



IMT 4891 - Digital Workflow Fundamentals
September 16, 2009

#5: Workflow automation

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Welcome to week 38!

Practical messages

34	Introductions	Computer history Intellectual Property Rights and Creative Commons
35	Collect and describe data	
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37	Moving data	
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Last weeks exercises, #1

Provide a command that will move a file of your choice from a machine different from stan.hig.no (i.e. your local laptop) to your account on stan.hig.no. Verify that the file was moved.

```
Terminal — bash — 86x24
bash student1@stan:~ — ssh
Last login: Tue Sep 15 12:23:57 on ttys000
Kjell-Are-Refsviks-MacBook:~ refsvik$ cd Desktop
Kjell-Are-Refsviks-MacBook:Desktop refsvik$ scp *.png student1@stan.hig.no:kjellare
student1@stan.hig.no's password:
HiG_logo_english_RGB.png          100%  83KB  83.0KB/s   00:00
Kjell-Are-Refsviks-MacBook:Desktop refsvik$
```

Last weeks exercises, #2

Provide (a) command(s) that will download the image files you used in week 36, compress the images into a zip-file that is named according to the date the images was taken and upload them to your account on stan.hig.no

```
Terminal — bash — 103x29
bash student1@stan:~ — ssh
Kjell-Are-Refsviks-MacBook:pictures refsvisk$ ls -alF
total 1120
drwxr-xr-x  9 refsvisk  staff    306 Sep 15 22:30 ./
drwx-----+ 9 refsvisk  staff    306 Sep 15 22:30 ../
-rw-r--r--  1 refsvisk  staff  67912 Sep  9 00:13 model_gg.jpg
-rw-r--r--  1 refsvisk  staff  93882 Sep  9 00:13 model_goldengate.jpg
-rw-r--r--  1 refsvisk  staff 147870 Sep  9 00:13 model_la.jpg
-rw-r--r--  1 refsvisk  staff  70880 Sep  9 00:13 model_lofoten.jpg
-rw-r--r--  1 refsvisk  staff  66933 Sep  9 00:13 model_ship.jpg
-rw-r--r--  1 refsvisk  staff 109694 Sep  9 00:13 model_varoy.jpg
-rwxrwx---@ 1 refsvisk  staff    279 Sep  6 23:49 tiltshift.sh*
Kjell-Are-Refsviks-MacBook:pictures refsvisk$ exiftool "-FileName<CreateDate" -d "%Y%m%d_%H%M%S.%e" .
  1 directories scanned
  6 image files updated
Kjell-Are-Refsviks-MacBook:pictures refsvisk$ ls -alF
total 1120
drwxr-xr-x  9 refsvisk  staff    306 Sep 15 22:31 ./
drwx-----+ 9 refsvisk  staff    306 Sep 15 22:30 ../
-rw-r--r--  1 refsvisk  staff 109694 Sep  9 00:13 20090723_152952.jpg
-rw-r--r--  1 refsvisk  staff  70880 Sep  9 00:13 20090723_164230.jpg
-rw-r--r--  1 refsvisk  staff 147870 Sep  9 00:13 20090730_000810.jpg
-rw-r--r--  1 refsvisk  staff  67912 Sep  9 00:13 20090802_220558.jpg
-rw-r--r--  1 refsvisk  staff  93882 Sep  9 00:13 20090803_002145.jpg
-rw-r--r--  1 refsvisk  staff  66933 Sep  9 00:13 20090803_003209.jpg
-rwxrwx---@ 1 refsvisk  staff    279 Sep  6 23:49 tiltshift.sh*
Kjell-Are-Refsviks-MacBook:pictures refsvisk$
```


Last weeks exercises, #3

Provide (a) command(s) that will download the image files you used in week 36, make a web page out of them, and upload them to your web folder on `loke.hig.no`.

