3. Download the file screenshots.tar.gz from course page on the moodle site. The screenshots contain images of the terminal window with few commands that expose the hardware / configuration details of my laptop I use for this course instruction. You need to make a clean pdf that contains two terminal images per page. This involves trimming of the images. Your script should take the pixel values for trimming as a user input and then do the task automatically for all the images in the directory and generate the pdf.
   The solution includes the script and one sample page the output pdf. [2 Marks]
   Hint: Install imagemagick with `sudo apt install imagemagick` and check man page of `convert` command.
   Application: You may need to trim a large set of images from an experiment and use them for image analysis, to create a video sequence and to extract events. High speed imaging of experiments is an important scientific technique.

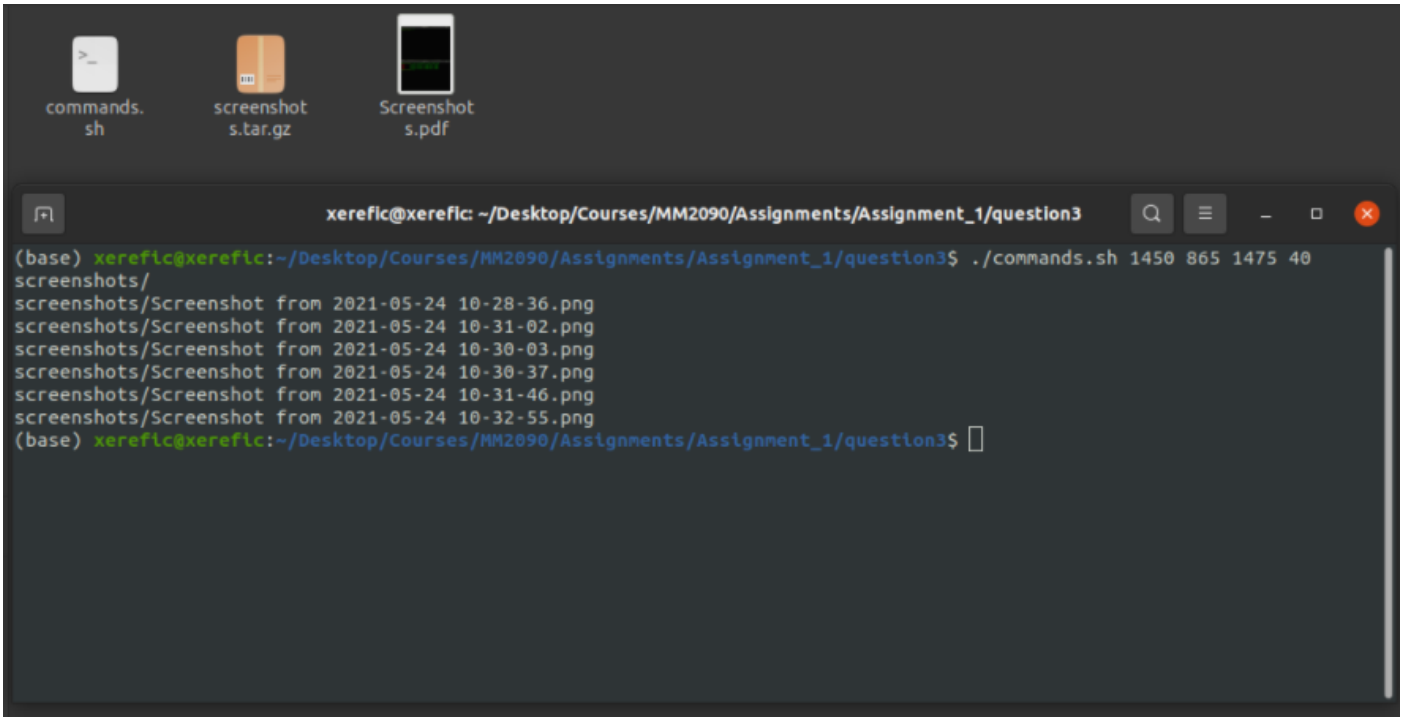
Link to the GitHub repository for this question: GitHub

The bash script takes parameters – width, height and strides and outputs the pdf of the cropped images.

```
#!/bin/bash

# Unzipping the screenshots
tar -xvzf screenshots.tar.gz
mkdir cropped

# Renaming the files for ease of access
cd screenshots/
for f in *\ *; do mv "$f" "${f// /_}"; done
i=0;
for files in `ls`;
do
  mv $files $(basename $i).png;
  i=$(( $i+1 ));
done;

# size: 1450x865+1475+40
cd ..

# Cropping the images
for files in `ls screenshots/`;
do
  if [ -z "$1" ]; then
            width=`identify -ping -format '%w' screenshots/$files`
            height=`identify -ping -format '%h' screenshots/$files`
            x=0
            y=0
  else
            width=$1
            height=$2
            x=$3
            y=$4
  fi
  convert screenshots/$files -crop $width\x$height+$x+$y cropped/$(basename $files .png).png
done;

rm -r screenshots/
mkdir combined

# Combining two images into one by appending them vertically
for j in $(seq 0 $(($i/2-1)) );
do
  convert -append cropped/$(basename $(($j*2))).png cropped/$(basename $(($j*2+1))).png
combined/$(basename $j).png
done;

rm -r cropped/

# Joining the combined images into a pdf
convert -page A4 -resize 3508x2480 combined/*.png Screenshots.pdf


```

```
52. rm -r combined/
53.
```

TERMINAL:



OUTPUT: