```c
// Created by hfwei on 2022/10/6.
//

#include <stdio.h>
int main() {
  int year = 0;
  scanf("%d", &year);

  int leap = 0;

  // test: year = 25
  // test: year = 80
  // test: year = 100
  // test: year = 400
  if ((year % 4 == 0 && year % 100 != 0) ||
      (year % 400 == 0)) {
    leap = 1;
  }

//  if (leap == 0) {
//    printf("The year %d is a common year.\n", year);
//  } else {
//    printf("The year %d is a leap year.\n", year);
//  }

  printf("The year %d is a %s year.\n", year, leap? "leap"
   : "common");

  return 0;
}

```

```c
// Created by hfwei on 2022/10/6.
//

#include <stdio.h>

int main() {
  int year = 0;
  scanf("%d", &year);

  int leap = 0;

  if (year % 4 != 0) {
    leap = 0;
  } else {
    if (year % 100 != 0) {
      leap = 1;
    } else {
      if (year % 400 != 0) {
        leap = 0;
      } else {
        leap = 1;
      }
    }
  }

  if (leap == 0) {
    printf("The year %d is a common year.\n", year);
  } else {
    printf("The year %d is a leap year.\n", year);
  }

  return 0;
}

```

```c
// Created by hfwei on 2022/10/6.
//

#include <stdio.h>

int main() {
  int year = 0;
  scanf("%d", &year);

  int leap = 0;

  if (year % 4 != 0) {
    leap = 0;
  } else if (year % 100 != 0) {
    leap = 1;
  } else if (year % 400 != 0) {
    leap = 0;
  } else {
    leap = 1;
  }

  if (leap == 0) {
    printf("The year %d is a common year.\n", year);
  } else {
    printf("The year %d is a leap year.\n", year);
  }

  return 0;
}
```

```c
// Created by hfwei on 2022/10/6.
//

#include <stdio.h>

int main() {
  int year = 0;
  scanf("%d", &year);

  // we use a 0/1 integer to indicate whether the year is a leap year or not.
  int leap = 0;

  if (year % 4 == 0) {
    if (year % 100 == 0) {
      if (year % 400 == 0) {
        leap = 1;
      } else {
        leap = 0;
      }
    } else {
      leap = 1;
    }
  } else {
    leap = 0;
  }

  if (leap == 0) {
    printf("The year %d is a common year.\n", year);
  } else {
    printf("The year %d is a leap year.\n", year);
  }

  return 0;
}
```

```c
// Created by hfwei on 2022/10/6.
//

#include <stdio.h>

#define NUM 5

int main() {
  int numbers[NUM] = {23, 56, 19, 11, 78};

  int min = numbers[0];

  // iteration 0: i = 1, i < 5 holds, min = 23, i = 2
  // iteration 1: i = 2, i < 5 holds, min = 19, i = 3
  // iteration 2: i = 3, i < 5 holds, min = 11, i = 4
  // iteration 3: i = 4, i < 5 holds, min = 11, i = 5
  // iteration 4: i = 5, i < 5 fails, terminates
  for (int i = 1; i < NUM; ++i) { // iterate over the elements of an array
    if (numbers[i] < min) { // repeat doing something on each element
      min = numbers[i];
    }
  }

  printf("min = %d\n", min);

  return 0;
}
```

```c
// Created by hfwei on 2022/10/6.
//

#include <stdio.h>

#define NUM 5

int main() {
  int numbers[NUM] = {0};

  for (int i = 0; i < NUM; ++i) {
    scanf("%d", &numbers[i]);
  }

  int min = numbers[0];

  // iteration 0: i = 1, i < 5 holds, min = 23, i = 2
  // iteration 1: i = 2, i < 5 holds, min = 19, i = 3
  // iteration 2: i = 3, i < 5 holds, min = 11, i = 4
  // iteration 3: i = 4, i < 5 holds, min = 11, i = 5
  // iteration 4: i = 5, i < 5 fails, terminates
  for (int i = 1; i < NUM; ++i) { // iterate over the elements of an array
    if (numbers[i] < min) { // repeat doing something on each element
      min = numbers[i];
    }
  }

  printf("min = %d\n", min);

  return 0;
}
```

```c
// Created by hfwei on 2022/10/6.
//

#include <stdio.h>
int main() {
  int a;
  int b;
  int c;

  scanf("%d%d%d", &a, &b, &c);

  int min;
  if (a > b) {
    if (b > c) { // a > b > c
      min = c;
    } else { // a > b and b <= c
      min = b;
    }
  } else { // a <= b
    if (a > c) { // c < a <= b
      min = c;
    } else { // a <= b and a <= c
      min = a;
    }
  }

  printf("min{%d, %d, %d} = %d\n", a, b, c, min);

  return 0;
}

```

```c
// Created by hfwei on 2022/10/6.
//

#include <stdio.h>

int main() {
  int a = 0;
  int b = 0;

  scanf("%d%d", &a, &b);

  int min;
  if (a >= b) {
    min = b;
  } else {
    min = a;
  }

  printf("min{%d, %d} = %d\n", a, b, min);

  return 0;
}
```

```c
// Created by hfwei on 2022/10/6.
//

#include <stdio.h>
int main() {
  double a = 0.0;
  double b = 0.0;

  scanf("%lf%lf", &a, &b);

  double min;

  // do not use >= for doubles
  if (a >= b) {
    min = b;
  } else {
    min = a;
  }

  printf("min{%.20f, %.20f} = %.20f\n", a, b, min);

  return 0;
}

```