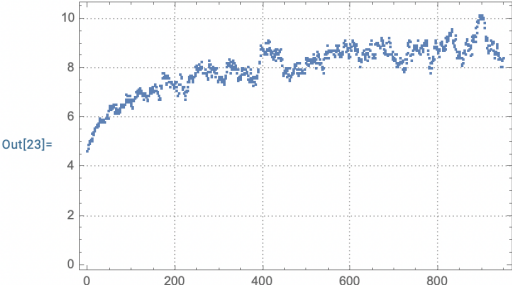# Comparison of Ease-of-Use Features in Mathematica 14.2 and Maple 2025
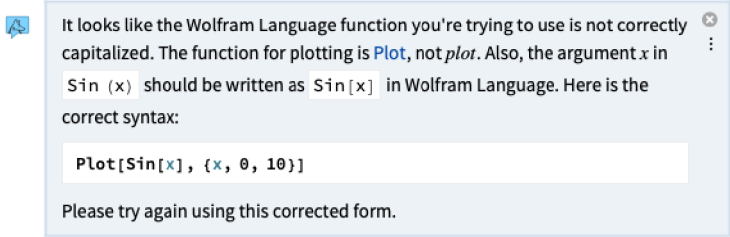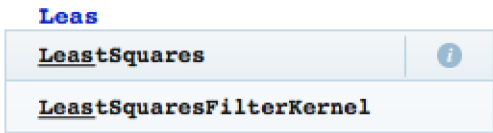
## Summary
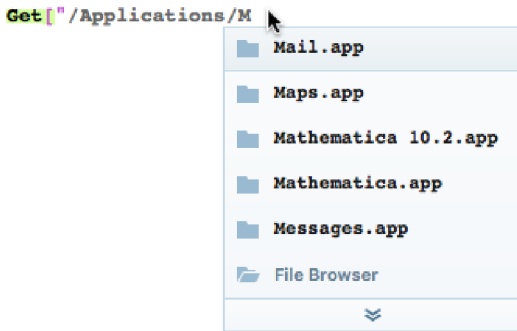
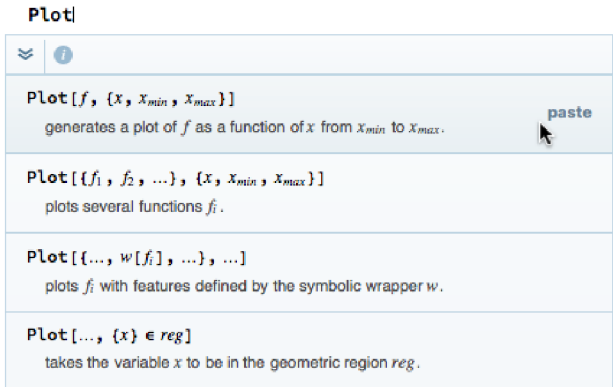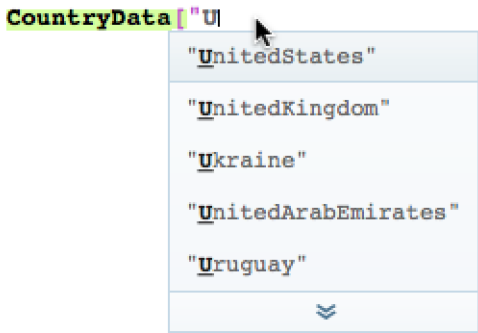Ensuring ease of operation is particularly important for a system as vast as Mathematica. A steady focus on automation and good user-interface design has meant that Mathematica has become progressively easier to use even as its computational capabilities have grown.
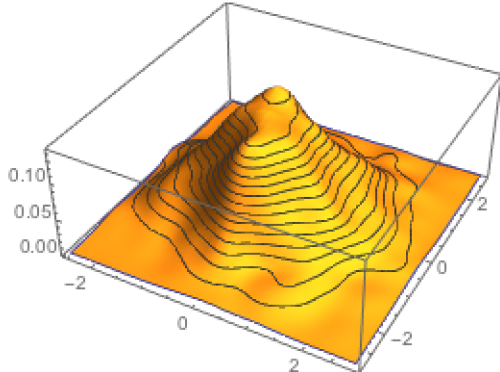
Maplesoft claims that Maple is easier to use than Mathematica, but a systematic cataloging of ease-of-use features shows that Maple supports almost none of the tools, hints or good design principles that are built into Mathematica.

