086180 - INFORMATICA APPLICATA

A.A. 2010-11

2° semestre

M06ᴮ – IL PREPROCESSOR

C Preprocessor

- has more capabilities than we will cover

- We will focus on this subset:
  - including text file into your source code
    - #include <filename> - standard library
    - #include "filename" - own directory library
  - Macro Substitution (with or without parameters)
    - a.k.a. Symbolic Constants (a symbol for a constant value)
    - e.g., #define EQUAL ==
    - would allow you to use EQUAL in place of ==
  - Conditional Compilation
    - #if, #else,   ('if' and 'else' statements)
    - #endif, #elif   ('end-if' and 'else-if' statements)
    - #ifdef, #ifndef   ('if defined' and 'if not defined' statements)
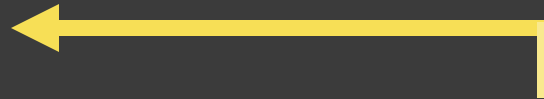
File Inclusion

- Does <u>text inclusion</u> - includes entire contents of file in your source code at the point of #include statement BEFORE it goes to the compiler to include commonly used code, declarations

- #include "filename"
  - *searches your directory for the file to include*

- #include <stdio.h>
  - *searches established list of system directories for file to include*

- .h is naming convention to indicate header file

#define

#define PI   3.14159

   will replace PI in your code with 3.14159

int PI_FACTOR = 0;

        BUT will NOT replace either one of these. Why?

printf("CHERRY PIE");

#define SECONDS_PER_DAY   (60 * 60 * 24)

will replace SECONDS_PER_DAY in your code with (60 * 60 * 24)

#define

```
#define MAX_LOOPS    15


for( i = 1; i < MAX_LOOPS; ++i)

    is replaced  BEFORE compilation by

for( i = 1; i < 15; ++i)
```

Predefined Symbolic Constants

Already defined "by the system"
Cannot be use in #define

_ _ FILE _ _	source file name (string)
_ _ LINE _ _	an integer giving line number
_ _ DATE _ _	compile date (string)
_ _ TIME _ _	compile time (string)

printf("In file %s at line # %d\n", _ _ FILE _ _, _ _ LINE _ _);
printf("on %s at %s\n", _ _ DATE _ _, _ _ TIME _ _);

prints:

In file lab4.c at line # 123
on Jan 14, 1995 at 10:38:34