

CSCI 136 C++ programming

Lab exercise 9

Saad Mneimneh
Computer Science
Hunter College of CUNY

Problem 1: experiment with c strings

Write a program to perform the following:

- declare a string `s` of a certain size, say 10 for instance.
- input the string from the keyboard using the standard input stream `cin>>s`
- output the string using the standard output stream `cout<<s`
- experiment with different possibilities when you provide your input from the keyboard; for instance, what if you input:
 - a short string (less than 10 characters)
 - a medium length string (between 10 and 15 characters)
 - a long string (more than 30 characters)
 - a sentence with words separated by spaces

Find an explanation of what is happening for each case.

Problem 2: using `cin.getline`

To input a sentence into a string, use the `getline` member function of the `istream` class. Here's an example:

```
int main() {
    char s[50];
    cout<<'input a sentence\n';
    cin.getline(s,50,'\n');
    cout<<s;
}
```

The parameters of `getline` are as follows

```
getline(char * s, int n, char c='\n')
```

The function extracts characters from the stream until either the delimiter `c` is found, the limit `n - 1` is reached, or end of file is reached. The characters are stored in the specified array (c string) `s` followed by the null character `'\0'`. If the delimiter is found, it is extracted but not stored. If `n - 1` characters are extracted but the stream contains more (not counting the delimiter), the fail

bit is set and you need to clear this using `cin.clear()`.

The `get` function neither extracts nor stores the delimiter. For instance, in the following program

```
int main() {
    char s[50];
    cout<<"input a sentence\n";
    cin.get(s,50,'\n');
    cout<<s;
}
```

the input stream will extract at most 49 characters unless the delimiter is reached first (or end of file). The next input operation is assumed to start from the delimiter. If zero characters are extracted (for instance, if all characters are extracted and another `get` function follows), the fail bit is set and you need to clear this using `cin.clear()`.