled Workbook	.xlsm	As Excel Workbook, but with macro support.
Excel Binary Workbook	.xlsb	As Excel Macro-enabled Workbook, but storing information in binary form rather than XML documents for opening and saving documents more quickly and efficiently. Intended especially for very large documents with tens of thousands of rows, and/or several hundreds of columns.
Excel Macro-enabled Template	.xltm	A template document that forms a basis for actual workbooks, with macro support. The replacement for the old .xlt format.
Excel Add-in	.xlam	Excel add-in to add extra functionality and tools. Inherent macro support because of the file purpose.

[edit] Export and migration of spreadsheets

Programmers have produced [APIs](#) to open Excel spreadsheets in a variety of applications and environments other than Microsoft Excel. These include opening excel documents on the web using either [ActiveX](#) controls, or plugins like the [Adobe Flash Player](#). The [Apache POI](#) [opensource](#) project provides [Java](#) libraries for reading and writing excel spreadsheet files. Attempts have also been made to be able to copy excel spreadsheets to web applications using [comma-separated values](#). [ExcelPackage](#) is another open-source project that provides server-side generation of Microsoft Excel 2007 spreadsheets.

[edit] Programming

Excel offers users the useful ability to write code using the programming language [Visual Basic for Applications](#) (VBA). Programmers write this code using an editor viewed separately from the spreadsheet. Manipulation of the spreadsheet entries is controlled using objects.^[9] With this code any function or subroutine that can be set up in a Basic- or Fortran-like language can be run using input taken from the spreadsheet proper, and the results of the code are instantaneously written to the spreadsheet or displayed on charts (graphs). The spreadsheet becomes an interface or window to the code, enabling easy interaction with the code and what it calculates. VBA also supports simple GUI forms based programming embedded in the spreadsheet so that entire forms based applications can be written in Excel.

The most common and easiest way to generate VBA code is by use of the macro recorder function that writes the code for the actions that the user carries out with mouse/keyboard. There is a relative/absolute toggle button that allows the user to switch between the two whilst recording a macro. Relative/absolute in this context means the relative to the start cell location or an absolute cell reference for example cell A1 (column A, row 1).

Certain features such as loop functions and screen prompts by their own properties cannot be recorded, but must be entered into the VBA module directly by the programmer.

The macros can easily be activated using a button using the form menu, and advanced users can use user prompts to create an interactive program.

Although conceptually simple to understand (especially using a macro recorder), the combination of multiple steps under many different constraints/conditions requires a robust testing/quality control processes to gain regular/reliable/predictable results for the product to realise its benefits.

[[edit](#)] Software errors

Criticisms of spreadsheets in general also apply to Excel. See [Spreadsheet shortcomings](#). Errors specific to Excel include accuracy, date limitations and the (now resolved) Excel 2007 display error.

[[edit](#)] Accuracy

Due to Excel's foundation on [floating point](#) calculations, the statistical accuracy of Excel has been criticized,^{[10][11][12][13]} as lacking certain statistical tools.

[[edit](#)] Excel MOD function error

Excel has issues with [modulo operations](#). In the case of excessively large results, Excel will return the incorrect answer of #NUM! error.^{[14][15]}

[[edit](#)] Date problems

Excel incorrectly treats 1900 as a [leap year](#).^{[16][17]} The bug originated from [Lotus 1-2-3](#), and was purposely implemented in Excel for the purpose of [backward compatibility](#).^[18] This legacy has later been carried over into [Office Open XML](#) file format.^[citation needed] Excel also supports the second date format based on year 1904 [epoch](#). The Excel DATE() function causes problems with a year value prior to 1900.^[19]

[[edit](#)] See also

- [Comparison of spreadsheets](#)
- [List of spreadsheets](#)
- [Visual Basic for Applications](#)
- [Excel Viewer](#)
- [Spreadmart](#)

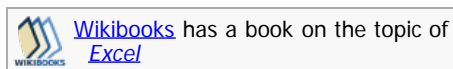
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[[edit](#)] External links



- [Microsoft Excel official site](#)

× ▾ ▹ ⓘ

Spreadsheet software

- | | |
|--------------------|--|
| Open source | Gnumeric · KSpread · OpenOffice.org Calc · NeoOffice |
| Freeware | IBM Lotus Symphony · Google Docs |
| Retail | Apple Numbers · Corel Quattro Pro · Lotus 1-2-3 · Microsoft (Excel · Works) · Quantrix · StarCalc |
- Category** · [Comparison](#) · [List](#)

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| Server applications | Communications · Forms · Groove · PerformancePoint · Project · Project Portfolio · SharePoint (Excel Services) · InfoPath Forms Services |
| Online services | Office Live (Small Business · Workspace · Meeting) · Office Online |
| Discontinued | Binder · Data Analyzer · FrontPage · Graph · Mail · Office Assistant · PhotoDraw · Photo Editor · Schedule+ · Vizact · Web Components |
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