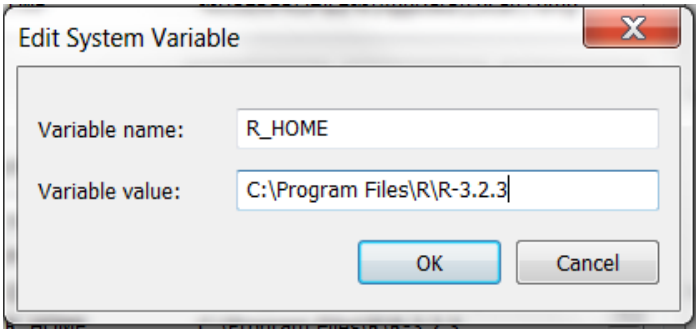
Installation of R-Extension (v1.4) on Windows - 64 bit for NetLogo 5.3 and R 3.2.3

1. **Download and install R 3.2.3** (http://cran.r-project.org/bin/windows/base/R-3.2.3-win.exe), target directory of the installation: C:\Program Files\R\R-3.2.3, Selected components: User installation, Startup options: No

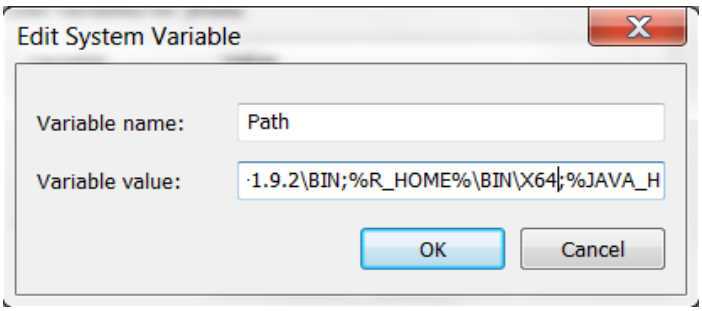
2. **Download and install NetLogo 5.3** (standard 64-bit bundled version with Java Runtime Environment) (http://ccl.northwestern.edu/netlogo/5.3/NetLogo-5.3-64.msi), Destination Directory of the installation: C:\Program Files\NetLogo 5.3

3. **Set environment variables for R**: an R.dll and R.exe should be found in C:\Program Files\R\R-3.2.3\bin\x64 (depends on the path in step 1),

Set at first the R_HOME variable to C:\Program Files\R\R-3.2.3.

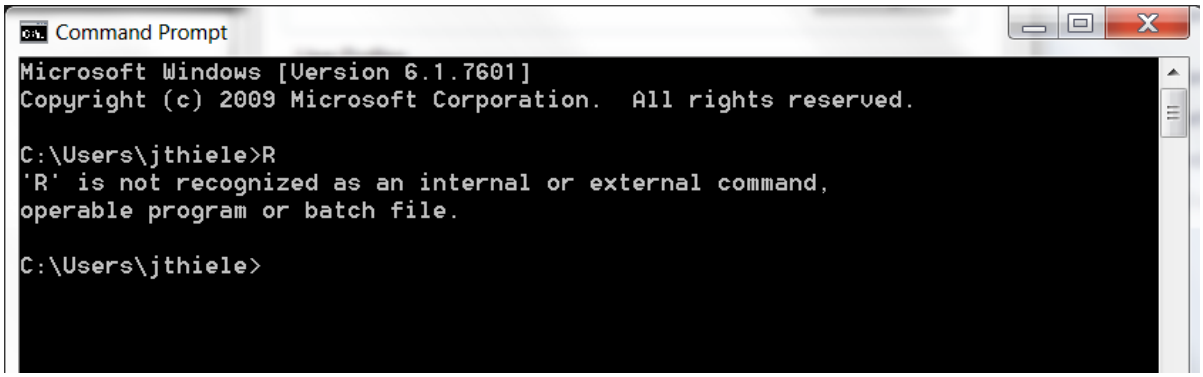


Now, append the PATH variable by %R_HOME%/bin/x64 (or directly by C:\Program Files\R\R-3.2.3\bin\x64).

