Making user programs

You already have a number of simple user programs in `src/examples`. You can compile them by issuing make in that directory. Modify `src/examples/Makefile` whenever you wish to compile your own user programs (you will find instructions inside the `Makefile`). Write all your test programs in the `src/examples` directory.

Simulated Disk

Before running user programs first you must create a simulated disk, format it, and copy user programs there. Go to `userprog` and run `make`. Then, go to `userprog/build` and issue the command:

```
pintos-mkdisk fs.dsk 2
```

This will create a file `fs.dsk` with a 2MB simulated disk in the directory. Format the disk with the command:

```
pintos --qemu -- -f -q
```

Copy Pintos user programs to the simulated disk with the command: (Remember to copy already compiled programs (binaries), not the source code files.)

```
pintos --qemu -p programname -a newname -- -q
```

Most probably you will copy user program from the `src/examples` directory. Then the command will look like this:

```
pintos --qemu -p ../../examples/programname -a
programname -- -q
```

If you need to copy a file from the simulated disk, use the command:

```
pintos --qemu -g filename -- -q
```
or
```
pintos --qemu -g filename -a newname -- -q
```

As you see, the only difference is in the switch: -p is used to put files to the disk and -g to get a file from the disk. If you need to run a user program that has been already copied:

```
pintos --qemu -- run programname
```

Furthermore you can also list files with `ls`, remove files with `rm` and print contents of a file with `cat`. Several of these commands can be run on the same line, e.g.:

```
pintos --qemu -- ls rm a rm b ls
```

will list files, delete the files a and b and then list files again.