

UNIX

An Introduction

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Principle #1

Make each program do one thing well. To do a new job, build afresh rather than complicate old programs by adding new features.

Principle #2

Expect the output of every program to become the input to another, as yet unknown, program. Don't clutter output with unnecessary information. Don't insist on interactive input.

```
>echo $PATH
```

```
/sbin:/bin:/usr/sbin:/usr/bin:/usr/local/bin:/usr/X11R6/bin:/home/fiml
```

```
>
```

```
>tr "a" "b"
```

```
aaaa
```

```
bbbb
```

```
bla bla bla
```

```
blb blb blb
```

```
>
```

```
>echo $PATH | tr ":" "\n"
```

```
/sbin
```

```
/bin
```

```
/usr/sbin
```

```
/usr/bin
```

```
/usr/local/bin
```

```
/usr/X11R6/bin
```

```
/home/fimblo/bin
```

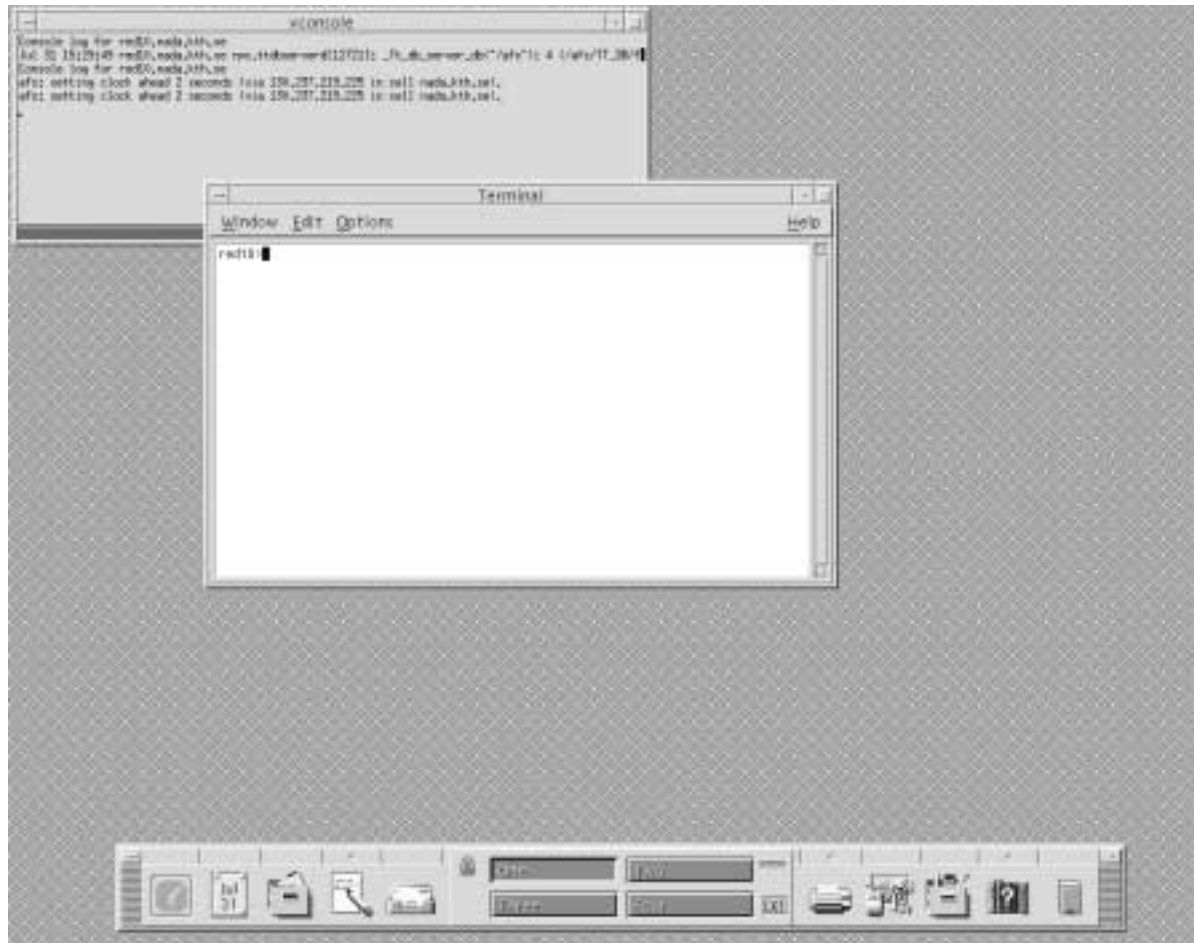
```
>
```

The Window Manager

The Window Manager is the program which manages your Graphical User Interface (GUI).

