1.

Kernel mode is executing code that has complete and unrestricted access to the underlying hardware. It can execute any CPU instruction and reference any memory address. Crashes in kernel mode will halt the entire PC.

User mode is executing code that has no ability to directly access hardware or reference memory. Code running in user mode must delegate to system APIs to access hardware or memory. In this mode crashes are recoverable.

2.

Man- help manual  
ls- list information about file  
pwd- print working directory  
cd – change directory  
hostname- obtain DNS name and set system’s hostname or NIS domain name  
cp- copy files, group of files or directory  
mv- move or rename files or directories  
rm- remove files  
mkdir- create new folder  
mount- mount a file system  
chmod- change access permission   
chown- change file owner and group  
ln- create a symbolic link to a file  
df- display free disk space  
du- estimate file space usage  
dmesg- print kernel & driver messages   
echo- display message on screen  
export- set an environment variable  
find- search for files that meet a desired criteria   
rev- reverse lines of a file   
sh – secure shell client (remote login program)  
bash- GNU bourne-again shell

3.

Apt- search for and install software packages  
cat- concatenate and print (display) the content of files  
cut- divide a file into several parts  
diff- display the differences between two files  
grep- search file for lines that match a given pattern  
less- display output one screen at a time  
nl – number lines and write files  
head- output the first part of file  
tail- output the last part of file  
ps- process status  
kill- kill a process by specifying its PID  
killall – kill processes by name  
sed- stream editor  
sort- sort text filex  
sudo- execute a command as another user  
tar – store,list or extract files in an archive   
gunzip- compress or decompress named file  
time – measure program running time  
touch- change file timestamps  
uniq- uniquify files  
wc- print byte, word and line counts  
xargs- execute utility, passing constructed argument list  
  
  
4.

> - Standard „größer als“ operatoren  
>> - bitweise Rechtsvershiebung (getilet durch 2 für jede Schaltposition)  
| - bitweise OR