1. (20 points)

The command **convert** from the **imagemagick** program is able to do image operations on image files. It can also change the format of the image, for example from JPG to BMP, among the types it supports. The command to resize an image is as simple as the following:

```
convert -resize 50% bigimage.jpg newsmallimage.jpg
```

Assume that you have copied the photos from your camera to your hard drive and want to send them to a friend of yours. However, the size of the images are too large and you want to save time by resizing them to a smaller size.

The other problem is that the images are in the same folder with other images and files. However, you know that the file names of the ones you have copied from the camera starts with DSC and ends with JPG, in upper-cases.

Write a script to resize these image files and copy them to a new folder. In the new folder, there should only be the new images, which are resized.

2. (20 points)

wget is a utility for non-interactive download of files from the web. Create a script that will act like a download manager. The script should read from the file **download_list.txt**, where each line contains a web adress, like http://www.movies.com/amadeus.avi, that will be downloaded. Once the file is downloaded, the line should be removed from download_list.txt and should be added to another file called **download_finished.txt**. Sample wget command is given below. This command saves amadeus.avi to current directory with the same name.

```
wget http://www.movies.com/amadeus.avi
```

3. (5 points) What is a *setuid* program?

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4. (10 points) Explain 3 main backup types.

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5. What gets done?
a) (5 points) `echo CE350 | sed s/CE350/Linux/`

b) (5 points) `i=2; j=4; sed -n "$i"', '"$j"'p' in.txt >> out.txt`

c) (5 points) `for item in $(seq 1 25); do item="$item.n u m"; echo "$item"; done`

6.
Given a file, *examScores.dat*, including a number of students' data as the name, the ID, and the score of each student separated with comma in each line, do the followings:

a) (15 points) Print the names of the students who get a score greater than 90.

b) (15 points) Print the average score.