**CPP Problem Design**

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| **Subject:** **Design Month Class** |
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| **Main testing concept:**   |  |  | | --- | --- | | **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:**  Please define a class named **Month** to display the formatted month.   * The **abbreviation** of a month in this exercise is the first three letters of the name with initial capitalization. All upper case and all lower case are not considered as the right string input. * This class has only one variable **month(int)** for use as storing the current month. * This class has three constructors: * **Month()**: Construct a Month class that defaults to January. * **Month(char first, char second, char third)**: Use the given abbreviation to construct the Month class, the parameters represent each letter of the abbreviation. * **Month(int** **monthInt)**: Construct a Month class with the value of “monthInt”.   \*\*Note that if the given value is invalid, please set the month to January.   * You are required to implement the following member functions: * **void inputInt()**:   Read an int **x**, and modify the current month to **x**. If **x** is invalid (**x** < 1 or **x** > 12), please set the month value to 1.   * **void inputStr()**:   Read three letters a, b and c. These letters represent each letter of the abbreviation of a month. Modify the letters to the corresponding month value. If the input is invalid, set the month value to 1.   * **void outputInt()**: Print the month value. * **void outputStr()**: Print the abbreviation of the month. * **Month** **nextMonth()**: Increment month value and return the month object.   **Input:**  The **main()** function in your submission will be replaced when judging.  You can use the **main()** function in “**Other Notes**” to test your program.  The input is a series of integers or strings corresponding to the main method.  **Output:**  The output will print some variable values corresponding to the main method.  **Sample Input / Output：**   |  |  | | --- | --- | | Sample Input | Sample Output | | 5  J  u  n | Month1 = 1 Jan  Month2 = 2 Feb  Month3 = 3 Mar  Month4 = 4 Apr  Month5 = 5 May  Month6 = 6 Jun | |
| **■ 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 more complex data types.** |
| **Expected solving time:**  30 minutes |
| **Other notes:**  int main(void)  {  Month month1, month2(2), month3('M','a','r'), month4, month5, month6;  month4 = month3.nextMonth();  month5.inputInt();  month6.inputStr();  cout << "Month1 = ";  month1.outputInt();  cout << ' ';  month1.outputStr();  cout << endl;  cout << "Month2 = ";  month2.outputInt();  cout << ' ';  month2.outputStr();  cout << endl;  cout << "Month3 = ";  month3.outputInt();  cout << ' ';  month3.outputStr();  cout << endl;  cout << "Month4 = ";  month4.outputInt();  cout << ' ';  month4.outputStr();  cout << endl;  cout << "Month5 = ";  month5.outputInt();  cout << ' ';  month5.outputStr();  cout << endl;  cout << "Month6 = ";  month6.outputInt();  cout << ' ';  month6.outputStr();  cout << endl;  return 0;  } |