

getting started

SESSION 1 PREAMBLE

MARTIN KRZYWINSKI

Genome Sciences Center
BC Cancer Agency
Vancouver, Canada

EMBO PRACTICAL COURSE:
BIOINFORMATICS GENOME ANALYSES

Centre for Research & Technology - Hellas, Thessalonica, Greece
June 5–17, 2017

UNIX ENVIRONMENT

this is a comment - don't type this in

your unix prompt may look like this

[bga2017@embo2-7 ~]\$

when I ask you to enter a command, instead of showing

the full prompt, you'll see ">"

> pwd

INSTALL CIRCOS AND TOOLS

```
# install course materials
```

```
> cd ~
```

```
> pwd
```

```
/home/bga2017
```

```
> tar xvfz /BGA2017/Course_material/June08/circos-course.tgz
```

```
# check that Circos and perl are available
```

```
> which circos
```

```
/BGA2017/circos-0.69-5/bin/circos
```

```
> which perl
```

```
/BGA2017/perl-5.24.1/bin/perl
```

```
# if the "which" commands do not point
```

```
# to a copy of circos and perl,
```

```
# load the circos module
```

```
> module use /BGA2017/modulefiles
```

```
> module load circos
```

NAVIGATING DIRECTORIES

```
# you will need to know how to
# - move around the file system
# - relative vs absolute file paths
# - list the contents of a text file
# - edit and save a text file
```

```
# show current working directory
```

```
> pwd
```

```
/home/bcga2017
```

```
# change to Circos course directory
```

```
> cd circos-course
```

```
> pwd
```

```
/home/bcga2017/circos-course/
```

```
> ls -al
```

```
-rw-r--r--    1 martink  staff      366   1 Jun 21:24 README
drwxr-xr-x   20 martink  staff     680   4 Jun 04:13 handout/
drwxr-xr-x   14 martink  staff     476   4 Jun 04:13 session/
drwxr-xr-x   35 martink  staff    1190   7 Jun 09:38 slides/
-rw-r--r--@   1 martink  staff 8509881  6 Jun 17:50 pov.collection.pdf
```

COURSE FILES

```
> cd session/6
```

```
> ls -al
```

```
total 8
```

drwxr-xr-x	13	martink	staff	442	28	Apr	2016	.
drwxr-xr-x	14	martink	staff	476	4	Jun	04:13	..
drwxr-xr-x	4	martink	staff	136	28	Apr	2016	1
drwxr-xr-x	4	martink	staff	136	26	Sep	2014	2
drwxr-xr-x	4	martink	staff	136	28	Apr	2016	3
drwxr-xr-x	4	martink	staff	136	28	Apr	2016	4
drwxr-xr-x	4	martink	staff	136	28	Apr	2016	5
drwxr-xr-x	4	martink	staff	136	28	Apr	2016	6
drwxr-xr-x	4	martink	staff	136	28	Apr	2016	7
drwxr-xr-x	4	martink	staff	136	26	Sep	2014	8
drwxr-xr-x	41	martink	staff	1394	7	Oct	2014	data
drwxr-xr-x	3	martink	staff	102	28	Apr	2016	etc
-rwxr-xr-x	1	martink	staff	74	17	Sep	2014	run

SESSION LESSON FILES

```
# each session has multiple lessons
```

```
#
```

```
# the directory location is
```

```
> cd 1
```

```
> pwd
```

```
/home/bga2017/circos-course/session/6/1
```

```
> ls -al
```

```
drwxr-xr-x  4 martink  staff      136 28 Apr  2016 ./
drwxr-xr-x 13 martink  staff      442 28 Apr  2016 ../
-rw-r--r--@ 1 martink  staff 331057  1 Jun 21:55 circos.png
drwxr-xr-x  8 martink  staff      272 28 Apr  2016 etc/
```

```
> more etc/circos.conf
```

```
karyotype = ../data/karyotype.5chr.txt
```

```
chromosomes_units = 1000000
```

```
chromosomes_display_default = yes
```

```
<<include ideogram.conf>>
```

```
<<include ../etc/ticks.conf>>
```

```
<<include ../../etc/image.conf>>
```

```
<<include etc/colors_fonts_patterns.conf>>
```

```
<<include etc/housekeeping.conf>>
```

