This lab investigates using both `cin` and `cin.get()` in order to input strings.

1. Make a copy of the program `simplestr.cpp` in your own directory and compile and run it. This program first asks you for a string using `cin`. Then it asks you for another string using `cin.get()`. You should try a variety of strings both with and without spaces.

2. The program has a potential stack security violation for the following reason. When using `cin` the length of the string is not checked against the size of the array. To illustrate the problem change the constant declaration to

```
#define MAX_LINE 5
```

and recompile the program. Run the program and enter the long string

```
i_will_clobber_the_cinget_prompt_now
```

at both prompts (if you get that far). What happens and how do you explain this? Find out where the program crashed by going into the debugger

```
gdb simplestr core
```

and using the command `where` (or `bt`). Why do you think the program crashed there?

**Assignment** Read the following carefully. You are to write a program which has the following four variables:

```
char street_address[128];
char street[128];
char streetnum[128];
int number;
```

The program should first ask the user for the complete street address, for example, the user might enter

```
9001 Stockdale Highway or Ackett Street 8006
```

and put it into the string variable `street_address[]`. Note that some countries put the street number *first* and some put it *last*. Your program must allow for both cases. The program should then scan this string and extract the number (9001 or 8006) putting it into `streetnum` as a string and using the function

```
int atoi(char str[]);
```

to convert string information into integer information. Put this number into the integer variable `number`. Note that you need to

```
#include <stdlib.h>
```

in order to use this function. The program should also scan the string and extract the street (Stockdale Highway or Ackett Street) and put it into the string variable `street[]`. Then the program should output the results to the user in the following form

```
The street number is: 9001
The street is: Stockdale Highway
```

or

```
The street number is: 8006
The street is: Ackett Street
```

Note that your program must work with any address which starts or ends with a number, not just the examples above. Email me the pathname of your program *in plain text*, not *as an attachment*. 