Problem Set 4 Exercise #10: Name Compatibility

Reference: Lecture 10 notes

Learning objective: Characters and Strings

Estimated completion time: 60 minutes

Problem statement:

[CS1010 AY2013/14 Semester 1 PE2, Exercise 1]

Michelle and Gary are suffering from cold feet just before their wedding. They wanted to confirm if they are really suitable for each other. Michelle remembered a game she played when she was young. The game is as follows: strike off common (English) letters found in both names (for every match, only one appearance of the letter will be struck off – check the letter 'a' in sample run #2 for example). If both names have an even number of letters remaining or both names have an odd number of letters remaining, then they are said to be compatible. (Zero is considered to be an even number in this exercise.)

Eager to try this out, Michelle and Gary put their full names down on a piece of paper:

```
Michelle  April    Tan
Gary Anand Tham
```

Ignoring case and spaces, they proceed to strike off the common letters:

```
Michelle  April    Tan
Gary Anand Tham
```

The remaining English letters after the removal are as follows:

```
icellepil
Gyanda
```

The numbers of letters remaining in the two names are 9 and 6 respectively. In other words, Michelle and Gary are not compatible. Feeling discouraged, they wonder if they should really trust this game.

Write a program **compatible.c** to read in two names and check whether they are compatible. You may assume that each name consists of at most 35 characters. A name may contain only spaces or letters.

Your program should contain at least these functions: **`read_name()`** to read one name, and **`match()`** to perform the above task. You may write additional functions.

A tip is given at the end of next page.

Sample run #1:

```
Enter 2 names below:
Michelle  April    Tan
Gary Anand Tham
Number of letters remaining in 1st name = 9
Number of letters remaining in 2nd name = 6
The names are not compatible.
```

Sample run #2:

```
Enter 2 names below:
Tarzan
Jane
Number of letters remaining in 1st name = 4
Number of letters remaining in 2nd name = 2
The names are compatible.
```

Useful tip:

There is really no need to remove characters from a string (i.e. shift array) which is troublesome. You may simply replace those English letters to be deleted with some non-alphabet characters. Such non-alphabet characters shouldn't be counted later.