

Files, scripts and functions

2011

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Information

“Information is nothing if we cannot save it”

Octave

```
save statefile  
load statefile
```

Saves and loads the state of Octave
(variables, etc.) to a file called 'statefile'

Within Octave

Saving and loading within Octave

Octave

```
save statefile  
load statefile
```

Saves and loads the state of Octave (variables, etc.) to a file called 'statefile'

Octave

```
save statefile x  
load statefile x
```

Saves and loads the variable x to and from a file called 'statefile'

Formatted data

Saving and loading data to and from other sources

Octave

```
fopen  
fclose  
fprintf  
fscanf  
feof
```

Open a file

Close a file

Formatted output to file

Formatted input from file

End of file? (No more information available?)

Formatted data

Saving and loading data to and from other sources

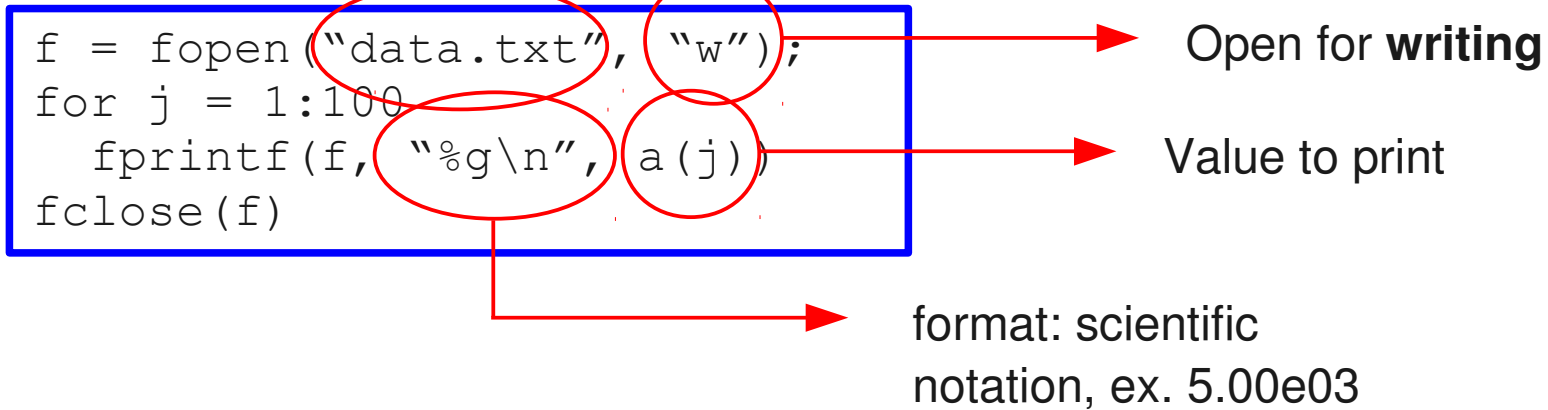
Octave

```
f = fopen("data.txt", "w");  
for j = 1:100  
    fprintf(f, "%g\n", a(j))  
fclose(f)
```

Formatted data

Saving and loading data to and from other sources

Octave



Formatted data

Saving and loading data to and from other sources

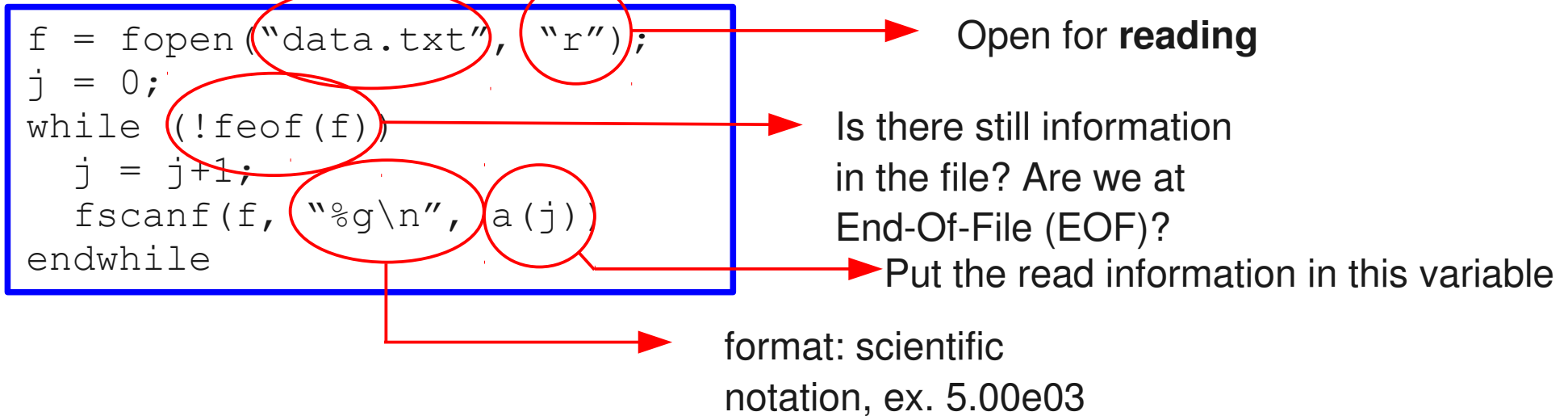
Octave

```
f = fopen("data.txt", "r");  
j = 0;  
while (!feof(f))  
    j = j+1;  
    fscanf(f, "%g\n", a(j))  
endwhile
```