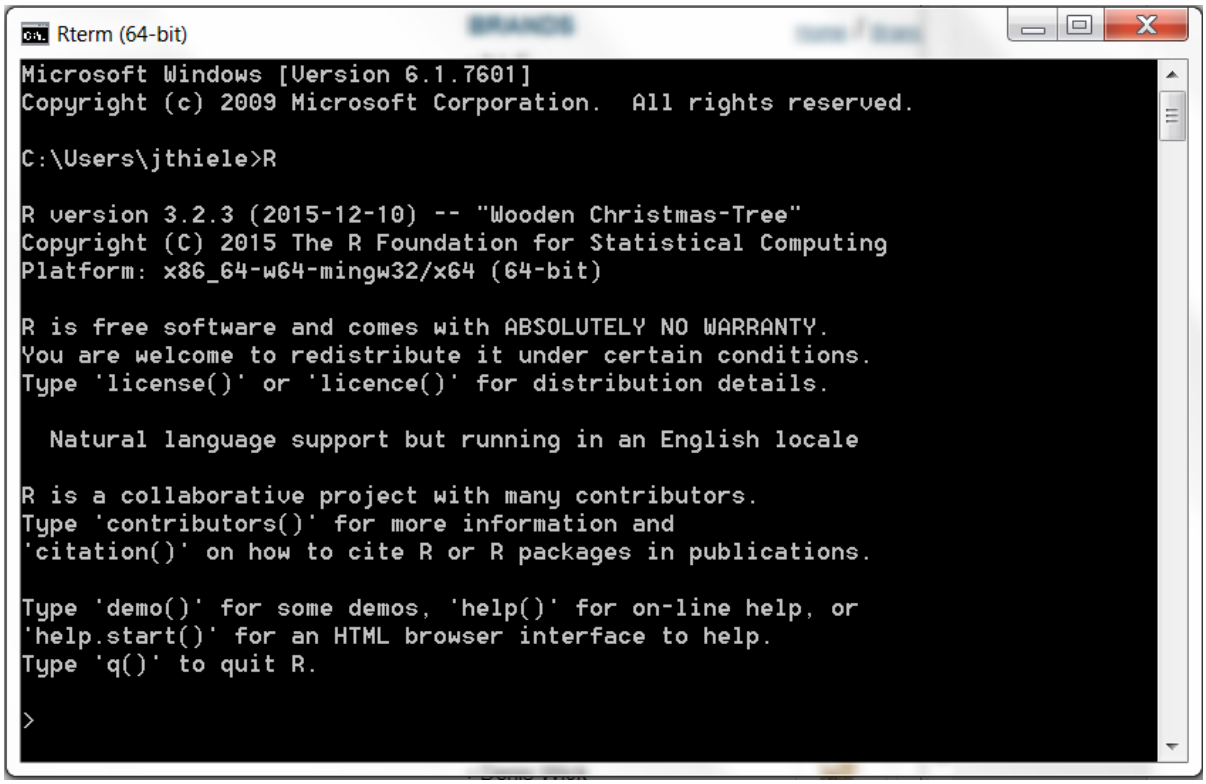


4. **Test the new environment variables** by opening a MS DOS prompt and type R.

If you this, your Path environment variable is wrong:



If the Rterm opens, everything until now went ok (don't forget to open a new MS DOS prompt after editing the environment variables):