## Code editing

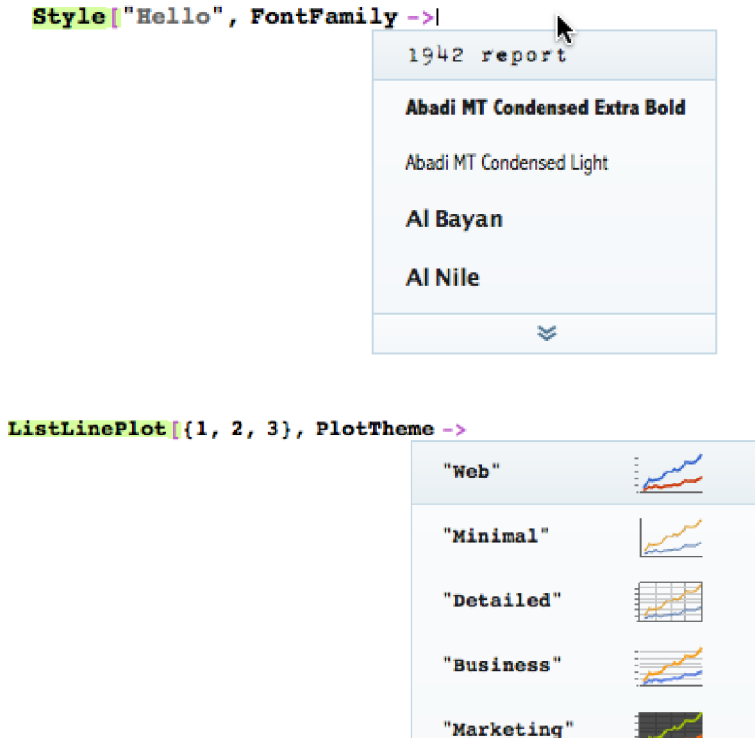| Mathematica | Details | Maple |
|---|---|---|
| AI–powered code writing | Use an AI–based chat to help you write code by describing the task in words.<br><br><br><br>The assistant has live access to Wolfram\|Alpha data and the Wolfram Language documentation and can evaluate code. It maintains the context of an ongoing conversation together with the other contents of your open notebooks. | Maple provides a preview version of an AI tool that has no access to live tools. |

| Mathematica | Details | Maple |
|---|---|---|
| AI–powered code feedback | Click the AI feedback icon next to the input and output, and the AI assistant will provide feedback on your code, taking into account the context of preceding calculations.<br><br>Out[76]= plot[Sin x, {x, 0, 10}]<br><br>It looks like the Wolfram Language function you're trying to use is not correctly capitalized. The function for plotting is Plot, not plot. Also, the argument $x$ in Sin (x) should be written as Sin[x] in Wolfram Language. Here is the correct syntax:<br><br>Plot[Sin[x], {x, 0, 10}]<br><br>Please try again using this corrected form. | ✖ |
| AI–powered content suggestions | Use an AI–based tool to complete or suggest code or narrative based on the context around the current location in your notebook. | A preview version of similar functionality is available. |
| Autocompletion: function names | Type the start, middle or abbreviation of a command, and Mathematica automatically provides completion choices. Just press return to save typing the rest.<br><br>**Leas**<br>**LeastSquares** ⓘ<br>**LeastSquaresFilterKernel** | Maple returns only matches that start with the given characters. |
| Autocompletion: command templates | Mouse over a command or use a keystroke after typing a command, and you are offered standard usage templates. Select one by mouse or keyboard and then tab between the arguments as you fill them in.<br><br>**Plot**<br><br>Plot[$f$, {$x$, $x_{min}$, $x_{max}$}]<br>generates a plot of $f$ as a function of $x$ from $x_{min}$ to $x_{max}$.   paste<br><br>Plot[{$f_1$, $f_2$, ...}, {$x$, $x_{min}$, $x_{max}$}]<br>plots several functions $f_i$.<br><br>Plot[{..., $w[f_i]$, ...}, ...]<br>plots $f_i$ with features defined by the symbolic wrapper $w$.<br><br>Plot[..., {$x$} ∈ $reg$]<br>takes the variable $x$ to be in the geometric region $reg$. | Maple provides templates only via keyboard access. |
| Autocompletion: delimiter matching | The matching closing bracket or quotes can be created automatically for you without moving the cursor. | ✖ |

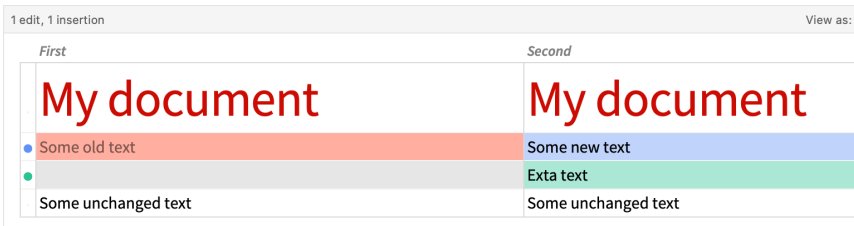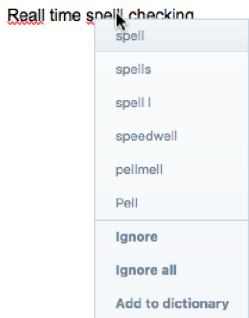| Mathematica | Details | Maple |
|---|---|---|
| Autocompletion: strings | Start typing a string in a place where there are finite choices, and Mathematica will offer you autocompletions.<br><br>CountryData["U<br><br>"UnitedStates"<br>"UnitedKingdom"<br>"Ukraine"<br>"UnitedArabEmirates"<br>"Uruguay" | ✔ |
| Autocompletion: iconic preview | Some autocompletions, such as styles, fonts and colors, are shown with visual cues, so you can see what the effect of the choice will be.<br><br>Style["Hello", FontFamily -><br><br>1942 report<br>**Abadi MT Condensed Extra Bold**<br>Abadi MT Condensed Light<br>**Al Bayan**<br>**Al Nile**<br><br>ListLinePlot[{1, 2, 3}, PlotTheme -><br>"Web"<br>"Minimal"<br>"Detailed"<br>"Business"<br>"Marketing" | ✖ |
| Autocompletion: path browser | Start typing a file name, and Mathematica helps you navigate your file system.<br><br>Get["/Applications/M<br>📁 Mail.app<br>📁 Maps.app<br>📁 Mathematica 10.2.app<br>📁 Mathematica.app<br>📁 Messages.app<br>📂 File Browser | Provided only in code–edit regions, not in Worksheets. |

