```cpp
// Brianna Soriano
// Olena Bilinska
// Kenry Yu
//Demo 5:10

#include <iostream>
using namespace std;

int Greg_to_Jul(int, int, int);

void Jul_to_Greg(int, int &, int &, int &);

int main() {
  int m, d;
  //lop for numbers asked for
  for (int i = 1000; i <= 1500; i++) {
    // Febuary month and leap day
    m = 2, d = 29;
    //passing Gregorian into Julian then back to Jul_to_Greg
    //checking to see if its still Febuary after adding 1 day or if its March
    Jul_to_Greg(Greg_to_Jul(i, m, d), i, m, d);
    if (m == 2)
      cout << i <<" is a leap year.\n";
  }
  return 0;
}

//gregorian function
int Greg_to_Jul(int year, int month, int day) {
```

```cpp
  int i, j, k;

  i = year;

  j = month;

  k = day;

  int val;

//formula computes gregorian dates

  val = k - 32075 + 1461 * (i + 4800 + (j - 14) / 12) / 4 +

      367 * (j - 2 - (j - 14) / 12 * 12) / 12 -

      3 * ((i + 4900 + (j - 14) / 12) / 100) / 4;

  return val;

}


void Jul_to_Greg(int JD, int &year, int &month, int &day) {

  int i, j, k, jd;

  i = year;

  j = month;

  k = day;

  int L = JD + 68569;

  int N = 4 * L / 146097;

  L = L - (146097 * N + 3) / 4;

  i = 4000 * (L + 1) / 1461001;

  L = L - 1461 * i / 4 + 31;

  j = 80 * L / 2447;

  k = L - 2447 * j / 80;

  L = j / 11;

  j = j + 2 - 12 * L;

  i = 100 * (N - 49) + i + L;

  year = i;

  month = j;
```

```
    day = k;

}
```

```
> make -s
> ./main
1004 is a leap year.
1008 is a leap year.
1012 is a leap year.
1016 is a leap year.
1020 is a leap year.
1024 is a leap year.
1028 is a leap year.
1032 is a leap year.
1036 is a leap year.
1040 is a leap year.
1044 is a leap year.
1048 is a leap year.
1052 is a leap year.
1056 is a leap year.
1060 is a leap year.
1064 is a leap year.
1068 is a leap year.
1072 is a leap year.
1076 is a leap year.
1080 is a leap year.
1084 is a leap year.
1088 is a leap year.
1092 is a leap year.
1096 is a leap year.
1104 is a leap year.
1108 is a leap year.
1112 is a leap year.
1116 is a leap year.
1120 is a leap year.
1124 is a leap year.
1128 is a leap year.
1132 is a leap year.
1136 is a leap year.
1140 is a leap year.
1144 is a leap year.
1148 is a leap year.
1152 is a leap year.
1156 is a leap year.
1160 is a leap year.
1164 is a leap year.
1168 is a leap year.
1172 is a leap year.
1176 is a leap year.
1180 is a leap year.
```