**CPP Problem Design Example**

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| **Subject: Seven-segment Display** |
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| **Main testing concept: Basic String**   |  |  | | --- | --- | | **Basics** | **Functions** | | ■ C++ BASICS  ■ FLOW OF CONTROL  □ FUNCTION BASICS  □ PARAMETERS AND OVERLOADING  □ ARRAYS  □ STRUCTURES AND CLASSES  □ CONSTRUCTORS AND OTHER TOOLS  □ OPERATOR OVERLOADING, FRIENDS,AND REFERENCES  ■ STRINGS  □ POINTERS AND DYNAMIC ARRAYS | □ SEPARATE COMPILATION AND NAMESPACES  □ STREAMS AND FILE I/O  □ RECURSION  □ INHERITANCE  □ POLYMORPHISM AND VIRTUAL FUNCTIONS  □ TEMPLATES  □ LINKED DATA STRUCTURES  □ EXCEPTION HANDLING  □ STANDARD TEMPLATE LIBRARY  □ PATTERNS AND UML | |
| **Description:**  Write a program that prompts the user for a number and then displays the number, using characters to simulate the effect of a seven-segment display.  **Input:**  Give numbers. Please ignore the characters not number.  The number of characters in one line no more than 100.  Finish when EOF.  **Output:**  Print the input numbers by seven-segment format.  Example: If input is 83-5, then output will be  \*\_\*\*\_\*\*\_\*  |\_|\*\_||\_\*  |\_|\*\_|\*\_|  ※For convenience, the ‘\*’ above means ‘ ’, the true output use ‘ ’(blank).  **Sample Input / Output：**   |  |  | | --- | --- | | Sample Input | Sample Output | | 1234567890 | \_ \_ \_ \_ \_ \_ \_ \_  | \_| \_||\_||\_ |\_ ||\_||\_|| |  ||\_ \_| | \_||\_| ||\_| \_||\_| | |
| **■ Eazy,Only basic programming syntax and structure are required.**  **□ Medium,Multiple programming grammars and structures are required.**  **□ Hard,Need to use multiple program structures or complex data types.** |
| **Expected solving time:**  15 minutes |
| **Other notes:**  If the sample output display not clear, please copy to notepad and Observe. |