| | | |
|---|---|---|
| Symbol highlighting | Click a symbol in a block of code and all other occurrences are immediately highlighted.<br><br>```
Module[{g1, emb, grp},
  g1 = RandomGraph[{10, 30}];
  emb = GraphEmbedding[g1];
  grp = GatherBy[emb, Last];
  emb = ReplaceAll[emb,
    Catenate[Catenate[Map[If[Length[#] == 1,
        Thread[# → #], Thread[
          # → (# - {{0, 0}, {0, 2.5}})]] &,
        Partition[SortBy[#, First], UpTo[2]]]] & /@
      grp]];
  Graph[g1, VertexCoordinates → emb]
]
``` | ✖ |
| Inline evaluation | You can evaluate part of an input expression in place to simplify your input without having to do a side calculation.<br><br>`data = {1, 2 + 3 + 4 + 5, 6}`  →  `data = {1, 14, 6}` | ✖ |
| Generalized input | You can use any formatted content in Mathematica input, not just typeset math or text. Input can include images, 3D images, geometry, graphs, color swatches and more. Code is easier to write and easier to read.<br><br><br><br>`ListPlot[{1, 2, 3}, PlotStyle → ■]` | ✖ |
| Iconized input | You can collapse large input into an icon that makes your notebooks easier to read while still saving all data in the same file. Use the icon as input, or expand it to see the contents.<br><br>`data = [⊙ Experimental data ⊞];`<br><br>`SmoothHistogram3D[data]`<br><br> | ✖ |

| Mathematica | Details | Maple |
|---|---|---|
| Code reformatting | Apply automated line breaks and indentation to make your code more readable.<br><br>$f[x\_]:=If[x\leq 1,x,If[EvenQ[x],x/2,3x+1]]$<br><br>```<br>f[x_] :=<br>    If[x ≤ 1,<br>        x<br>        ,<br>        If[EvenQ[x],<br>            x / 2<br>            ,<br>            3 x + 1<br>        ]<br>    ]<br>``` | ✗ |
| Extend selection | Multiclick inside a math expression or use a keyboard shortcut to extend the selection in a mathematically valid way.<br><br>$1 + \sqrt{2 + \frac{3}{4+x}}$<br><br>$1 + \sqrt{2 + \frac{3}{4+x}}$<br><br>$1 + \sqrt{2 + \frac{3}{4+x}}$<br><br>$1 + \sqrt{2 + \frac{3}{4+x}}$ | ✗ |
| Custom notations | You can create your own 2D mathematical typeset notations for input or output. | ✗ |
| Edit during evaluation | In Mathematica, you can continue to edit the working document while long calculations are being performed. | ✗ |
| Customizable input aliases | You can set up your own aliases for any content that you type or insert frequently. These can insert text, typeset math or images. Aliases also appear on the autocompletion prompts. Mathematica comes with a collection of predefined shortcuts. For example, type "[ESC]del" and the autocompletion shows:<br><br>:del<br><br>| $\nabla$ | del | \[Del] |<br>| $\delta$ | delta | \[Delta] |<br>| $\lambda$ | delay | \[SystemsModelDe |<br>| $\lambda_\blacksquare$ | delay | |<br>| $\nabla_\blacksquare \cdot \Box$ | del. | |<br>| $\nabla_\blacksquare \times \Box$ | delx | |<br>| $\nabla_\blacksquare^2 \Box$ | del2 | |<br><br>Click the autocomplete or finish typing "[ESC]del2[ESC]" and the 2D structure using the Del character (Unicode 8711) and placeholders appears in its place:<br>$\nabla_\Box^2 \Box$ | ✗ |

| Mathematica | Details | Maple |
|---|---|---|
| IDE support | As well as the Wolfram Notebook interface, plugins are available to use other IDEs including Visual Studio Code, IntelliJ, Eclipse, Jupyter and others. | Maple can be used from Eclipse and Jupyter |

# Error detection

| Mathematica | Details | Maple |
|---|---|---|
| Syntax coloring: bracket matching | Mismatched brackets are automatically colored to highlight the error.<br><br>`Sin[x + Cos[x]` | ✗ |
| Syntax coloring: missing arguments | Functions that require more arguments than you have provided are highlighted with a marker.<br><br>`Mod[3˄]` | ✗ |
| Syntax coloring: excess arguments | If you enter too many arguments for a function, Mathematica highlights the excess arguments.<br><br>`Sin[2, 3]` | ✗ |
| Syntax coloring: undefined symbols | Undefined symbols (usually because you have misremembered or misspelled a function name) are automatically colored blue.<br><br>`Plott[Sin[x], {x, 0, 10}]` | ✗ |
| Syntax coloring: unrecognized options | Mathematica automatically highlights option names that do not apply where you have entered them.<br><br>`Plot[Sin[x], {x, 0, 10}, PlotArea → 100]` | ✗ |
| Syntax coloring: scoping conflicts | If you try to localize the same variable name twice, Mathematica highlights it to warn you.<br><br>`With[{local = 1}, With[{local = 2}, local]` | Parsing errors are reported in a dialog for code–edit regions only. |
| Syntax coloring: code comments | Comments are automatically colored gray so that they are easily distinguished from code.<br><br>`x = 2; (*Comment*)` | ✗ |
| Syntax coloring: string content | Strings are colored dark gray to distinguish them in your code.<br><br>`text = "some text"` | ✗ |
| Syntax coloring: current function | The start and end of the function immediately surrounding the cursor are highlighted automatically so that you can more clearly see where you are in complex nested expressions.<br><br>`Sin[x + Cos[x + 1] + Sin[x] +]` | ✗ |

| Syntax coloring: symbol uses | Click a symbol, and all other occurrences in the input are highlighted automatically. | ✗ |
|---|---|---|
| | ```
Module[{g1, emb, grp},
  g1 = RandomGraph[{10, 30}];
  emb = GraphEmbedding[g1];
  grp = GatherBy[emb, Last];
  emb = ReplaceAll[emb,
    Catenate[Catenate[Map[If[Length[#] == 1,
        Thread[# → #], Thread[# → (# - {{0, 0}, {0, 2.5}}
        Partition[SortBy[#, First], UpTo[2]]]] & /@ grp]];
  Graph[g1, VertexCoordinates → emb]
]
``` | |
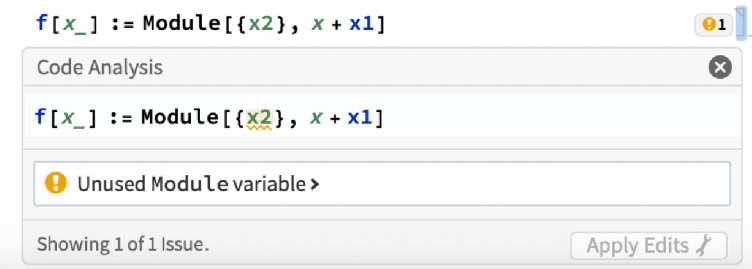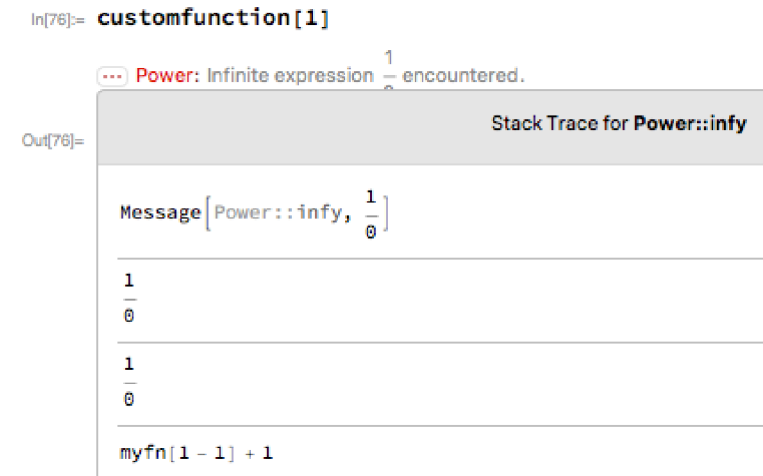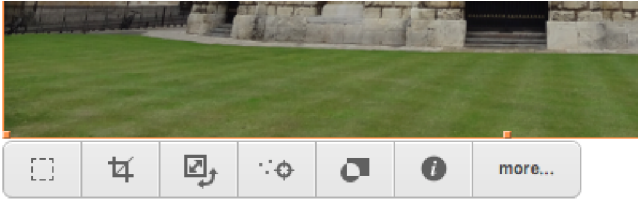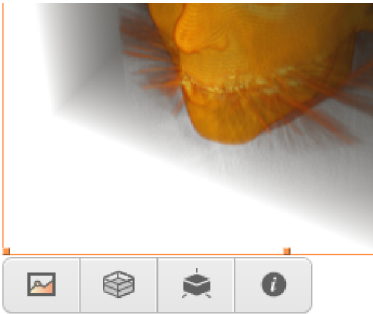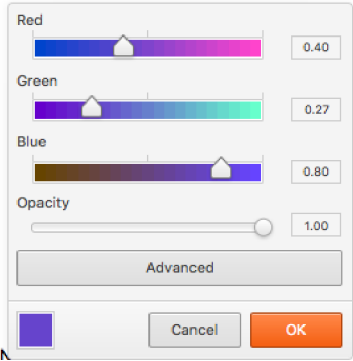| Document and expression diffs | See the differences between two revisions of a notebook or between two similar expressions with a choice of formats. | ✗ |
| Number formatting | Mathematica automatically displays long numbers with additional spacing between digit blocks to make them easier to read. **1 234 567 890** | ✗ |
| Real–time spellchecking | Mathematica automatically underlines misspelled words as soon as you have typed them. | In Maple, you must manually invoke spellchecking. |
| Visual hinting of computation dependency | Both Mathematica's and Maple's interfaces provide REPL interfaces where outputs are displayed alongside inputs. If you edit the input without reevaluating it so the output no longer matches, Mathematica warns you by automatically fading the out–of–date output. | ✗ |