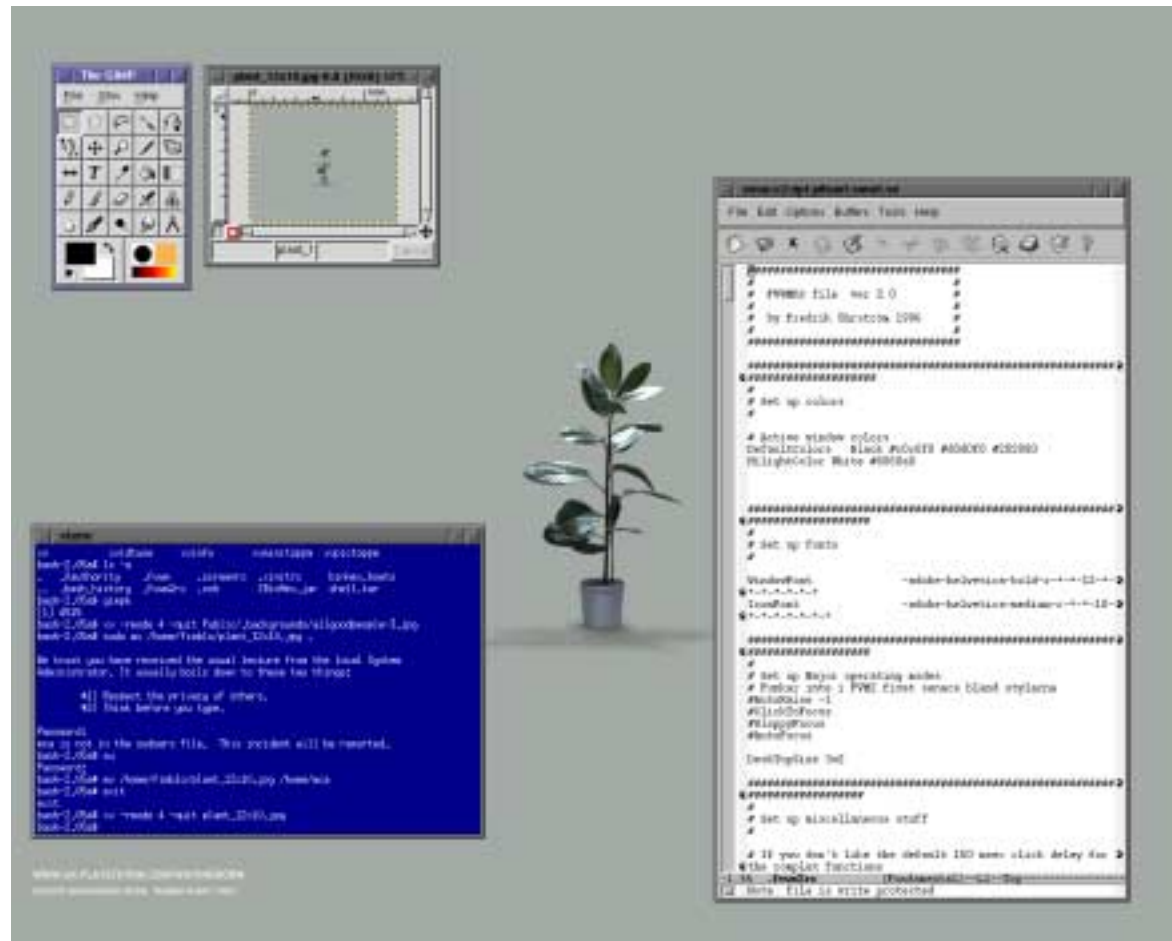
Your default windowmanager is called *CDE*. There are lots of other window managers available. Some of them are: *KDE*, *Enlightenment*, *twm*, *fvwm*, *fvwm2*, etc. Each one has its own flavour, and all are configurable.

The Window Manager (con't)