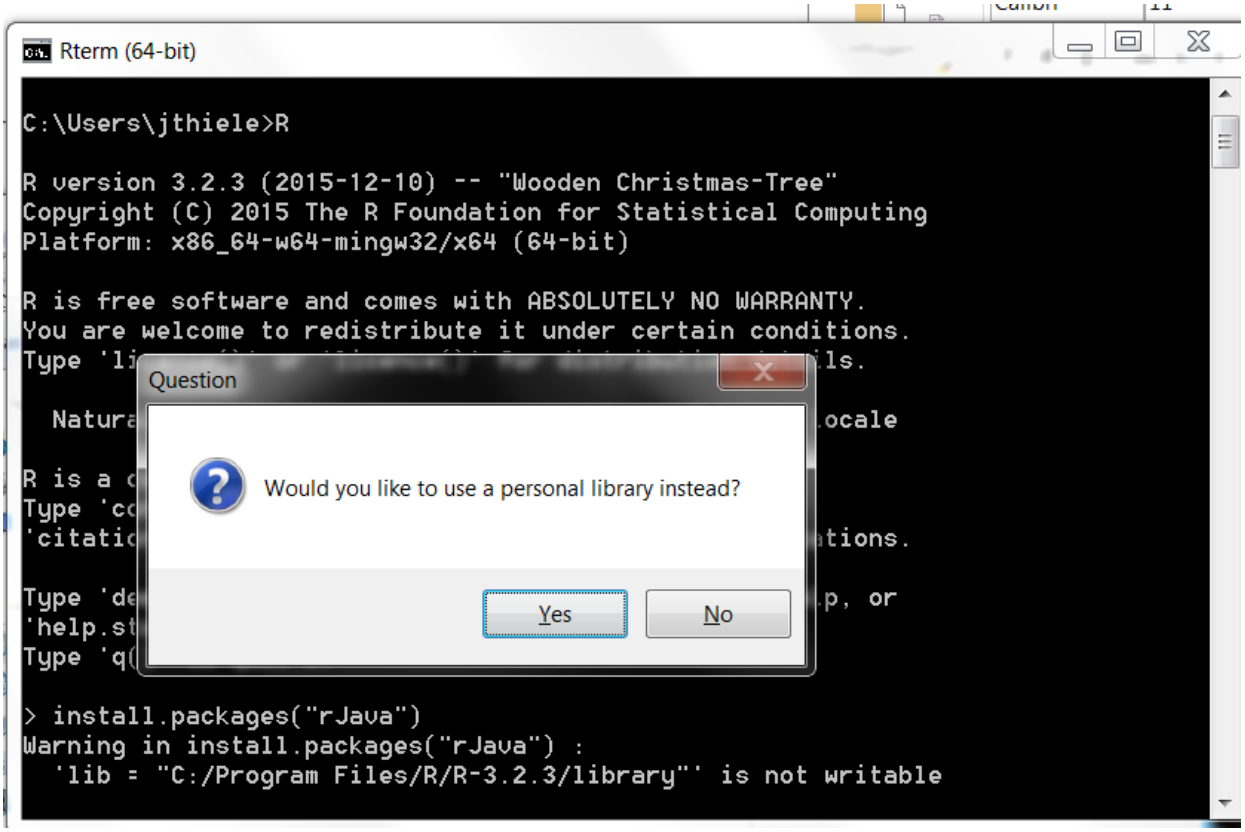
5**. Install rJava**.

Type into the open Rterm command line (make sure in the start up message of the Rterm there was written: *Platform: ... (**64-bit**)*):

install.packages("rJava")