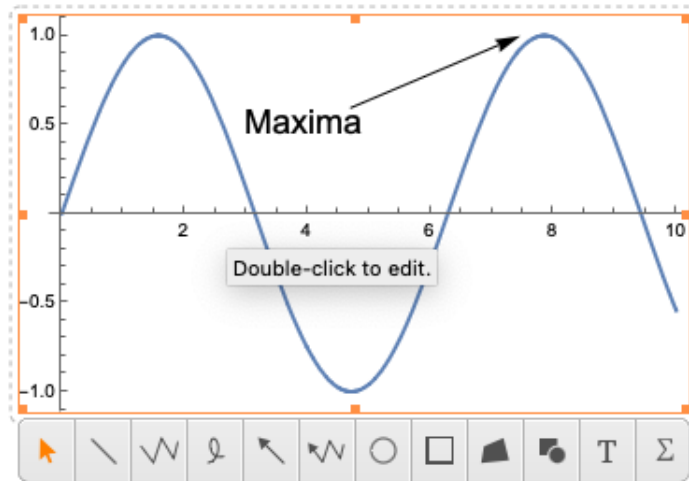| Code analysis | Select code in the notebook and Mathematica will analyze the code for potential errors. In some cases it will offer to correct the code automatically.<br><br> | Maple provides command line tools with similar analysis capabilities but not auto–correction. |
|---|---|---|
| Error source feedback | Error messages in Mathematica are accompanied by a "Stack Trace" button that displays information on the computational history that led to the error.<br><br> | ✗ |

