

C programming hints

A C program typically consists of

- The header files
 `#include <stdio.h>`

- constants
 `#define tries 10`

- function prototypes
 `int my_func(int, char);`
 `void nu(struct *mystr);`

C programming hints

- a special function, main

```
void main(int argc, char **argv)
{
    /* your program */
}
```

- function declarations

```
int my_func(int count, char letter)
{
    int final_count;
    /* your function statements */
    return final_count;
}
```

C programming hints

Variables can be declared as

Global

○ not always a bad thing.

○ declared after includes

Local

○ inside braces

○ of main or of functions

C programming hints

Remember

- C is a small language.
- most of the constructs are the same as in java.
- It's all done with library calls

Commonly used standard libraries are

```
stdio.h    ...  input output routines
stdlib.h   ...  useful utililities
string.h   ...  string handling functions
errno.h    ...  will be very useful
```

C programming hints

Data types are mostly the same as in java

- simple types

```
int i;
```

```
char c;
```

```
float f;
```

- arrays of simple types

```
int i[10]; /*array of 10 int*/
```

```
char s[10]; /* a string of up */  
/* to 9 chars! */
```

REMEMBER ...

- array indexing runs from 0 to length - 1
- strings need a terminator '\0'

C programming hints

Pointers are an important part of C.

They are a common cause of runtime errors!

They have a type and can be thought of as a reference to the variable.

They 'point to' the variable, not its contents.

They have their own operators, & * ->

Context is the key.

C programming hints

Declaring a pointer to char:

```
char *c_p;
```

Declaring a char

```
char c;
```

Assigning an 'address' to a pointer

```
c_p = &c;
```

c_p now 'points to' c

'&' is known as the 'address of' operator

C programming hints

Using a pointer as a reference to a variable

```
*c_p = 'a'; /* 'a' is a single char' */
```

c now has the value 'a'

□ Remember !!

'a' in single quotes is a char

"a" in double quotes is a string of 2 chars