

## CSCI 261: Review Questions for Final Exam

### QUESTIONS ON CLASSES:

In this problem, you will implement the following Date class. This problem tests your understanding of declaring and using objects. Use const where appropriate.

**date.h:**

```
#pragma once
```

```
class Date {
```

```
    public:
```

```
        // WRITE THE DEFAULT CONSTRUCTOR
```

```
        // WRITE ANOTHER CONSTRUCTOR (WITH ALL DATA MEMBERS)
```

```
        // WRITE ONE SETTER (WITH ALL DATA MEMBERS)
```

```
        // WRITE THREE GETTERS (ONE PER DATA MEMBER)
```

```
        // WRITE AN Equal FUNCTION THAT RETURNS TRUE
```

```
        //     IF CALLER DATE IS EQUAL TO THE DATE PARAMETER
```

```
        // WRITE A Compare FUNCTION THAT RETURNS TRUE
```

```
        //     IF CALLER DATE IS EARLIER THAN DATE PARAMETER
```

```
    private:
```

```
        int day, month, year;
```

```
        // WRITE A Check FUNCTION THAT RETURNS TRUE
```

```
        //     IF VALUES OF ALL DATA MEMBERS ARE VALID
```

```
};
```

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**date.cpp:**

```
#include "date.h"
```

```
// Write the default constructor, which sets month to 1, day to 1, year to 2000
```

```
// Write the 3-parameter constructor; use Check() and set values to default if needed
```

```
// Write one of the accessor functions
```

```
// Write the member function for the equal function
```

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// Write the member function for the compare function

// Write the member function for the check function

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### Date-Program.cpp:

```
#include "date.h"
#include <iostream>
using namespace std;

int main() {

    // declare a Date object named today and set to the current date
    // (e.g., month 12, day 9, year 2015) using the 3-parameter constructor

    // declare a Date object named dueDate using the default constructor

    // use the setter function to set dueDate to 12/15/2015

    // use the Compare function, and print a message that indicates whether the
    //     due date is past OR the due date is not past.

    // declare a vector of 31 Date objects named dec (for December)

    // populate dec with the 31 days in December 2015

    // use the accessors to display dec[24]'s date, formatted as mm/dd/yyyy, using at()

    // use the Equal function and print EXAM!! if dec[14] is equal to parameter today
    // have today be the parameter and use the vector at function

}
```

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### QUESTIONS ON ARRAYS:

```
#include <iostream>
using namespace std;

const int NUM_ROWS = 2;
const int NUM_COLS = 3;

void SumCols(int nums[NUM_ROWS][NUM_COLS], int tots[ ], int rows, int cols);
void PrintArray(int nums[NUM_COLS], int count);

int main() {
    // Declare a 2D array of integers named numbers with NUM_ROWS rows
    // and NUM_COLS cols

    // Declare a 1D array of integers named totals with size NUM_COLS

    // Create a loop to initialize all the values in totals to 0

    // Create a nested loop to initialize all the values in numbers to row # * column #
    // For example, numbers[0][0] will be 0, numbers [2][2] will be 4

    // Create a function call to SumCols, pass in the array numbers, the array totals,
    //     NUM_ROWS and NUM_COLS as the number of rows and columns

    // Create a function call to PrintArray to print the values in totals

}
```

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```
void SumCols(int nums[NUM_ROWS][NUM_COLS], int tots[ ], int rows, int cols) {
    for (int c=0; c < NUM_COLS; ++c)
        for (int r=0; r < NUM_ROWS; ++r)
            tots[c] += nums[r][c];
}

void PrintArray(int nums[NUM_COLS], int count) {
    for (int i=0; i<count; ++i)
        cout << nums[i] << endl;
}
```

Write the contents of the array numbers.

Write the contents of the array totals.

In SumCols, why don't you pass the array tots by reference??