Formatted data

Saving and loading data to and from other sources

Octave



Scripts

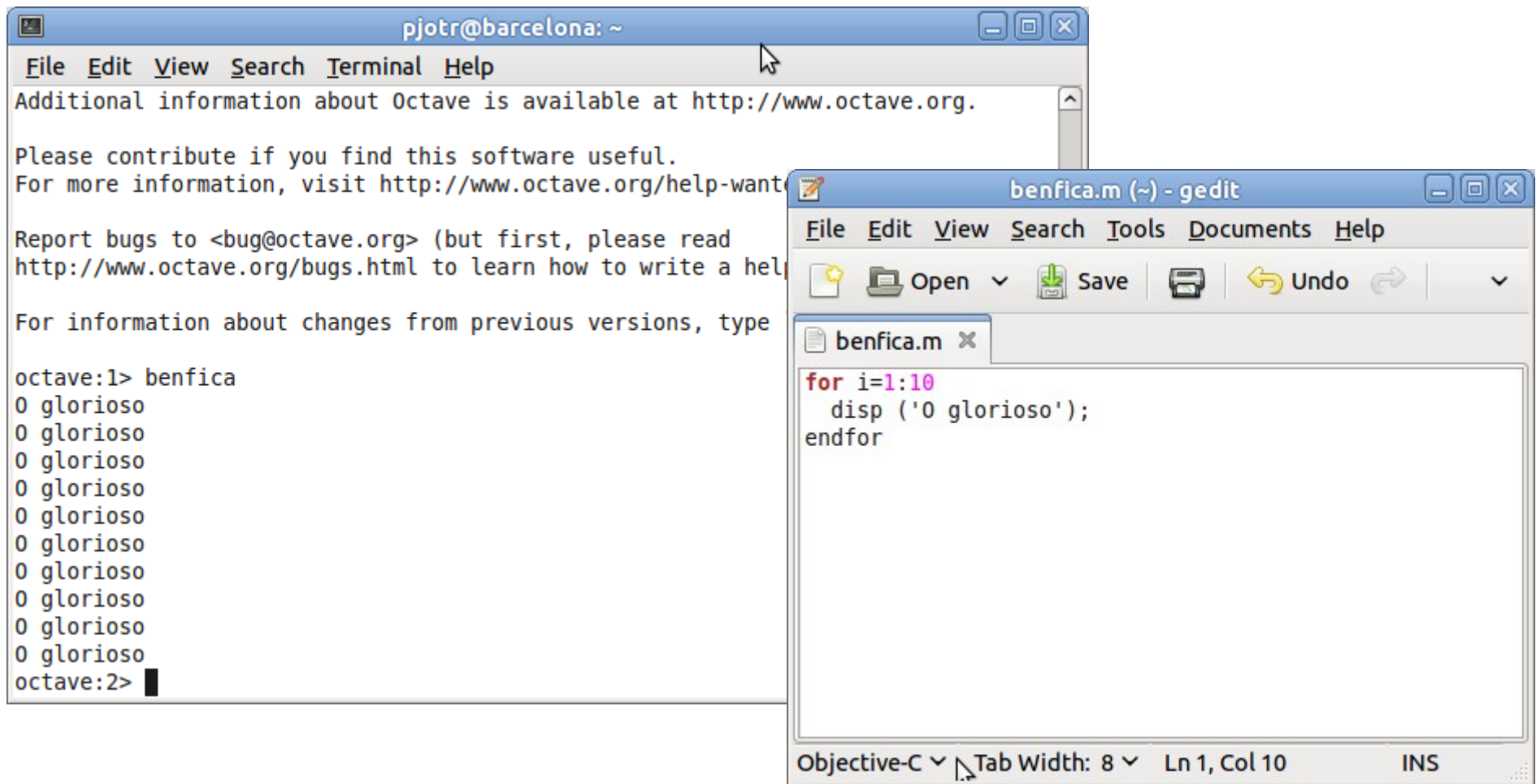
Saving Octave code we can do in files ending with '.m'

These files are called 'scripts' (uncompiled program code)

After saving the code in the file we can 'call' it from (anywhere) within Octave. Also from other scripts

Scripts

Example



The image shows two overlapping windows. The background window is a terminal titled 'pjotr@barcelona: ~'. It displays the Octave startup screen with a menu (File, Edit, View, Search, Terminal, Help) and several lines of text providing information about Octave, including a URL for more information and instructions on how to report bugs. The terminal shows the command 'octave:1> benfica' being executed, resulting in ten lines of output: '0 glorioso'. The prompt 'octave:2>' is visible at the bottom.

