

Program style and Form



Original Source :

[http://www.ftsm.ukm.my/zma/TK1914/05-Algorithm and Problem Solving.ppt](http://www.ftsm.ukm.my/zma/TK1914/05-Algorithm%20and%20Problem%20Solving.ppt)

USE OF WHITESPACE

- ▶ Insert white space characters (such as blanks, tabs and newlines) if necessary to increase the readability of your source code.

Example:

```
int matrix[][3] = {1, 0, 0, 0, 1, 0, 0, 0, 1};  
int matrix[][3] = {    1, 0, 0,  
                      0, 1, 0,  
                      0, 0, 1  
};
```

- ▶ White space characters are ignored by the compiler during compilation.
- ▶ Remember to separate reserved words and identifiers from each other and other symbols.

Example: `inta, b, c;`

This statement
is syntactically
incorrect.

COMMAS AND SEMICOLONS

- ▶ Commas separate items in a list.

Example: int a, b, c;

- ▶ All C++ statements end with a semicolon.

Example: area = length * width;

- ▶ Semicolon is also called a statement terminator.

DOCUMENTATION

- ▶ Programs are easier to read and maintain if they are well-documented.
- ▶ Comments can be used to document code
 - Single line comments begin with `//` anywhere in the line
 - Multiple line comments are enclosed between `/*` and `*/`

DOCUMENTATION

- ▶ Avoid putting in useless comments such as shown below:

```
int main() {  
    ...  
    min = elapsed_time / 60; // assign elapsed_time / 60 to min  
    sec = elapsed_time % 60; // assign elapsed_time % 60 to sec  
    hr = min / 60;           // assign min / 60 to hr  
    min = min % 60;          // assign min % 60 to min  
    ...  
}
```

DOCUMENTATION

- ▶ The program comments below are more useful:

```
int main() {  
    ...  
        // Convert elapsed_time to min:sec  
    min = elapsed_time / 60;  
    sec = elapsed_time % 60;  
        // Convert min:sec to hr:min:sec  
    hr = min / 60;  
    min = min % 60;  
    ...  
}
```

DOCUMENTATION

- ▶ Name identifiers with meaningful names.
- ▶ For example, which of the statements below is more meaningful?

```
a = l * w;
```

```
area = length * width;
```

FORM AND STYLE

- ▶ Consider two ways of declaring variables:

- Method 1

```
int feet, inch;
```

```
double x, y;
```

- Method 2

```
int a,b; double x,y;
```

- ▶ Both are correct, however, the second is hard to read

YOU SHOULD NOW KNOW...

- ▶ importance of program readability
 - using whitespace characters
 - inserting comments
 - using meaningful names for identifiers