**CPP Problem Design**

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| **Subject: Set Exercise** |
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| **Main testing concept: STL**   |  |  | | --- | --- | | **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:**   |  | | --- | | Consider a text file of names with one name per line, and the names have been collected from several different sources.  A sample is shown in the following:  Brooke Trout  Dinah Soars  Jed Dye  Brooke Trout  Jed Dye  Paige Turner  There are duplicate names in the file. We would like to generate an invitation list but do not want to send multiple invitations to the same person. Write a program that eliminates the duplicate names by using the **set** template class. Read each name from the file (name.txt) and add it to the set, then output all names in the set to generate the invitation list without duplicates. |   **Input:**  Read the file named "name.txt".  **Output:**  Output on console.  **Sample Input / Output：**   |  |  | | --- | --- | | Sample Input | Sample Output | | name.txt | Brooke Trout  Dinah Soars  Jed Dye  Paige Turner | |
| **■ Easy, Only basic programming syntax and structure are required.**  **□ Medium, Multiple programming grammars and structures are required.**  **□ Hard, Need to use multiple program structures or more complex data types.** |
| **Expected solving time:**  10 minutes |
| **Other notes:** |