

CAAM 420 Lecture Notes

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10/11/2013

unzip tar.gz files

- Tar file: In this way you can move several files around as a single file unit.
- To unzip this kind of files, e.g. `cvector.tar.gz`, you can use the commands below:

```
gunzip cvector.tar.gz
```

You will get a file named `cvector.tar`, then:

```
tar xvf cvector.tar
```

You will finally get the unzipped files.

Check memory leakage

Several different ways to check memory leakage:

```
valgrind --leak-check=full ./a.out | more
```

In this command, `|` is the pipe symbol.

```
valgrind --leak-check=full ./a.out >& jnk  
more jnk
```

This command will write all the output information to a file `jnk`, so that we can easily examine the errors.

Standard structure

- Under the directory `cvectorpkg`, we have the standard structure:

```
doc      include      lib      main      Makefile
```

- `'doc'` refers to documentation, which is usually missing.
- `'lib'` refers to library. The standard suffix of the files is `'.a'`. We can use the following command to pass the information by assignment statement.

```
cd lib  
$(MAKE) LIB=&(LIB) INCDIRS=$(INCDIRS)
```

- Clean: remove everything you don't need to see after the project but conserve the result of the project
- Burn: remove everything that produces

- Make is a language. We can simply type 'make' then everything will come out. It is a good idea for reproducible research. Makefile contains 2 parts: We need to modify some parameters above the fold; However, most of time we don't need to touch the other part which is below fold. The makefile in lib is not an independent file, it is part of the makefile for the whole package. Also, in 'doc' directory, we can modify the makefile so that it can automatically transfer latex file into pdf.

Install CLAPACK

- Use the command above to unzip the package:

```
tar xvfz clapack.tgz
```

While 'z' involves unzip automatically

- type the command above to change the file name:

```
cp make.inc.example make.inc
```

In this way we can modify the parameter in file'make.inc' and use this file to make the package.