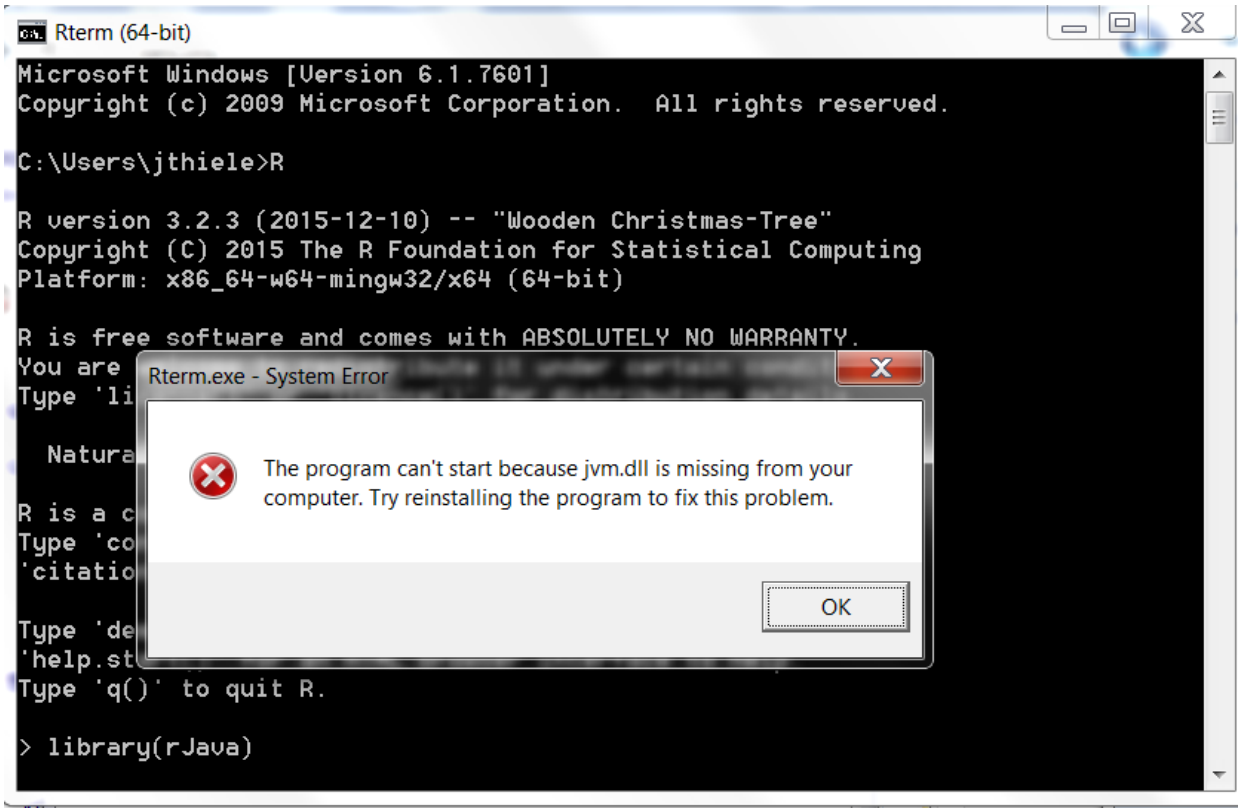
If you already installed the rJava package in 32-bit mode, please delete it first.

If you haven't started the MS DOS prompt as administrator you will be asked to create a personal library. Click "Yes" and keep the path given in mind. We will need it later (here it is C:\Users\jthiele\Documents\R\win-library\3.2):



6. **Try to load rJava**.

If you type in the Rterm *library(rJava)* and getting an error message that the *jvm.dll* cannot be found, go to step 7, otherwise go to step 9.

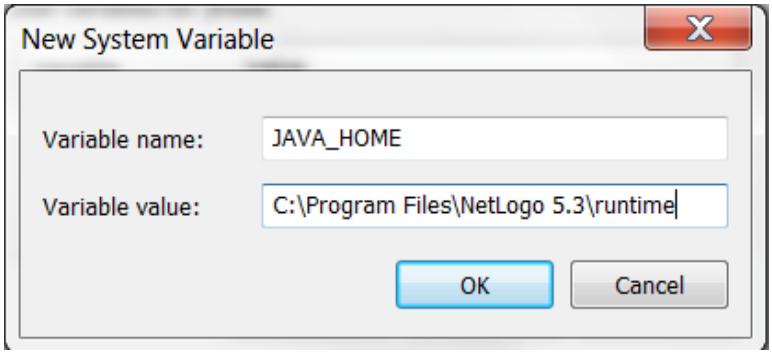


7. In case that **rJava cannot be loaded**:

The reason could be that the *JAVA_HOME* environment variable refers to a 32-bit Java (or no Java was found).

