Table c29 C++ Coding standard

Personal Software Process for Engineers

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| --- | --- |
| Purpose | To guide the development of C++ programs |
| Program Headers | All programs begin with a descriptive header. |
| Header Format | /\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/  /\* Program Assignment: the program number \*/  /\* Name: your name \*/  /\* Date: the date program development started \*/  /\* Description: a short description of the program \*/  /\* function \*/  /\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/ |
| Listing Contents | Provide a summary of the listing contents. |
| Contents Example | /\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/  /\* Listing Contents: \*/  /\* Reuse instructions \*/  /\* Includes \*/  /\* Class declarations: \*/  /\* CData \*/  /\* ASet \*/  /\* Source code in c:\classes\CData.cpp: \*/  /\* CData \*/  /\* CData() \*/  /\* Empty() \*/  /\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/ |
| Reuse Instructions | Describe how the program is used. Provide the declaration format, parameter values and types, and parameter limits.  Provide warnings of illegal values, overflow conditions, or other conditions that could potentially result in improper operation. |
| Example | /\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/  /\* Reuse Instructions \*/  /\* int PrintLine(char \*line\_of\_character) \*/  /\* Purpose: to print string, 'line\_of\_character', on one print line \*/  /\* Limitations: the maximum line length is LINE\_LENGTH \*/  /\* Return: 0 if printer not ready to print, else 1 \*/  /\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/ |
| Identifiers | Use descriptive names for all variables, function names, constants, and other identifiers. Avoid abbreviations or single-letter variables. |
| Identifier Example | int number\_of\_students; /\* This is GOOD \*/  float x4, j, ftave; /\* These are BAD \*/ |
| Comments | Sufficiently document the code so the reader can understand its operation.  Comments should explain both the purpose and behavior of the code.  Comment variable declarations to indicate their purpose. |
| Good Comment | if(record\_count > limit) /\* have all the records been processed? \*/ |
| Bad Comment | if(record\_count > limit) /\* check if record\_count is greater than limit \*/ |
| Major Sections | Major program sections should be preceded by a block comment that describes the processing that is done in the next section. |
| Example | /\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/  /\* This program section will examine the contents of the array "grades" \*/  /\* and will calculate the average grade for the class. \*/  /\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/ |
| Blank Spaces | Write programs with sufficient spacing so they are easy to read.  Separate every program construct with at least one space. |
| Indenting | Indent every level of bracket from the previous one.  Open and closing brackets should be on lines by themselves and aligned with each other. |
| Indenting Example | while (miss\_distance > threshold)  {  success\_code = move\_robot (target\_location);  if (success\_code == MOVE\_FAILED)  {  printf("The robot move has failed.\n");  }  } |
| Capitalization | All defines are capitalized.  All other identifiers and reserved words are lowercase.  Messages being output to the user can be mixed-case so as to make a clean user presentation. |
| Capitalization Example | #define DEFAULT\_NUMBER\_OF\_STUDENTS 15  int class\_size = DEFAULT\_NUMBER\_OF\_STUDENTS; |

Document Markings

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