The foreground window is a gedit editor titled 'benfica.m (~) - gedit'. It shows the source code for the 'benfica.m' script. The code consists of a for loop that iterates from 1 to 10, displaying the string '0 glorioso' on each iteration. The editor has a menu (File, Edit, View, Search, Tools, Documents, Help) and a toolbar with icons for Open, Save, and Undo. The status bar at the bottom indicates 'Objective-C', 'Tab Width: 8', 'Ln 1, Col 10', and 'INS'.

```
File Edit View Search Terminal Help
Additional information about Octave is available at http://www.octave.org.

Please contribute if you find this software useful.
For more information, visit http://www.octave.org/help-wanted.html

Report bugs to <bug@octave.org> (but first, please read
http://www.octave.org/bugs.html to learn how to write a helpful
bug report.)

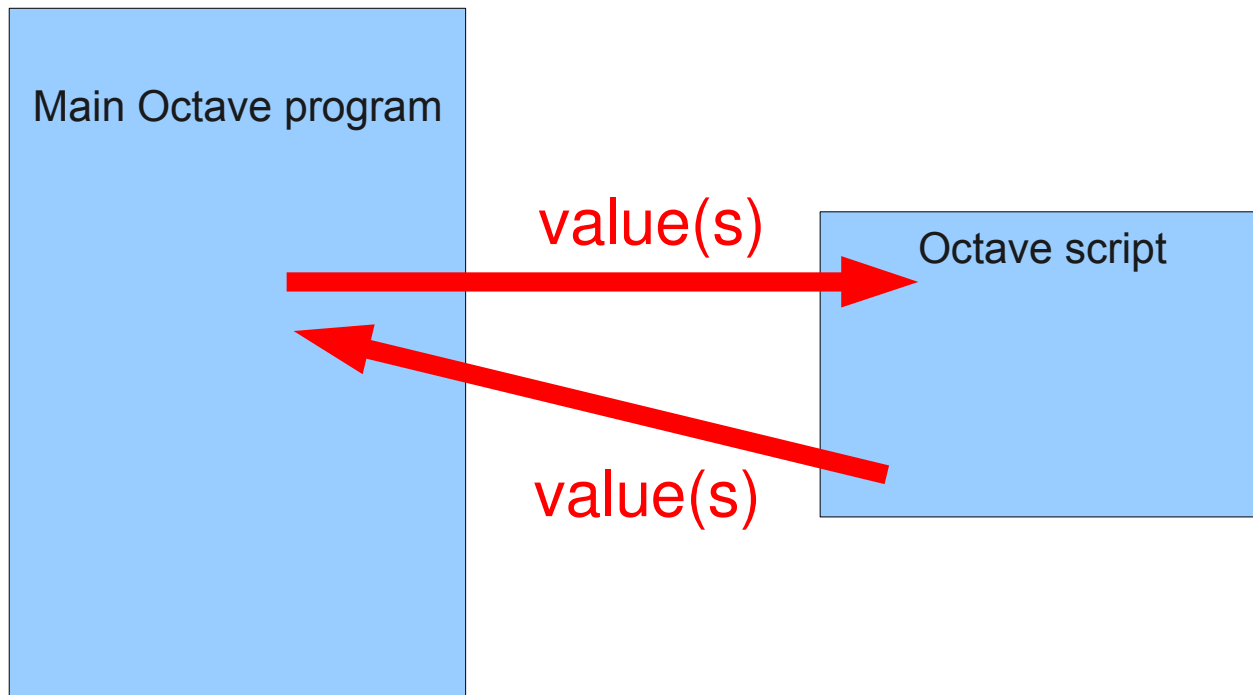
For information about changes from previous versions, type
'info'.

octave:1> benfica
0 glorioso
0 glorioso
0 glorioso
0 glorioso
0 glorioso
0 glorioso
0 glorioso
0 glorioso
0 glorioso
0 glorioso
0 glorioso
octave:2>
```

```
benfica.m (~) - gedit
File Edit View Search Tools Documents Help
Open Save Undo
benfica.m x
for i=1:10
    disp ('0 glorioso');
endfor
Objective-C Tab Width: 8 Ln 1, Col 10 INS
```

Functions

Functions are scripts that return a value or values



Functions

Example of a function script:

Main Octave program

```
octave:4> a = len('Ajax')  
0 glorioso  
a = 4  
octave:5>
```

Octave function script

len.m

```
function y = len(txt)  
    disp ('0 glorioso');  
    y = length(txt);  
endfunction
```

Note: The name of the function and the file should be the same (`len` in this case)