# Interacting with output

| Mathematica | Details | Maple |
|---|---|---|
| Previous result reference: temporal | Use the symbol % to refer to the last answer produced. Use %% to refer to the result two calculations ago and so on,  or %$n$ for the $n^{th}$ result in the session.<br><br>In[1]:= 2 + 2<br>Out[1]= 4<br><br>In[2]:= % + 1<br>Out[2]= 5 | ✓ |

| | | |
|---|---|---|
| Previous result reference: spatial | Reference previous calculations by notebook position rather than order of creation, so that changes in value in future evaluations are respected, but changes in evaluation order do not cause failure.<br><br>In[1]:= **2 + 2**<br><br>Out[1]= 4<br><br>In[2]:= **% + 1**<br><br>Out[2]= 5 | ✗ |
| Image editor | Click any image in Mathematica, and a toolbar automatically appears providing point–and–click tools for selecting regions, cropping, transforming, masking, image information and more.<br><br> | ✗ |
| Image editor 3D | Click a 3D image (voxel data), and a toolbar appears providing point–and–click tools for coloring, clipping, information and more.<br><br> | Maple does not support 3D images. |
| Color swatches | Colors appear as visual swatches. Mouse over them for numeric specification, or click them to interact with the values.<br><br>In[5]:= **Blend[{Darker[Red], Lighter[Blue]}, 0.8]**<br><br>Out[5]=<br><br> | ✗ |

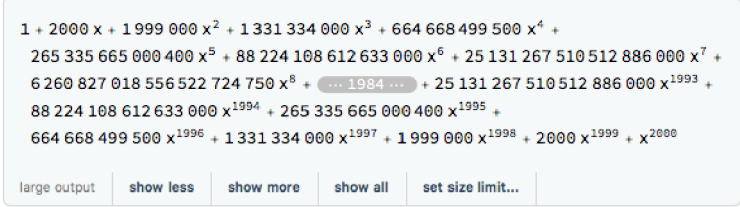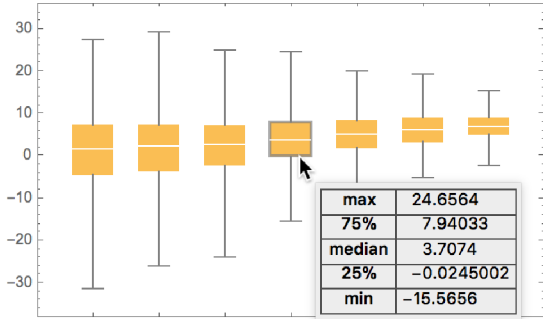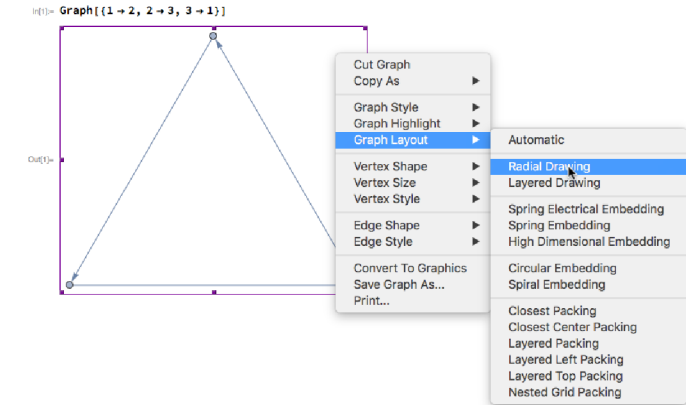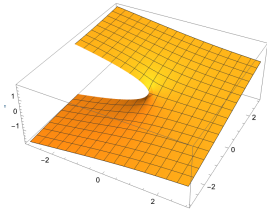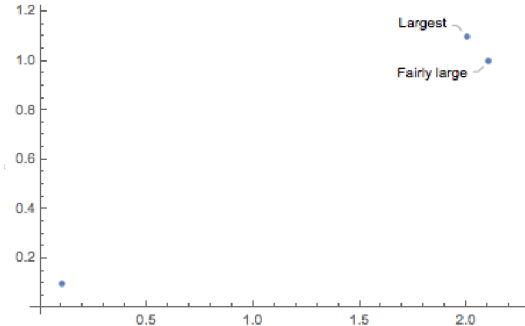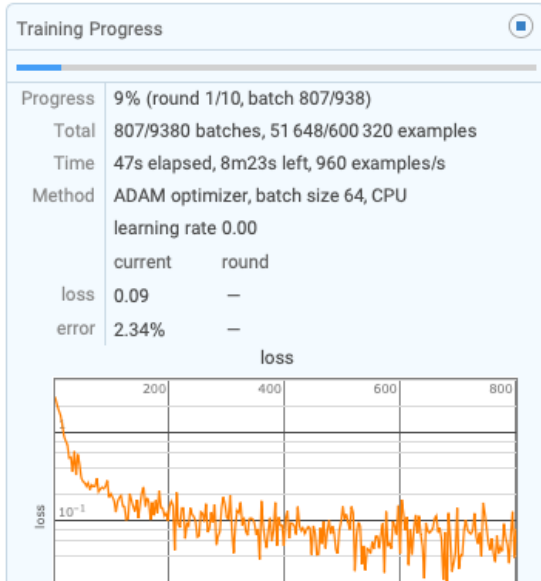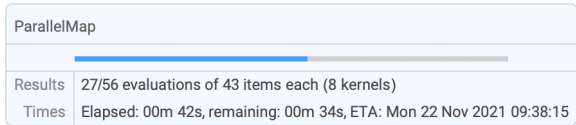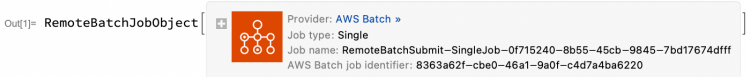| | | |
|---|---|---|
| Drawing tools | You can manually annotate graphics and edit generated graphics elements in Mathematica using a drawing tools palette.<br><br>`= Plot[Sin[x], {x, 0, 10}]`<br><br> | ✓ |
| Elided forms | Many computations return complex results that are intended as inputs for further computation.<br><br>Mathematica provides a uniform way to present the key information for these while hiding excess details. For large expressions, you can decide whether all information necessary to repeat the computation is stored in the elided display, automatically linked to a cloud or local storage object or discarded.<br><br> | Maple provides similar functionality for arrays, audio and graphs only. When Maple presents summary displays, the information to reproduce the output is discarded from the document. |

