Program Layout

Layout of a C++ Program

- Depends on the use of:
  - White Space
  - Indentation.

White Space

- ‘White Space’ is a term borrowed from parsing text.
- It refers to the visual space around words.
- It is made up of spaces, tabs and lines.
- In C++ it also includes comments.

White Space Characters

- Spaces are represented by multiple SPACE characters, code number 32 in the ASCII code.
- Tabs are represented by multiple TAB characters, code number 9 in the ASCII code.
- A Line is a string of zero or more characters terminated by End-Of-Line Characters = Carriage Return (CR) and Line Feed (LF).

Comments

- Comments are:
  - End-of-line Comments, introduced by // and running to the end of the line
  - Multi-line Comments, introduced by /* and terminated by */

Using White Space

- Use white space anywhere you like:
  - To identify related pieces of code, surround them with white space.
  - To clarify an expression, separate the pieces with spaces, etc.
  - Don’t put more than one statement per line.
Indentation

- Indentation is the most important formatting technique for making C++ code more legible and understandable.
- It is so important that we will make it compulsory.
- There are different styles and sets of rules for indentation. We will try to pick a simple rule set.

Indentation Rules (1)

- Indent using Tab characters
- Use chain brackets { and } as indicators about where to increase or decrease indentation:
  - Increase the indent level (i.e. indent further to the right by one tab) after every open-chain-bracket,
  - Decrease the indent level after every close-chain-bracket,

Example

```cpp
for (int i=0;i<10;i++)
    std::cout << i;
    s = i*3;
    std::cout << s;
}
```

Indentation Rules (2)

- If a statement has a subsidiary statement on the next line, indent the subsidiary statement by one tab.
  - E.g:
    ```cpp
    for (int i=0;i<10;i++)
        std::cout << i;
    ```

Indentation Rules (3)

- In an if-then-else statement, give the if and the else keywords the same level of indentation.
  ```cpp
  if (i<10)
      std::cout << 'Too Low Pal.';
  else
      std::cout << 'Top.';
  ```