

How to make a package in Mathematica

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This is a description of making a simple package in Mathematica. I show how to create a package which contains one function and how to save it and load it. Then show how to update the package by adding a second function.

Each time a new function is added, the package needs to be reloaded.

This note is not meant by any means to be comprehensive, but an attempt to give someone who is new at using Mathematica the minimal set of commands to make a basic package.

More details about packages can be found in Mathematica help pages.

1. Open a new notebook, and write in it the following code in one cell.

```
BeginPackage["foo`"]
Unprotect @@ Names["foo`*"];
ClearAll @@ Names["foo`*"];

f::usage = "f[x]"
Begin["`Private`"]

f[x_] := Module[{}, x^2];

End[]
Protect @@ Names["foo`*"];
EndPackage[]
```

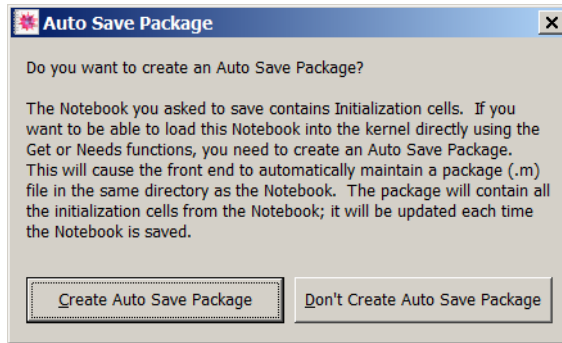
2. Select the cell. Then change the cell to become an initialization cell as follows:

```
Cell->Cell Properties->Initialization Cell.
```

3. Now save the notebook. Select Save As and assume you want to save it as

```
C:\mydata\foo.nb
```

A pop-up menu will now ask you about an AUTO SAVE choice, this will happen just before the save is completed, there will be 2 choices, select the LEFT option by clicking on it.



Now that package is saved. You can close the file foo.nb.

4. To use the function $f[x]$ defined in the package, load the package as follows (this is one easy way to load the package, there are other ways).

```
Get["c:\\mydata\\foo.m"]
```

Notice the name used above, it is foo.m and not foo.nb, and note the path with the 2 slashes. Now, the package is loaded and you can call the $f[x]$ function like this:

```
f[2]
```

Or by explicitly pre-appending the package name to the function as follows (this is not necessary, but I find it useful to let me know which package the function belongs to especially when I have many different packages loaded at the same time).

```
foo'f[2]
```

5. To add a second function, say $g[x]$ to the package, open foo.nb again, and change it to look as follows:

```
BeginPackage["foo'"]
Unprotect @@ Names["foo'*"];
ClearAll @@ Names["foo'*"];

f::usage = "f[x]"
g::usage = "g[x]"
Begin["'Private'"]

f[x_] := Module[{}, x^2];
g[x_] := Module[{}, x^4];

End[]
Protect @@ Names["foo'*"];
EndPackage[]
```

Now save the file foo.nb. Notice that now Mathematica will not ask again about the Auto Save option. This question is only asked the first time.

6. Close foo.nb. To use the new function added to the package need to reload the package again:

```
Get["c:\\mydata\\foo.m"]
```

7. To see which functions in your package type

```
?foo'*
```

That is all. To add more functions, repeat the above 3 steps.

I'd like to thank Bill Rowe and Istvan Zachar on the Math newsgroup for helpfull suggestions while working on this note.