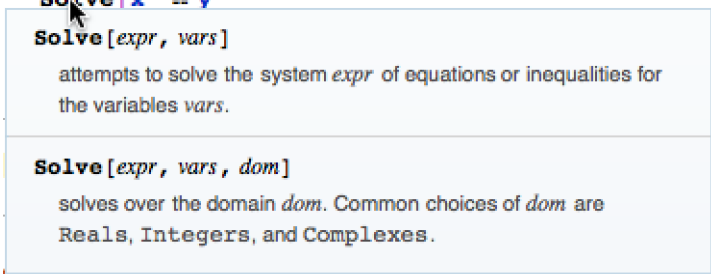| Mathematica | Details | Maple |
|---|---|---|
| Large–output suppression | When any very large expression is returned to the notebook, Mathematica automatically presents a compact view that displays the start and end of the expression and an indication of the amount of omitted content. The following example would take around 300 pages to fully display.<br><br>$\text{Expand}\left[(1+x)^{2000}\right]$<br><br>$1 + 2000\,x + 1\,999\,000\,x^2 + 1\,331\,334\,000\,x^3 + 664\,668\,499\,500\,x^4 +$<br>$265\,335\,665\,000\,400\,x^5 + 88\,224\,108\,612\,633\,000\,x^6 + 25\,131\,267\,510\,512\,886\,000\,x^7 +$<br>$6\,260\,827\,018\,556\,522\,724\,750\,x^8 + \cdots 1984 \cdots + 25\,131\,267\,510\,512\,886\,000\,x^{1993} +$<br>$88\,224\,108\,612\,633\,000\,x^{1994} + 265\,335\,665\,000\,400\,x^{1995} +$<br>$664\,668\,499\,500\,x^{1996} + 1\,331\,334\,000\,x^{1997} + 1\,999\,000\,x^{1998} + 2000\,x^{1999} + x^{2000}$<br><br>large output    show less    show more    show all    set size limit... | ✗ |
| Tooltips in graphics | Mathematica graphics incorporate tooltips to provide extra information without increasing the complexity of the image. For example, mouse over a box in a box–whisker plot, and you get statistics on that dataset.<br><br>| max | 24.6564 |<br>| 75% | 7.94033 |<br>| median | 3.7074 |<br>| 25% | −0.0245002 |<br>| min | −15.5656 | | ✗ |
| Context–sensitive menus | The menu that appears when you right–click content depends on the type of content selected.<br><br>$\text{In[1]:= Graph}[\{1 \rightarrow 2,\ 2 \rightarrow 3,\ 3 \rightarrow 1\}]$ | ✓ |

