Installing and loading packages for
*Essentials of Programming in Mathematica* (EPM)

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**Author website:** [www.programmingmathematica.com](http://www.programmingmathematica.com) (link above)

**Functionality:** instructions to install and load EPM packages

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**What is included**

The EPM archive includes notebooks, packages, and data files all in support of the material in the book proper. The following is a listing showing the directory structure and contents of the archive. The two columns give the name of the file and its size (in bytes).

```mathematica
```

**Packages**

<table>
<thead>
<tr>
<th>File</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collatz.m</td>
<td>2472</td>
</tr>
<tr>
<td>EPM.m</td>
<td>1050</td>
</tr>
<tr>
<td>Functions.m</td>
<td>15071</td>
</tr>
<tr>
<td>Graphics.m</td>
<td>17098</td>
</tr>
<tr>
<td>Introduction.m</td>
<td>3970</td>
</tr>
<tr>
<td>Language.m</td>
<td>4464</td>
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<tr>
<td>Lists.m</td>
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<tr>
<td>Optimization.m</td>
<td>3471</td>
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<tr>
<td>Patterns.m</td>
<td>5043</td>
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<tr>
<td>Programs.m</td>
<td>13010</td>
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<tr>
<td>RandomWalks.m</td>
<td>7032</td>
</tr>
<tr>
<td>StemPlots.m</td>
<td>2196</td>
</tr>
<tr>
<td>Strings.m</td>
<td>14850</td>
</tr>
</tbody>
</table>

Notebooks
Collatz.nb  9936
EPMPackagesReadMe.nb  2357338
Functions.nb  66787
Graphics.nb  86645
Introduction.nb  15610
Language.nb  19423
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LoadingPackages.nb  8707
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Programs.nb  91973
RandomWalks.nb  31373
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Strings.nb  59640

Data
5hydroxytryptamine.sdf  4446
bivariatedata.xlsx  3905
CResevoir.csv  387
collectorData.dat  174805
gistempland.csv  1473
H5N1ChickenDQ023146.1.fasta  1644
H5N1DuckDQ232610.1.fasta  1681
lew.dat  1398
ltryptophan.sdf  4776
signal.dat  22376
spikedata.csv  3743
StopWords.dat  4224

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Installing packages

Package location

The packages and other files that come the EPM archive should be placed in one of several special locations on your computer. It is important not to change the structure of the files and directories inside of the EPM directory as package loading, access to data files, stylesheets, and other functionality will be affected.

You can install the packages manually or using the Mathematica front end interface. To do the latter, first unpack the .zip archive that you downloaded and note the location of the resulting EPM folder/directory. Then, in Mathematica, go to File ► Install... and in the resulting dialog, select Package as the type of item to install; the Source will be From File after which you will need to use your system’s finder to locate it; finally, the Install Name should be EPM.
Alternatively, you can drag and drop the EPM archive. Instructions follow and depend upon whether you have administrative rights to your entire computer or not.
Here is where you should drop the EPM directory/folder if you have administrative privileges on your computer and wish to make the packages available to any user on your computer:

```
FileNameJoin[{$BaseDirectory, "Applications"}]
/Library/Mathematica/Applications
```

To install the package in a user-specific directory, locate it here (where “wellin” will be replaced with your login name):

```
FileNameJoin[{$UserBaseDirectory, "Applications"}]
/Users/wellin/Library/Mathematica/Applications
```

Once you have installed the packages, you can check that they are in the correct location by evaluating `FindFile`. Actually, this shows the location of the Kernel/init.m file inside the PwM archive, but that should be sufficient.

```
FindFile["EPM`
/Users/paulwellin/Library/Mathematica/Applications/EPM/Kernel/init.m
```

### Loading packages

This loads all packages associated with EPM.

```
In[1]:= << EPM`
```

This lists all the currently loaded packages:

```
In[2]:= $Packages
```

Here is a list of the functions defined in the packages that begin with the letter F:

```
In[3]:= Names["EPM`F*"]
Out[3]= {FibonacciWord, FilterText, FindPercolationPath, FindSubsequence, FindWordsContaining, FixArray, FunctionsWithAttribute, FunctionsWithOption}
```

```
In[5]:= ? EPM`F*
```

```
\n\n\nFibonacciWord & FindSubsequence & FunctionsWithAttribute
FilterText & FindWordsContaining & FunctionsWithOption
FindPercolationPath & FixArray

\n```

This gives the usage message for one of the above functions.

```
In[4]:= ? FunctionsWithAttribute
```

```
FunctionsWithAttribute[attr] returns a list of all symbols in the System` context that have the attribute \texttt{attr}.
```

```
And this evaluates the function.

\textbf{FunctionsWithAttribute[Constant]}

{Catalan, ChampernowneNumber, Degree, E, EulerGamma, Glaisher, GoldenRatio, Khinchin, MachinePrecision, Pi}