Demo

This is a simple demo for using Scilab engine in RMarkdown. Let's start, just to be sure that everythin is working, with matrix multiplication.

```
A = [1 2 3; 4 5 6; 7 8 9];
b = [1 5 25]';
A * b
```

```
##  ans  =
##
##    86.
##    179.
##    272.
```

Sometimes, we need to multiply two really big matrices; for this, we can update the timeout.

```
n = 2500;
A = rand(n, n);
B = rand(n, n);
tic()
A * B;
toc()
```

```
##  ans  =
##
##    12.680115
```

Now, let's say we define a matrix in some chunk:

```
A = [1 2 3; 4 5 6; 7 8 9];
spec(A)
```

```
##  ans  =
##
##    16.116844 + 0.i
##   -1.116844  + 0.i
##   -1.304D-15 + 0.i
```

And we want to reuse it in another chunk. For this, we can use `scilab_var` option.

```
max(abs(spec(A))) // dominant eigenvalue of A
```

```
##  ans  =
##
##    16.116844
```

However, one possibly needs to reuse functions and variables between chunks; writing them in one line in `scilab_var` could be really inconvenient. For this, the option `scilab_file` is available; one can load a file with whatever they want. The next chunk, for instance, compute the Fibonacci numbers with the Fibonacci function, written in Fibonacci.sci file.

```
fibo = [];
for i = 1:15 do fibo = [fibo Fibonacci(i)]; end
fibo
```

```
##  fibo  =
##
##          column 1 to 13
##
##    1.    1.    2.    3.    5.    8.    13.    21.    34.    55.    89.    144.    233.
##
##          column 14 to 15
##
##    377.    610.
```

That is it. It is also possibly use normally every functionality of RMarkdown (for example, LaTeX with tinytex, HTML and GitHub markdown)!