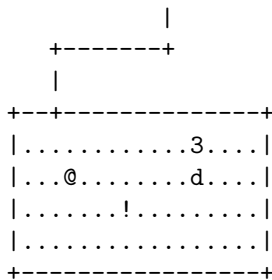


This is your first assignment. You are expected to complete the assignment in the C++ language and submit your “.cpp” file. This assignment has one required component and one challenge component. You must complete and submit the required component on or before the due date of **September 9**. This assignment is worth **3 points**, plus 2 points of extra credit.

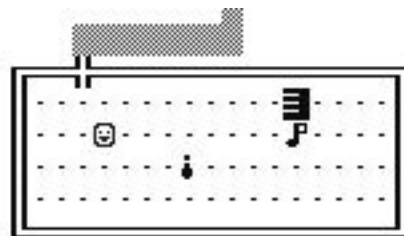
**Submission instructions:**

- Submit your assignment to me via email: sklar@sci.brooklyn.cuny.edu
- Your email subject line should be: **CISC 1110 Lab I submission**
- Include your C++ (.cpp) file in the email as a *plain text attachment*.
- Make sure your name is in the body of the email message.
- Make sure your name is also included in the comments at the top of your C++ file.

This assignment demonstrates your understanding of a simple C++ program that produces output on a computer screen. The figure below shows two versions of a screenshot from the vintage game called “Rogue”. Figure (a), on the left, uses characters from the standard ASCII table of 128 characters. Figure (b), on the right, uses characters from the “extended ASCII” table, which was created by IBM for drawing on the old IBM PC. Today, extended characters are displayed using *Unicode* (<http://www.unicode.org>).



(a) simple ASCII version



(b) extended ASCII version

**1. Required part of the assignment: (3 points)**

Write a C++ program that outputs the Rogue screen as in figure (a).

Name your file **rogue.cpp**.

*Hint:* The bottom row of output is a plus sign (+), followed by 17 dashes (-), followed by another plus sign (+).

*Note that you must do this part even if you are also doing the challenge part, below.*

**2. Challenge part of the assignment: (2 points of extra credit)**

Write a second C++ program that outputs the Rogue screen as in figure (b). You will need to use Unicode characters for some of the symbols. Use the web site (<http://www.unicode.org>) to find the Unicode values of the symbols shown, or close approximations thereof. Refer to the sample program on the back of this page (and class notes from Sep 2) for examples of outputting Unicode characters from a C++ program.

Name your file **urogue.cpp**.

*Note that if you are doing this part, you must also submit the required part of the assignment, above—so you’ll be emailing TWO files, i.e., two attachments.*

Some reference code for you:

1. The classic "hello world" program:

```
#include <iostream>
using namespace std;

int main() {
    cout << "hello world!\n";
} // end of main()
```

2. Modified "hello world" using endl:

```
#include <iostream>
using namespace std;

int main() {
    cout << "hello world" << endl;
} // end of main
```

3. Modified "hello world" using a Unicode exclamation point (!):

*NOTE that this doesn't work on Windows... A windows solution will be posted here shortly...*

```
#include <iostream>
using namespace std;

int main() {
    setlocale( LC_CTYPE, "en_us.UTF-8" );
    cout << "hello world";
    wcout << L"\u2763";
    cout << endl;

} // end of main()
```