**CPP程式設計題**

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| **命題者︰SCY** |
| **題目名稱(中文/英文)：Array to integer** |
| **主要測試觀念：**   |  |  | | --- | --- | | **Basics** | **Functions** | | * C++ BASICS 1 * 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 | |
| **題目說明：**  Write a class that can convert a string into an integer. For example, the function should return an integer 1234 with the given string “1234”. If you do some research, you will find that there is a function named “atoi” and also the “stringstream” class that can do this conversion for you. However, in this programming project, you should write your own code to do the conversion.  Implement a class named **Atoi** to transform a string to an integer.   * The class Atoi has an attribute named **beTran(string)** to store the original string value. * The class Atoi has two constructors: * **Atoi()**: Construct a class Atoi where **beTran** is "". * **Atoi(string s)**: Construct a class Atoi where **beTran** is **s**. * You should also implement the following member functions: * **SetString(String s)**: Set **beTran** of this class to **s**. * **GetString()**: Return **beTran** of this class. * **Length()**: Return the length of **beTran**. * **IsDigital()**: Return true if **beTran** can be transformed into an integer, otherwise return false. * **StringToInteger()**: Convert **beTran** to an integer and return.   **輸入說明：**  A series of string.  \*\*The main() function is in "Other Notes", please copy it as your main function.  **輸出說明：**  The result of executing your program with the given main function.  **IO範例 :**   |  |  |  | | --- | --- | --- | |  | Sample Input | Sample Output | | 第一組測資與輸出 | 05  11  23  -10  -11  8946  1891231 | 4  520  4  2  5  4  4  1120  4  2  11  4  4  2320  4  2  23  4  4  -1020  4  2  -10  4  4  -1120  4  2  -11  4  6  894620  4  4  8946  4  9  189123120  4  7  1891231  4 | | 第二組 | 46506  -096504  56400  00494 | 7  4650620  4  5  46506  4  8  -9650420  4  6  -96504  4  7  5640020  4  5  56400  4  7  49420  4  5  494  4 | | 第三組 |  |  | |
| **附屬資料︰**  🗹解答程式：ArrayToInteger.cpp(檔名)  🗹測試資料：input.txt, output.txt |
| * 易，僅需用到基礎程式設計語法與結構 * 中，需用到多項程式設計語法與結構   ◼難，需用到多項程式結構或較為複雜之資料型態或結構 |
| **解題時間：30**分鐘。 |
| **其他註記：**  int main() {  string beTrans;  while (cin >> beTrans) {  Atoi atoi(beTrans + "20");  if (atoi.IsDigital()) {  cout << atoi.Length() << endl;  cout << atoi.StringToInteger() << endl;  cout << sizeof(atoi.StringToInteger()) << endl;  }  atoi.SetString(beTrans);  if (atoi.IsDigital()) {  cout << atoi.Length() << endl;  cout << atoi.StringToInteger() << endl;  cout << sizeof(atoi.StringToInteger()) << endl;  }  }  return 0;  } |