Provide a screen capture together with your answer that can verify that the files are uploaded and are available through HTTP and make the screenshot legible, yet as small as possible.

```
wget -A.JPG -r -l1 -np http://www.ansatt.hig.no/kjellr/misc/20090901_images/  
index.html
```

```
cd www.ansatt.hig.no/kjellr/misc/20090901_images
```

```
montage *.JPG -gravity center -border 1x0 -bordercolor white -resize 100x100^  
-crop 100x100+0+0 -geometry 100x100+0+0 -fill white -stroke black -gravity  
center -tile 6x -title 'Skibladner' index.html
```

```
zip -r pictures.zip .
```

```
scp pictures.zip student1@stan.hig.no:kjellare
```

```
ssh student1@stan.hig.no
```

```
...
```

```
cd kjellare
```

```
unzip -r pictures.zip
```

```
open index.html
```

Last weeks exercises, #4

Now repeat exercise 3, but this time - insert the name of the photographer (your teacher), into a appropriate IPTC field in the image files and also onto the images themselves in the bottom right corner. Provide a screen capture together with your answer that can verify that the files are uploaded and are available through HTTP and make the screenshot legible, yet as small as possible.

```
wget -A.JPG -r -l1 -np http://www.ansatt.hig.no/kjellr/misc/20090901_images/
index.html

cd www.ansatt.hig.no/kjellr/misc/20090901_images

exiftool "-FileName<CreateDate" -d "%Y%m%d_%H%M%S.%%e" .

exiftool "-Artist=Kjell Are Refsvik" *.jpg

mogrify -gravity southeast -fill white -pointsize 20 -annotate +20+20 '© Kjell
Are Refsvik, 2009' *.jpg

montage *.jpg -gravity center -border 1x0 -bordercolor white -resize 100x100^
-crop 100x100+0+0 -geometry 100x100+0+0 -fill white -stroke black -gravity
center -tile 6x -title 'Skibladner' index.html

zip -r pictures.zip .

scp pictures.zip student1@stan.hig.no:kjellare

ssh student1@stan.hig.no
...
cd kjellare
unzip -r pictures.zip
open index.html
```

Lecture

Automation: doing more than one thing at a time

Multiple commands

;

Pipes

|

output of one command piped as input to the next

Scripts

...

Backgrounds jobs and timed jobs (cron)

Lecture

More than one command at a time

Output of one command as input to another using pipes

Scripts

Scripts with variables

Timed scripts

More than one command at a time

Create a “Movies” folder
inside the home folder ...

```
mkdir ~/Movies ; cp *.mp4 ~/Movies
```

...and copy all MPEG-4 files to
this same folder

Output of one command as input to another using pipes

List all text files in the current folder...

ls *.txt

pipe

| grep "refsvik"

...and search for the word "refsvik" inside those files.

Output of one command as input to another using pipes

List all text files in the current folder...

...and output the result to a text file.

```
ls *.txt | grep "refsvik" > output.txt
```

...and search for the word "refsvik" inside those files.

redirect

Scripts

Small text files that can contain commands that you want to execute in a sequence

```
#!/bin/sh

for f in *.JPG;
do
    base='basename $f .JPG'
    mv $f$base.jpg
done
```

1. Declare the shell you are making this for
2. Give it a descriptive name and use the extension “.sh”
3. Make it executable using the chmod command
chmod 770 <scriptname.sh>
4. Run it by adding its folder to the path and type its name or go to its folder and write
./<scriptname.sh>

```
#!/bin/sh

for f in *.JPG;
do
    base='basename $f .JPG'
    mv $f$base.jpg
done
```

This particular script is a loop that goes through all the files in the current folder and renames all “JPEG” files to “jpg”.

Scripts with input variables

name.sh

```
#!/bin/sh  
  
name='Kjell Are Refsvik, 2009'  
mogrify -gravity southeast -fill white -pointsize 20 -annotate +20+20 "$name" $1/*.jpg
```

Script that tags all jpeg files in a specified folder with the name of the photographer