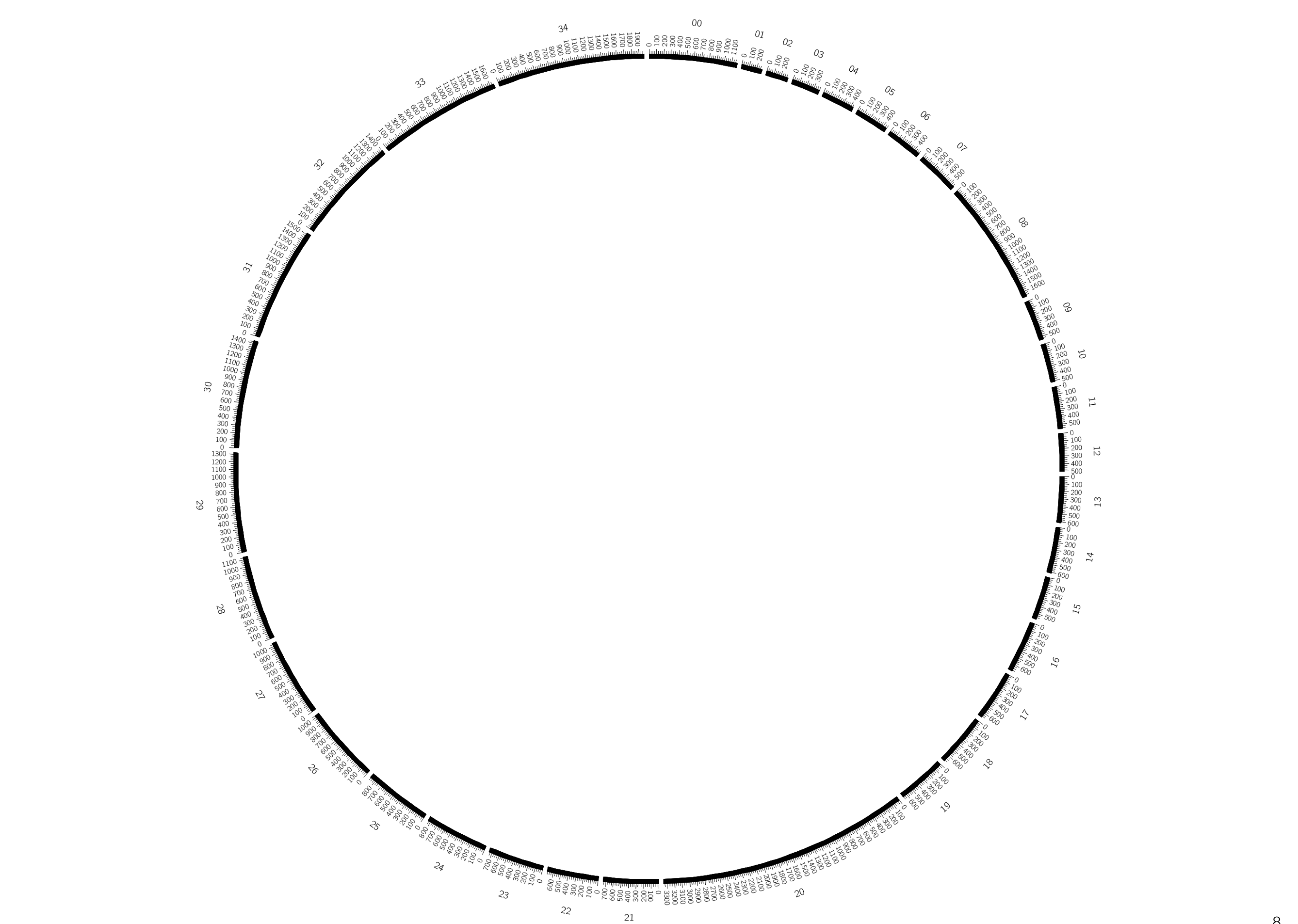
CREATING IMAGES

```
# each session's lesson is self-contained
# each lesson builds on the previous lesson
#
# make sure you can create an image
```

```
> pwd
/home/bga2017/circos-course/session/6/1
```

```
> circos
debuggroup summary 0.30s welcome to circos v0.69-5 2 May 2017 on Perl 5.024001
debuggroup summary 0.30s current working directory /home/bga2017/circos-course/session/6/1
debuggroup summary 0.30s command /BGA2017/circos-0.69-5/bin/circos [no flags]
debuggroup summary 0.30s guessing configuration file
debuggroup summary 0.30s found conf file /home/bga2017/circos-course/session/6/1/etc/
circos.conf
debuggroup summary 0.57s debug will appear for these features: output,summary
debuggroup summary 0.57s bitmap output image ./circos.png
debuggroup summary 0.57s parsing karyotype and organizing ideograms
debuggroup summary 0.58s karyotype has 35 chromosomes of total size 32,108,776
debuggroup summary 0.60s applying global and local scaling
debuggroup summary 0.61s allocating image, colors and brushes
debuggroup summary 10.71s drawing 35 ideograms of total size 32,108,776
debuggroup summary 10.71s drawing highlights and ideograms
debuggroup output 11.84s generating output
debuggroup output 12.22s created PNG image ./circos.png (329 kb)
```

```
> eog circos.png
```



