Putting all pieces together - an R example

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Pulling it all together - Preparing, submitting and monitoring a job on Prince

**In this section we will prepare, submit and monitor a small R job.** Our test case comes from the NYU Data Services “Introduction to R” tutorial

**Exercise**
Start a terminal session on Prince and replicate this example in it.

**Choose your own example**
After - or instead of - following this example through, prepare and submit a run of something genuinely relevant to your research. This way, if you are doing this tutorial in a classroom, the presenter will be available should you have questions or strike difficulties.

We're using R, so first we'll look for available modules. On Prince:

```bash
$ module avail r
------------------------------- /share/apps/modulefiles
-------------------------------
gstreamer/intel/1.10.2  mothur/intel/1.35.1  r/intel/3.3.2
```

There's a few modules starting with r, and a couple of versions of R. We'll use the latest version, 3.1.2.

```bash
$ module purge
$ module list
No Modulefiles Currently Loaded.
$ module load r/intel/3.3.2
```

Take a look at what it did:
... clearly, R uses a lot of other packages. The modulefile has looked after loading the correct ones.

For our example, we'll get some code and data from /share/apps/examples:

```
$ mkdir /beegfs/$USER/R-example
$ cd !$
$ cp /share/apps/examples/r/basic/* .
```

Take a look at the job script:
There are a few steps we can try here:

1. Start an interactive batch session, and run the example.R script interactively
2. Close the interactive session, and submit the batch script as a job:

   ```bash
   $ sbatch my_R_job.s
   You'll get a job id returned.
   Is it running yet?
   $ squeue -u $USER
   You could watch the output in the run directory:
   $ ls -l ${SCRATCH}/R-example
   Finally, when the job finishes, you should see a .out file in the directory you submitted from.

Exercise
Experiment with sbatch options for the job name, output and error file merging and location, resource limits.