1. Redirection

   (a) Try typing the following commands :

   ```
   $ cat > newfile 2> newfile.error
   $ car > newfile 2> newfile.error
   $ cat > newfile 2>&1
   $ car > newfile 2>&1
   $ cat < newfile
   $ echo foo | cat > newfile 2>&1
   $ ech foo | cat > newfile 2>&1
   $ echo foo | car > newfile 2>&1
   $ (echo foo | cat) > newfile 2>&1
   ```

   Make sure you understand what happens in each case.

2. Filename expansion and Quoting

   (a) Do the following on the directory `/bin`

      (i) List all filenames with exactly three characters.

      (ii) List all filenames with exactly three characters in which the second character is a vowel.

      (iii) List all filenames with a, b, c, or d as the last character.

      (iv) Construct a command to print the number of filenames consisting of exactly three characters.

      (v) Construct a command to print the total number of files with exactly two, three or four characters in their name.

   (b) Compare the effect of the following commands :

   ```
   echo $HOME
   echo "$HOME"
   echo '$HOME'
   echo *
   echo "*"
   echo '*'
   echo $HOME/*
   echo "$HOME/*"
   echo '$HOME/*'
   ```

   (c) Try to create a file with the name *. Was this a sensible thing to do ? How would you delete it ? (Be very careful !)

3. Background processes and nohup

(a) Start the command sort `/etc/randam/` & in the background in your current shell

(b) Bring it back to the foreground and terminate it by typing

(c) Start it again, and once more so that you have two copies running in the background

(d) Bring them to the foreground and terminate them in the order you started them

(e) Start the same command in the background, and terminate it using

4. Grouped commands Compare the following command sequences, and make sure you understand the differences :

(a) ```
cd /tmp
cd /usr; ls
pwd
```

(b) ```
cd /tmp
(cd /usr; ls)
pwd
```

(c) `sleep 5; sleep 5 &`

(d) `(sleep 5; sleep 5) &`

Check you can use your history to get at and repeat any of the commands you have typed.