First, check if there is a *JAVA_HOME* environment variable. Then check, if you have a 64-bit Java installed (check your *C:\Program Files* folder for Java installations or use the Java bundled with NetLogo). If so, go to step 8.

8. Add/Change the *JAVA_HOME* environment variable with the path to the 64-bit Java (e.g. bundled with NetLogo).



Then, open a new MS DOS prompt and start the Rterm again. Type within the Rterm command line again

library(rJava). Should work now (means no error message is shown)!

9. See **which Java version is running with rJava**.

Type in the Rterm (after loading rJava: *library(rJava)*):

.jinit()

.jcall("java/lang/System", "S", "getProperty", "os.name")

.jcall("java/lang/System", "S", "getProperty", "os.arch")

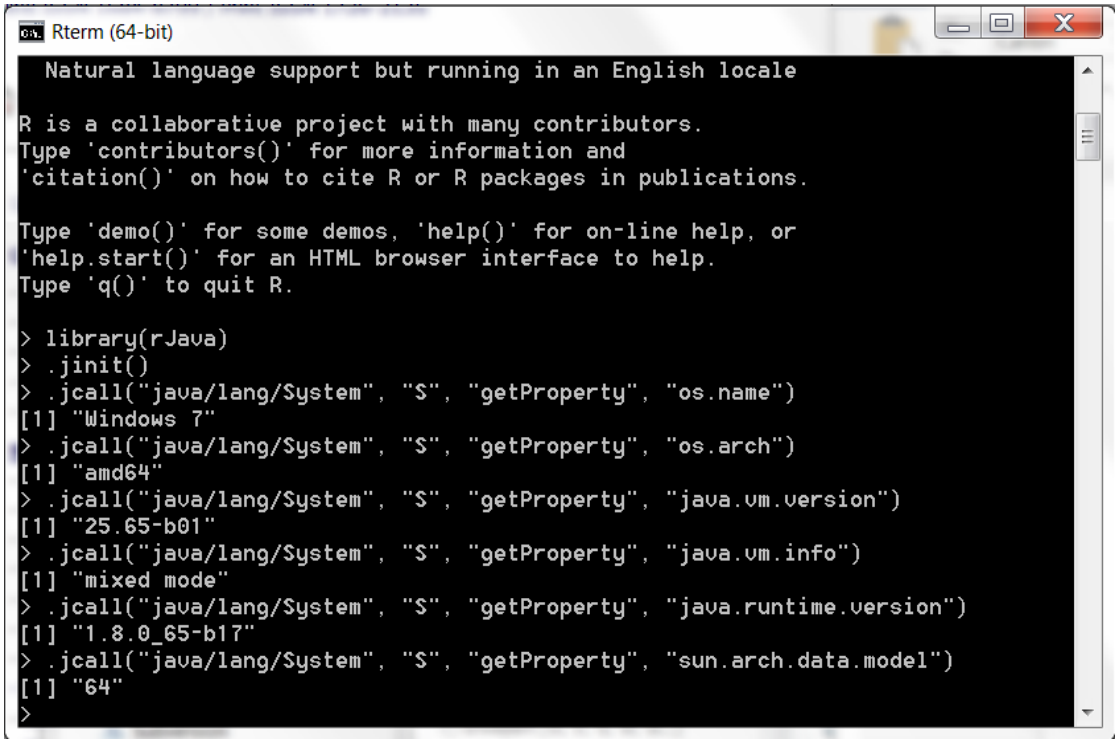
.jcall("java/lang/System", "S", "getProperty", "java.vm.version")

.jcall("java/lang/System", "S", "getProperty", "java.vm.name")

.jcall("java/lang/System", "S", "getProperty", "java.vm.info")

.jcall("java/lang/System", "S", "getProperty", "java.runtime.version")

.jcall("java/lang/System", "S", "getProperty", "sun.arch.data.model")



