

EEEE1032/1042 - Coursework 1 Assessment

Printing large characters

Total marks: 100

In this coursework assessment you are to create `.c` programs that accomplish the tasks described in the problem statement below. This coursework assessment is made available to the students on Wed Nov 16th and is due back uploaded on Moodle by 5pm, Wednesday Nov 30th. Please submit your programs on Moodle by the due date. This assessment is worth 10% of your final grade.

Marking Rubric

- 0-25%: Codes undeveloped or did not compile properly.
- 26-50%: Codes developed and compiled, but not achieving expected result, programs are buggy or inefficient.
- 51-75%: Codes developed and compiled and results are correct, but modularity/clarity/commenting practices are not well followed.
- 76-100%: Codes developed and compiled with correct results and with clear, well-commented code and modularity rules being demonstrated/followed.

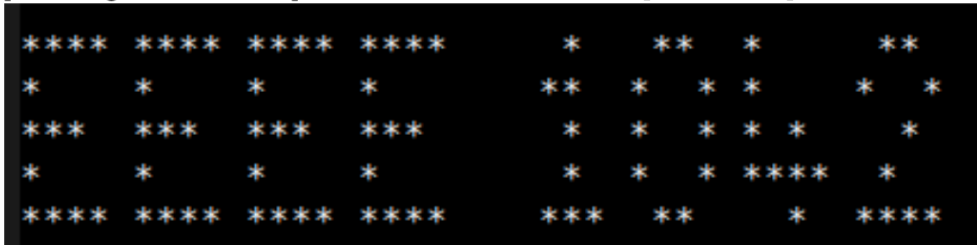
Plagiarism statement: The codes you submit are to be developed by the student alone. Any codes which are **significantly** similar to each other, or to code found on the internet will be penalized as plagiarism and points will be deducted accordingly.

Problem statement

In practical 1, you were given the task to create some specific big text using ascii art with the `printf()` statement as shown in Figure 1

2.2.3 Printing big text

As one additional exercise in creating functions and printing, add a subfunction called `printBigText()` in the `printData.c` file and have it print an output text like this:



and below that have some nice large text that also prints out your name.

Figure 1: Previous ascii-art printing from practical1

In this assessment, you are to write a program that expands on this by being able to take input strings from the command line, and generates large ascii-art text based on these user input strings.

The program should meet the following requirements:

1. The program should take its input strings from the command line [10 marks]
2. The program should return its output to the screen.
3. The program should generate ascii-art text for all upper-case characters where each ascii character is an array of at least 5×5 pixels. [50 marks]
4. In addition to upper case characters, the program should generate ascii-art numbers. Lower case characters are not required. [15 marks]
5. The program should also generate the basic punctuation characters:
! ? # * () [] , . [15 marks]

6. In the event an unacceptable character is in the input stream, the output ignores the illegitimate characters but prints all the legitimate ones. Ensure there is a column of spaces between each big character as shown in Figure 2. [10 marks]

Examples of the program execution and output is shown in Figure 2:

```
$ ./a.out "THE QUICK BROWN FOX" "EEEE1042!" "AbCdEfG?"
string=THE QUICK BROWN FOX
***** * * *****      *** * * ***   *** * *      ***** ***** *** * * * * *      ***** *** * *
* * * * *      * * * * * * * * * * * * * * * *      * * * * * * * * * * *      * * * * *
* ***** * * *      * * * * * * * * * * * *      ***** ***** * * * * * * * * *      ***** * * * *
* * * * *      * *** * * * * * * * * * * * *      * * * * * * * * * * * * * * *      * * * * *
* * * * * *****      ***** ***   ***   *** * * *      ***** * * * * * * * * * * *      * * * * *
string=EEEE1042!
***** ***** ***** *   *** *   *** *
* * * * * * * * * * * * * * * * * * * * *
**** ***** ***** * * * * * * * * * * *
* * * * * * * * * * * * * * * * * * * *
***** ***** ***** ***   *** *   ***** *
string=AbCdEfG?
*           ***           *****           ***   ***
* *         * * *         *           * * * * *
***         *           *****           * * * *
* *         * * *         *           * *
* *         ***         *****           *** *
```

Figure 2: Example calling and output of the program to print out big text.

The student is to write the program to achieve the above-described tasks and submit it via the Moodle web-page by Wed Nov 30th, along with a 3~5 page report on the tasks, approaches and successful/unsuccessful methods tried/accomplished by the student during the completion this coursework. In your report include a screenshot similar to the one shown in Figure 2 as well as a screenshot of a printing of your name.