# Automation & convenience

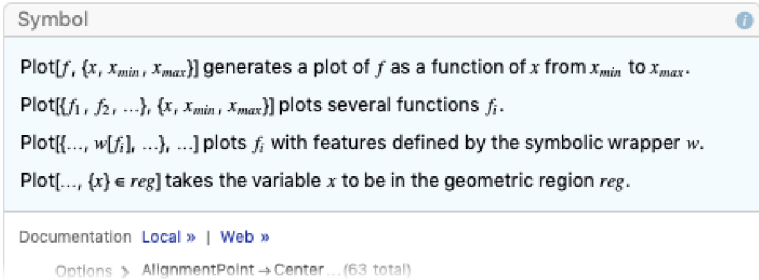| Mathematica | Details | Maple |
|---|---|---|
| Predefined document styles | Mathematica provides over 20 document stylesheets that collect together coherent style choices for title, section, text, math, etc. to let you create a great–looking document quickly. You can also create your own stylesheet. | Maple provides only one stylesheet, though you can create your own. |

| Mathematica | Details | Maple |
|---|---|---|
| Predefined graphics styles | Mathematica provides a collection of predefined styles as an alternative to setting all of the different options separately.<br><br>`Row[Plot[Evaluate[Table[BesselJ[n, x], {n, 5}]], {x, 0, 10}, PlotTheme → #] & /@ {"Detailed", "Web", "Monochrome"}]` | ✖ |
| Predefined color schemes | Mathematica provides over 170 named color gradients and collections that can be applied to most visualizations.<br><br>`Plot3D[Sin[x + Sin[y]], {x, 0, 8}, {y, 0, 8}, ColorFunction → "DeepSeaColors"]` | ✖ |
| Automatic hyperlinking | Mathematica automatically converts URLs in text into active hyperlinks. | ✖ |
| Automatic reference tracking | Mathematica provides counter objects that track the position of themselves or other content in the notebook to display correct numbering. Objects include Chapter, Section, Subsection, PageNumber and more. | Maple supports only for Equations and Tables. |
| Automatic code formatting | Mathematica can automatically reformat code using additional line breaks and white space to indent code for easy reading. You can control the balance between code density and "airiness." | ✖ |
| Alternate language cells | Mathematica notebooks can contain Python, SQL, Julia, R, Octave, Ruby or Node.js code cells. Results are automatically converted to Wolfram Language representations. | ✖ |
| TeX input | Enter TeX directly into notebooks, and it is formatted immediately using the Wolfram Notebook typesetting. | You must use code to import T$_E$X into Maple. |
| Plotting: automatic range selection | Mathematica plots can automatically choose their plot ranges to ensure that the majority of the plot yields useful information. | Maple provides this functionality only for 2D plots. |
| Plotting: automatic resampling | Mathematica adaptively increases sampling in 2D and 3D plots in areas of high curvature to give accurate yet efficient visualizations. | Maple supports this in 2D only |

| Mathematica | Details | Maple |
|---|---|---|
| Plotting: automatic branch–cut detection | Mathematica automatically detects discontinuities in many plots to accurately depict the break.<br><br>`Plot3D[Im[(x+I y)^0.5], {x, -3, 3}, {y, -3, 3}]`<br> | Maple provides this functionality only for 2D plots. |
| Plotting: automatic point sizing | By default, Mathematica automatically makes some features, such as points, smaller if there are many of them in a single visualization. | ✕ |
| Plotting: automatic point label positioning | Mathematica can use symbolic wrappers for data points to automatically place labels, callouts or tooltips on plotted points, automatically optimizing their locations to avoid overlap.<br><br>`ListPlot[{{0.1, 0.1}, Callout[{2, 1.1}, "Largest"],`<br>`   Callout[{2.1, 1}, "Fairly large"]}]`<br> | ✕ |
| Automatic import filters | Mathematica supports over 250 different import and export filters for data, images, sound, video, graphs, geometry and more. | Maple supports 56 formats. |
| Progress monitoring | Some slow operations, such as training neural networks, provide progress indicators and estimates of completion time.<br><br>`NetTrain[NetModel["LeNet"], "MNIST"]`<br> | ✕ |

