

## CSE2031 Software Tools - Review

Summer 2010

Przemyslaw Pawluk

Department of Computer Science and Engineering  
York University  
Toronto

July 26, 2010

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## Table of contents

### 1 C

### 2 UNIX

- Commands
- Scripts

### 3 Tests

Notes

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## Definitions and declarations

### Space allocated by definition

- `char* x = "lion"`
- `char* y[] = {"lion", "cat"}`
- `char* z[10]={"lion", "cat"}`

### How-To

- Declare pointer to ...
- Read declarations to get a type or value

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## Modifiers

- static
- extern

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## Recursion

What will be printed?

```
1 int rec(int x){
2     static int c=10;
3     c--;
4     if(x<c)
5         rec(x+1);
6     else
7         return c;
8 }
9
10 int main(){
11     int x=1;
12     printf("%d\n", rec(x));
13 }
```

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## Pointers, Pointers, Pointers

### Declarations

- Simple pointers (char\*, int\*
- Pointers to structures and arrays (char\* x[], struct x y\*)
- Pointers to pointers to ...

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## Standard functions

- strcmp
- printf
- scanf
- ...

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## Basic info about UNIX

- Process
- PID
- child process and parent process (fork function)
- Filter

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## Special characters and variables

- home
- root
- current dir
- parent dir
- PATH
- /dev/null

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## UNIX commands

## Filters

- grep !!!
- cut !!!
- wc

## Other

- ls
- more
- less
- cp
- mv

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## Pipes

Combine different commands to achieve a goal. For example find all files in your home directory that starts with 'A' and ends with '.' followed by three lower-case letters. Or count such files

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## Regular expressions

- any string that starts with any char other than lower-case letter
- any string that starts with 'X' and ends with two numbers
- any string that contains three consecutive numbers or exactly one '/'

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### Simple script in AWK

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- glass-box test
- black-box test
- code coverage
- assertions
- ...

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