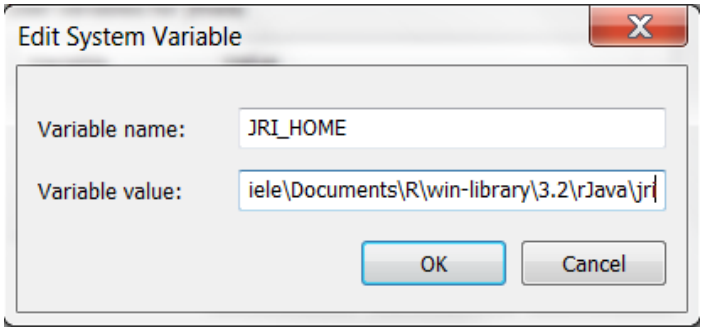
10. **Set JRI_HOME environment variable.**

Now, come back to the path you have in mind from step 5, the installation path of the rJava package.

Here, it was *C:\Users\jthiele\Documents\R\win-library\3.2*.

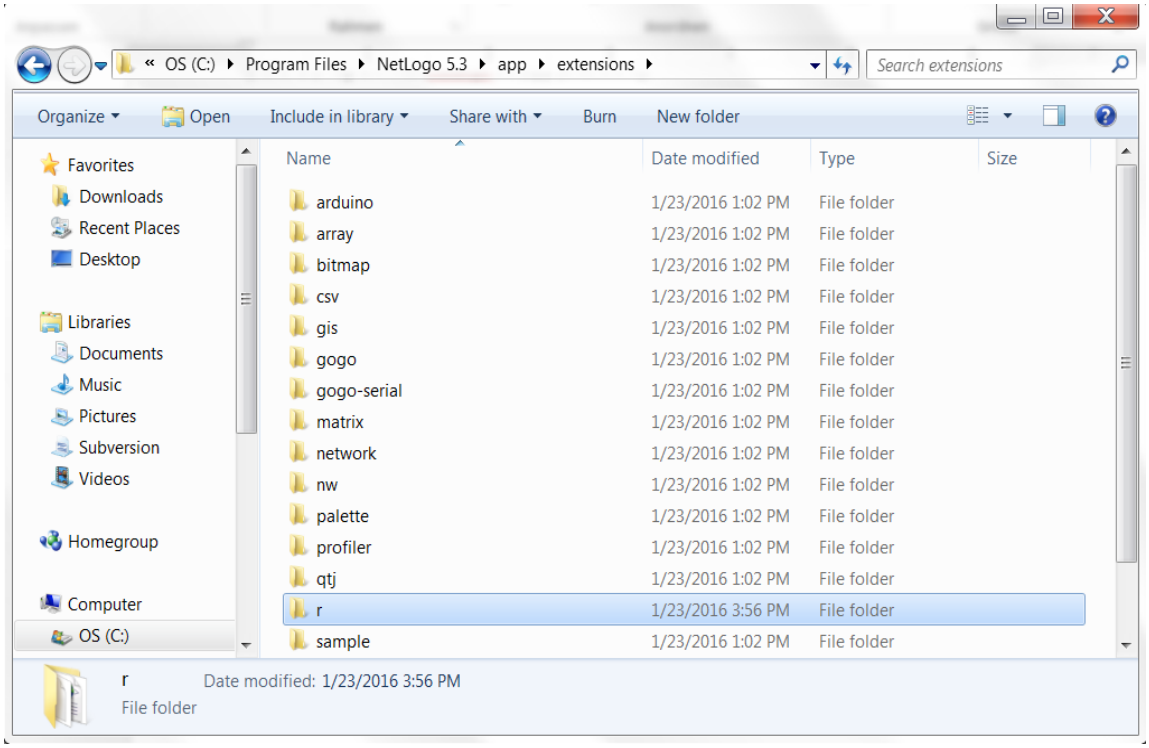
We will create a new environment variable with name *JRI_HOME* and value

C:\Users\jthiele\Documents\R\win-library\3.2\rJava\jri.



