

A tiny bit extra bash

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Scripts

Specify that it is a shell script through adding the line
#!/bin/sh

Shell scripts have the **extention .sh** (e.g. **hello.sh**)

Scripts

Example script (call it e.g. hello.sh) below:

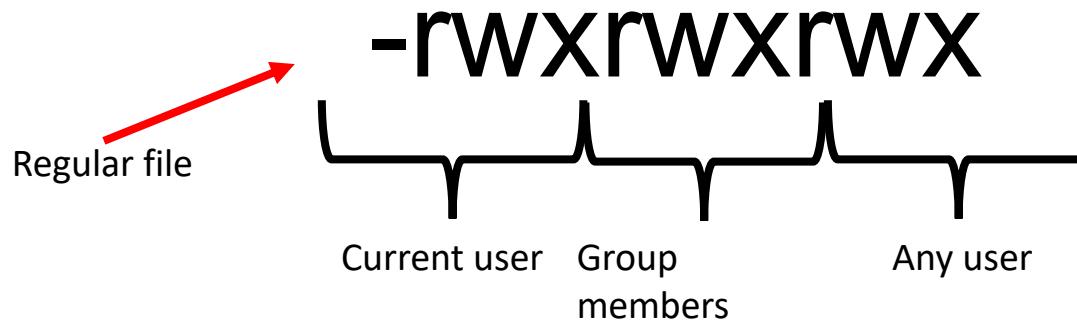
```
#!/bin/sh  
echo "Hello world!"
```

Execute the script using sh:

sh hello.sh

Permissions

All files have a 10 character permission string



r = permission to read

w = permission to write/edit

x = permission to execute

Permissions

Here, you have read-write but not to execute

`-rw-r-- r--`

To change permissions, use **chmod**

chmod +x hello.sh

Now the permissions are `-rwXr-- r--`

Loops – for loops

Loops are used to perform actions on several lines/files

```
for i in 1 2 3 4 5  
do  
echo "Welcome $i times"  
done
```

Loops – for loops

For-loops can also be used on lists

```
for i in $(cat number.list)
do
echo "Welcome $i times"
done
```

Loops – while loops

```
while [ condition ]; do command1 command2 .. .... commandN;  
done
```

The while syntax will execute while a condition is true

Loops – while loops

```
cat myfile.fna | while read line; do echo -n $line | wc -c;  
done
```

Here we count the number of bases in the genome

the -n flag avoids printing newlines, creating a file with one line

Downloading files from server

```
scp user@server:/path/to/remotefile.zip /Local/Destination
```

don't forget a colon btw username and path to file on server

there has to be a space between file on cluster and target folder on local

computer

```
scp user@server:/path/to/remotefile.zip .
```

here the point means "here"

(use if you are in the right folder only)

Some special characters

Comments, code after this won't run

~ Shortcut to your home directory

\ Continue on next line

Making your life easier

Tab completion! Use it!

Iterate history with up and down arrow

Search history with Control + R

Get to beginning of line with control + a

Get to end of line with control + e

Stopping and exiting

Ctrl + c – kills a job

exit:

q (man, less, more)

Ctrl + x (nano)

cd – gets you home if you are lost

Finding help

`man COMMAND (exit: q)`

Google

StackOverflow

After doing research: Ask a friend or teacher!