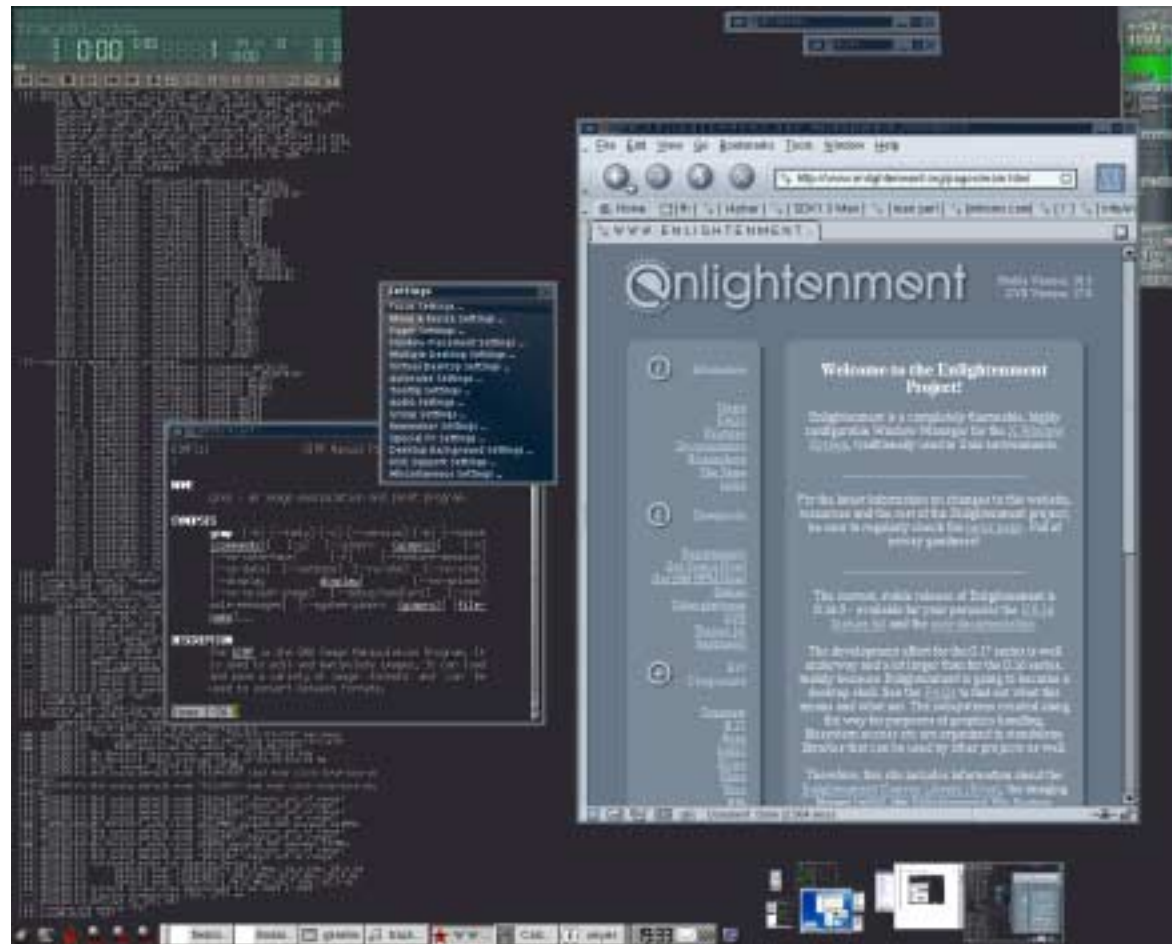
CDE

The Window Manager (con't)



fvwm2

The Window Manager (con't)



Enlightenment

The Window Manager (con't)



KDE

The Shell

What is the shell?