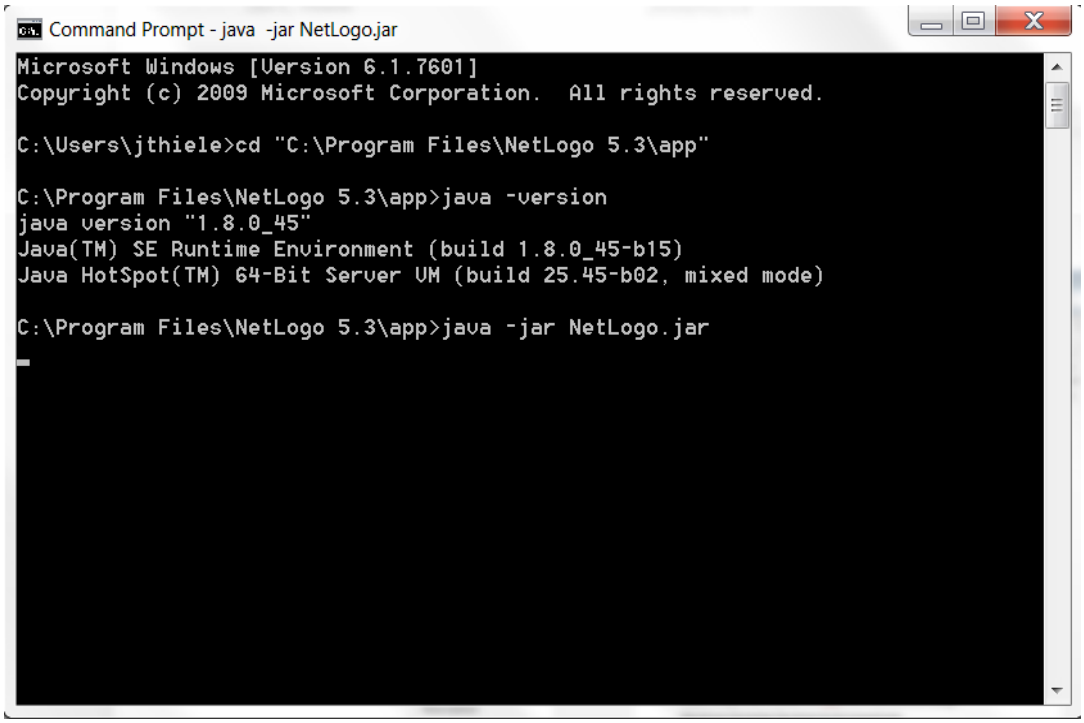
11. **Download the R-Extension** (https://sourceforge.net/projects/r-ext/files/v1.4%20for%20NetLogo%205.3%20and%20R%203.2%20and%20later/).

Extract the zip folder and copy only the folder *r* into the extensions folder of the NetLogo installation (here: *C:\Program Files\NetLogo 5.3\app\extensions*).



12**. Test it all together!**

Start NetLogo 5.3 (with 64-bit Java), e.g. by click on it in start menu or by starting it from the MS-DOS-Command prompt (if Java is installed):



Write into the Procedures Tab:

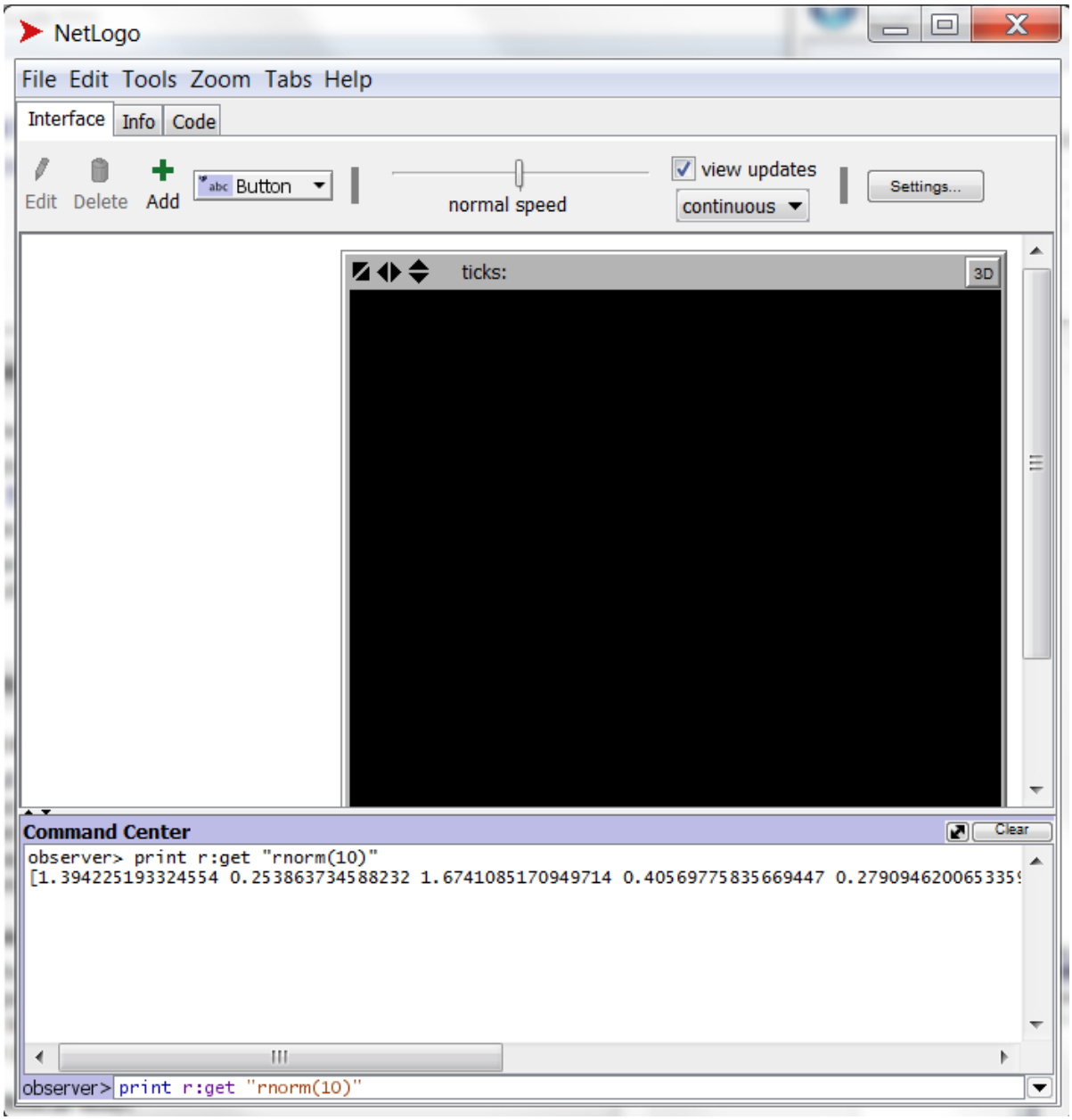
extensions [r]

and press the Check button (If NetLogo closes immediately something with the *R_HOME* and *PATH* variable is wrong). If there is a problem with rJava/JRI you should see an error message.

Otherwise go to the Interface Tab and type into the Command Center:

print r:get "rnorm(10)"

You should see a list of 10 random values.


NetLogo
File Edit Tools Zoom Tabs Help
Interface
Info
Code
Edit
Delete
Add
Button
normal speed
view updates
continuous
Settings...
ticks:
3D
Command Center
Clear
observer> print r:get "rnorm(10)"
[1.394225193324554 0.253863734588232 1.6741085170949714 0.40569775835669447 0.279094620065335
observer> print r:get "rnorm(10)"