

1 BizzFuzz

- 1.1 Suppose you've been asked to test the following code snippet. Recall that a **leap year** is divisible by 4 except for 3 out of every 4 *centuries* where the year is not divisible by 400.

```
if (year % 400 != 0) {
    System.out.println(year + " is not a leap year");
} else if (year % 100 != 0) {
    System.out.println(year + " is a leap year");
} else if (year % 4 != 0) {
    System.out.println(year + " is not a leap year");
} else {
    System.out.println(year + " is a leap year");
}
```

- (a) Provide a method header (or, in Python, the *function definition*) for the code above.

```
public static void printLeapYear(int year)
```

- (b) Write a main method that tests the correctness of the code against a couple inputs that work as expected and a couple inputs that cause problems.

```
public static void main(String[] args) {
    printLeapYear(1900);
    printLeapYear(1904);
    printLeapYear(1905);
    printLeapYear(1908);
}
```

- (c) **Refactor** the program such that it functions correctly and can be more easily tested in the future.

```
public static void printLeapYear(int year) {
    if (isLeapYear(year)) {
        System.out.println(year + " is a leap year");
    } else {
        System.out.println(year + " is not a leap year");
    }
}

private static boolean isLeapYear(int year) {
    if (year % 4 != 0) {
        return false;
    } else if (year % 100 != 0) {
```

```
        return true;
    } else if (year % 400 != 0) {
        return false;
    } else {
        return true;
    }
}
```