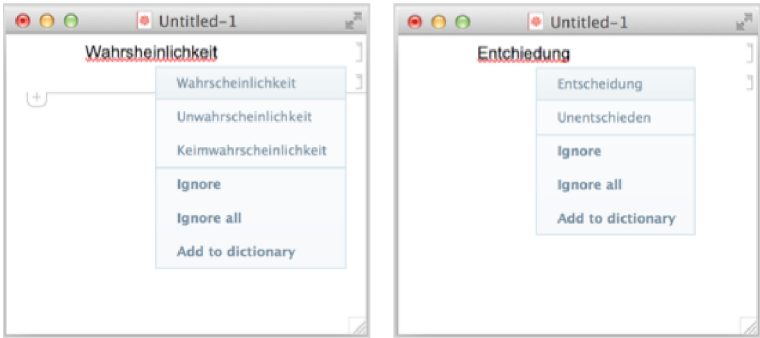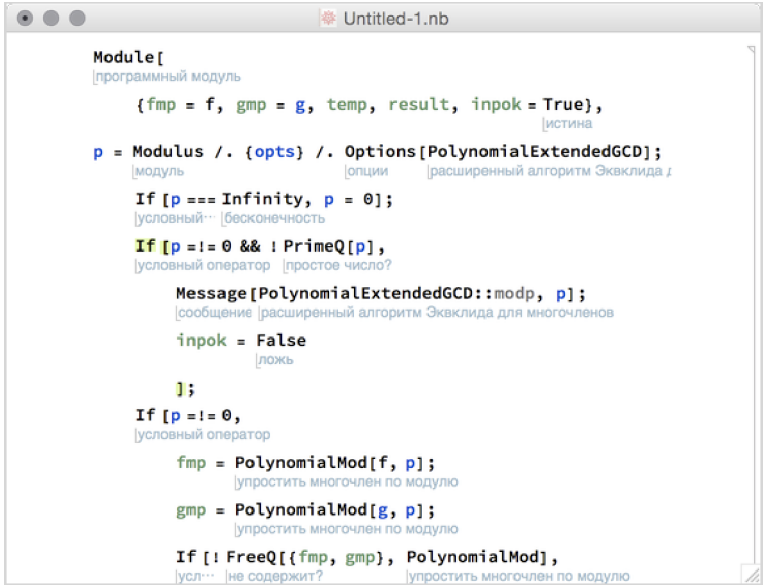| Mathematica | Details | Maple |
|---|---|---|
| Parallel evaluation progress tracking | When performing parallel computations over multiple cores or remote computers, you can see the progress made and the projected completion time.<br><br>In[1]:= `ParallelMap[PrimeQ[2^# - 1] &, Range[9601, 12 000]];`<br>During evaluation of In[1]:=<br><br>ParallelMap<br>Results 27/56 evaluations of 43 items each (8 kernels)<br>Times Elapsed: 00m 42s, remaining: 00m 34s, ETA: Mon 22 Nov 2021 09:38:15 | ✗ |
| Remote batch submission | Once set up with account credentials, Mathematica automates the process of submitting batch evaluations in cloud environments such as Amazon and Azure. Cloud computers are provisioned and provided with Mathematica licenses: tasks are scheduled, results retrieved and instances deleted all with a single command.<br><br>In[1]:= `job = RemoteBatchSubmit[`<br>`    RemoteBatchSubmissionEnvironment["AWSBatch", ...] +,`<br>`    2 + 2`<br>`]`<br><br>Out[1]= `RemoteBatchJobObject[` Provider: AWS Batch »<br>Job type: Single<br>Job name: RemoteBatchSubmit-SingleJob-0f715240-8b55-45cb-9845-7bd17674dfff<br>AWS Batch job identifier: 8363a62f-cbe0-46a1-9a0f-c4d7a4ba6220 `]`<br><br>In[2]:= `job["EvaluationResult"]`<br>Out[2]= 4 | ✗ |

# Help

| Mathematica | Details | Maple |
|---|---|---|
| Evaluatable help | Mathematica help contains over 10,000 examples. The help also acts as a sandbox where you can edit and experiment with the examples in situ, without changing them permanently. | ✗ |
| Suggestion Bar | Mathematica automatically suggests calculations you may wish to perform next after each calculation. Just click to perform the action. You can even roll together several steps to automatically write programs.<br><br>Out[12]= {0.470063, 0.150947, 0.43559, 0.805856,<br>0.312563, 0.482064, 0.663087, 0.507534, 0.609561, 0.271254}<br><br>total  plot points ▼  histogram  sort  more... | ✓ |
| Mouseover help box | Mouse over a command in Mathematica and see a tooltip reminding you what the function does and its typical arguments.<br><br>`Solve[x^2 == y`<br><br>`Solve[expr, vars]`<br>attempts to solve the system *expr* of equations or inequalities for the variables *vars*.<br><br>`Solve[expr, vars, dom]`<br>solves over the domain *dom*. Common choices of *dom* are Reals, Integers, and Complexes. | ✗ |

| Mathematica | Details | Maple |
|---|---|---|
| Help on errors | When an error is generated, it includes a hyperlink to documentation on the error, including example causes.<br><br> | ❌ |
| Command–line help | Evaluating **?name** returns help on **name** without leaving the working notebook. Mathematica displays information in an expandable form that organizes basic definitions, options and attributes with links to the full documentation.<br><br>**?Plot**<br><br> | ✔️ |
| Natural language input | Type a short English phrase and have Wolfram\|Alpha translate it into a Wolfram Language expression.<br><br><br><br>You can even do it in the middle of an expression—for example, to choose the right unit names.<br><br> | ❌ |

| Mathematica | Details | Maple |
|---|---|---|
| Readable function names | While good programming–language design is too complex to summarize in this document, one simple aspect can be seen in the choice of function names. Mathematica uses a consistent set of naming conventions for its functions, mostly using full English words like `FactorInteger`, `LinearProgramming`, `Integrate`, `Counts`, `ContinuedFraction` and `Gamma`, making code readable and names easier to predict.<br><br>Maple follows this convention for recently added functions, but most of its older functionality is inconsistent in the use of case and abbreviation, making it harder to learn and remember. For example, the Maple equivalents to the above functions are called `ifactor`, `LPSolve`, `Int`, `numboccur`, `cfrac` and `GAMMA`. | |

# International support

| Mathematica | Details | Maple |
|---|---|---|
| Local language spellchecking | Mathematica provides real–time spellchecking in over 25 languages.<br><br> | Maple has English spellchecking only, and it isn't in real time. |
| Code captions | Mathematica can automatically display captions over code to clarify its meaning in 12 different languages.<br><br> | ✗ |

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