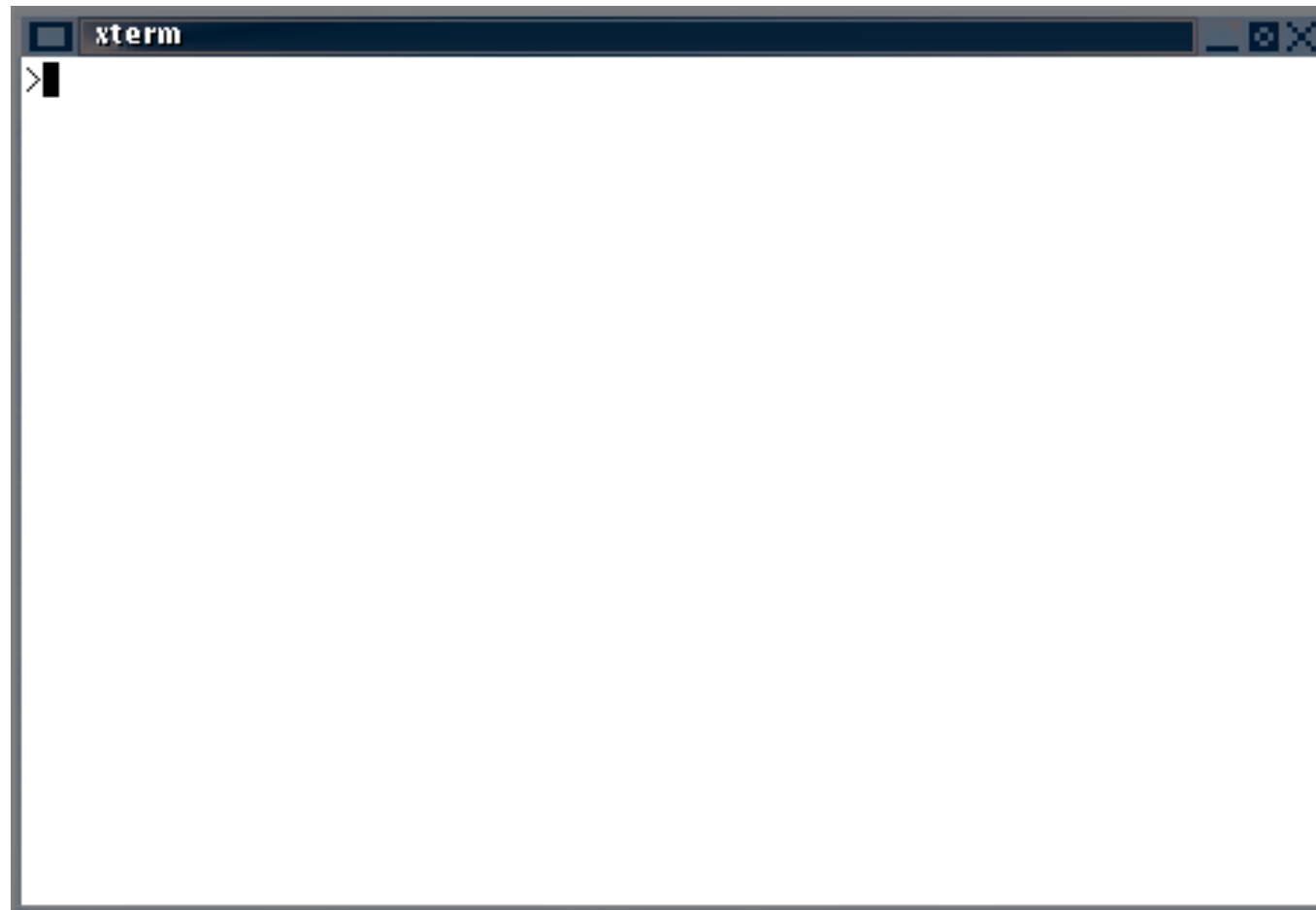
- Technically speaking:

The shell is a program that takes your inputted commands and executes them for you. Normally it resides in a *terminal window*.

- Plainly speaking:

Its the window where you can type in your commands.

The Shell (con't)



The Shell (con't)



```
xterm
>ls lab1/
Hello.class  Hello.java
>
```

The Filesystem

When people talk of *filesystems* they are normally talking about how to organize their computer's files. The UNIX filesystem is arranged in a tree-structure.

i.e. You have a base directory (called the *root*), which contains all directories and files.

The Filesystem con't

You can identify a file in two ways: using the *absolute path* and the *relative path*.

The Filesystem con't

The filesystem in use here at NADA is called AFS (the Andrew Filesystem). It is built on the concept of *cells*.

Example of cells:

- nada.kth.se
- e.kth.se
- stacken.kth.se
- transarc.com
- ...

The Filesystem (con't)

Even if the cells are geographically separated, the cells are connected to each other through the Internet. Thus it is a *distributed* filesystem.

This lets you access files in any of the other cells, provided you have rights to access them.

Access lists

Every directory has an access list associated with it.

An access list describes who can do what in a directory.

Access lists (con't)

r	read	Read files in the directory
l	list	See which files are in the directory
i	insert	Create new files in the directory
d	delete	Remove files in the directory
w	write	Modify files in the directory
k	lock	Lock files in the directory
a	administer	Change the access list for the directory

Access lists (con't)

- To view the access list for a directory:

```
>fs listacl <dirname>
```

- To set (or change) the accesslist:

```
>fs setacl <dirname> <user or group> <acl>
```

Access lists (con't)

Access list of the directory lab1

```
>fs listacl lab1
```

Access list for lab1 is

Normal rights:

```
  maja02:remote-users rlidwka
```

```
  system:administrators rlidwka
```

```
  system:anyuser l
```

```
  maja02 rlidwka
```

```
>
```

Access lists (con't)

I might want to let the user `fimblo` read and delete files in this directory.

```
>fs setacl lab1 fimblo rdl
```

Access lists (con't)

If I do a fs listacl again, I'll get this output:

```
>fs listacl lab1
```

```
Access list for lab1 is
```

```
Normal rights:
```

```
  maja02:remote-users rlidwka
```

```
  system:administrators rlidwka
```

```
  system:anyuser l
```

```
  fimblo rld
```

```
  maja02 rlidwka
```

```
>
```


Your Password

Why is a good password important?

Password Tips

- As random as possible.
- As many characters as (realistically) possible.
- Mix alphanumerics with punctuation.
- Use the **SHIFT** button every now and then.
- Don't forget to use both hands.

Password Tips (con't)

My favourite Drifvare has a heart of stone...

mfDhahos3.

mfD!hah0s3.