Problem 1: Num2Month

Please submit `num2month.cpp` that (which after compiling and running) transforms `1, 2, 3, ..., 12` into the corresponding month names `January, February, March, ..., December`.
Please do not use `if` or `switch` statements, or other materials we have not learned, including loops, arrays and vectors. Otherwise you will lose (at least) half of the points. There's a solution using only string and integer operations. It will make you a better programmer if you took the time to figure it out.

Please have the output formatted like the following examples: `5` is user input)

```
Integer between 1 and 12: 5
Month: May
```

- **Hint:** Make one very long string similar to (but not exactly) `"January February March ..."` in which you add spaces such that each month name "takes up" the same length. Then use `substr` to extract the month you want. Note that September has the longest name with 9 characters.
- **Note:** In the output, trailing white-space after the month name is a-okay. But white-space before the month is NOT okay, like:

  ```
  Month:   May
  ```

  where the above is NOT okay because there is too much white-space between `Month:` and `May`. Only white-space after the name of the month is okay.

Problem 2: Leap Year

Please submit `leapyear.cpp` that asks for a year strictly after 1581 AD, and then outputs if it was a leap year. What is a leap year? Usually years that are divisible by 4 are leap years, for example 1996. However, years that are divisible by 100 (for example, 1900) are not leap years, but years that are divisible by 400 are leap years (for example, 2000). (You may use more than one if statement)
Please have the output formatted like the following examples (`1996`, `1900` and `2000` are user input):

```
Enter year strictly after 1581 AD: 1996
This is: A leap year
```

```
Enter year strictly after 1581 AD: 1900
This is: Not a leap year
```

```
Enter year strictly after 1581 AD: 2000
This is: A leap year
```

Instructions:

- All code must be written originally by yourself. You are not allowed to (even partially) copy code from anyone else. Incident of cheating or plagiarism will be reported to the Dean's office and results in a zero grade in this assignment.
- (5pt) Write two programs to solve above questions. Name your files `num2month.cpp` and `leapyear.cpp`, and submit them to Gradescope. You must name the files EXACTLY as instructed, otherwise 2.5 points will be deducted each.
- (5pt) Add declaration in the beginning of each cpp file to show the ownership. See details in Homework 1.
- (10pt) Write your code with good practice as introduced in class.
- (Problem 1 40pt & Problem 2 40pt) Code compiles with Visual Studio 2022 and solves the questions. Students may lose the majority of points if their code doesn't compile with VS 2022.

  To receive full credits, the output must look EXACTLY the same as instructed above, including words, spaces, symbols, etc. Your code should not only work for the above examples, but also work for other different inputs.