LESSON ORGANIZATION

```
# During each lesson, I will show you part of a configuration
# relevant to the lesson.
#
# I will typically show only part of the configuration file,
# not the entire file.
#
# I will ask you to make changes to the file, usually to comment
# and uncomment a line.
#
# After making changes, you will then create the image.

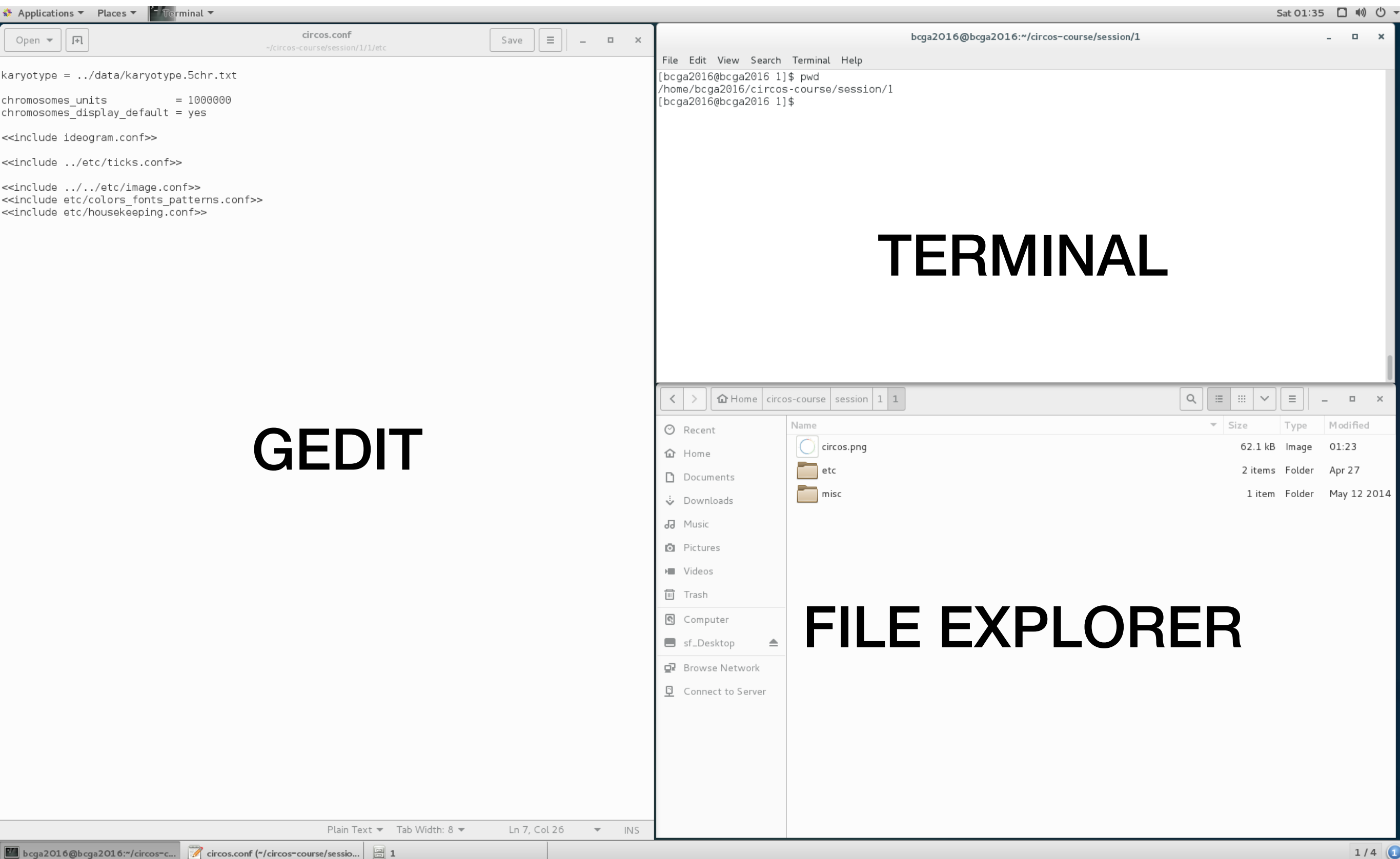
> pwd
/home/bcga2017/circos-course/session/1/1
> cd ../2
/home/bcga2017/circos-course/session/1/2

# generate image
> circos

# look at image
> eog circos.png

# edit etc/circos.conf

# ...and repeat
```



GEDIT

TERMINAL

FILE EXPLORER