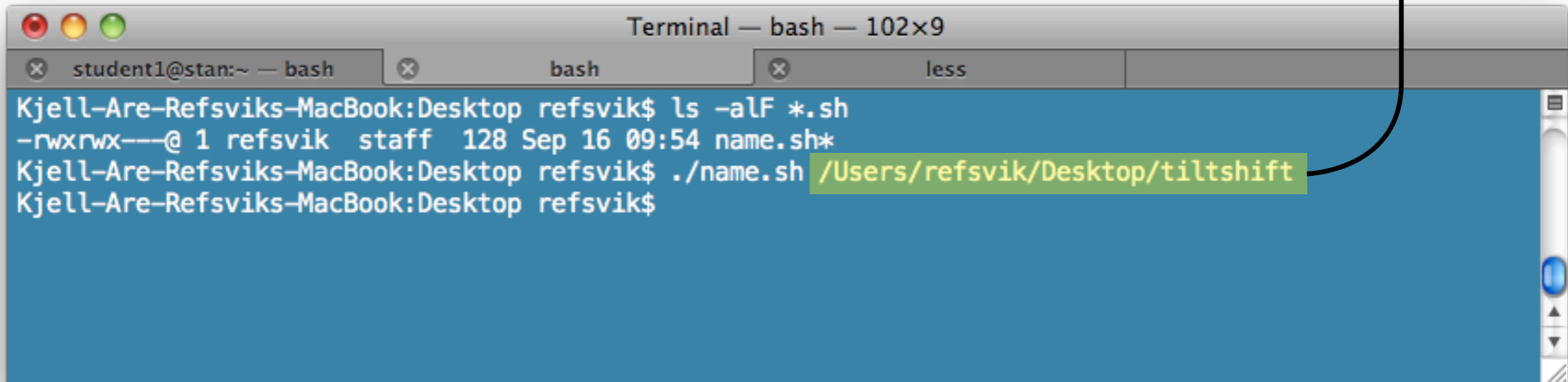
Scripts with input variables

name.sh

```
#!/bin/sh
```

```
name='Kjell Are Refsvik, 2009'
```

```
mogrify -gravity southeast -fill white -pointsize 20 -annotate +20+20 "$name" $1/*.jpg
```



A terminal window titled "Terminal — bash — 102x9" with three tabs: "student1@stan:~ — bash", "bash", and "less". The terminal output shows the following commands and results:

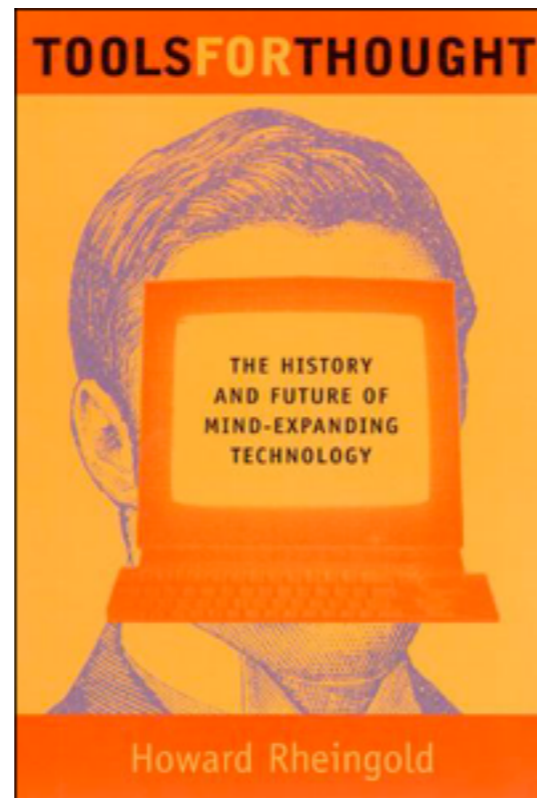
```
Kjell-Are-Refsviks-MacBook:Desktop refsvik$ ls -alF *.sh
-rwxrwx---@ 1 refsvik  staff  128 Sep 16 09:54 name.sh*
Kjell-Are-Refsviks-MacBook:Desktop refsvik$ ./name.sh /Users/refsvik/Desktop/tiltshift
Kjell-Are-Refsviks-MacBook:Desktop refsvik$
```

Arrows from the code block above point to the highlighted parts in the terminal: one from the variable value to the shell command, and another from the path argument to the script's argument.



Kjell Are Refsvik, 2009

To read



Paper



Paper
Screen
Sound

Timed scripts

Mechanisms for running scripts as a particular time.
Read more about this mechanism on your own.

<http://en.wikipedia.org/wiki/Cron>

To watch

-

To do, week 38

1. Write a single UNIX command-line statement that finds all jpeg-files in the home directory (and subdirectories) and pipes the result to a command that counts number of files that have been found.
2. Write a script that automates exercise #2 from week 37.
3. Make a feature-complete workflow that includes finding, describing, transforming, transcoding, moving and presenting data of your choice. Make use of UNIX-scripts to create the workflow and all the knowledge and experience that you have collected so far in the course and make sure that the solution is as flexible as possible to fit different situations and needs.

Solving at least 2 of these exercises before next week's lecture will be mandatory. You are free to select what exercises to solve.

We would like you to upload your answers as a single utf-8 encoded plain text file (no Microsoft Word-files, please) into Fronter>imt4891...>Task>Week 35. Please name the file imt4891_week35_<your_surname>.txt