Loops

Workshop 3 (out of 10 marks - 2% of your final grade)

In this workshop, you will code and execute a C-language program that replicates workshop 1. However, you are allowed to print one character at the time for printing lines and spaces and use loops to print repetitive characters.

The output must be exactly like workshop one (at_home) but instead you must print the following phrase in the frame:

```
"IPC144 SCP Workshop III"
```

Have your source code in a file called “w3.c”.
The following rules must be followed:

1- You are only allowed to create one integer variable for this workshop.
2- For printing the frame and the phrase you are only allowed to use the following print statements:

```
putchar(' '); // to print a space
putchar('+'); // to print +
putchar('-'); // to print –
putchar('\n'); // to print a newline
putchar('|'); // to print the bar character (|)
printf("IPC144 SCP Workshop III"); // to print the phrase
```

3- You have to use all three types of loops for repetitive characters in a line: for-loop, while-loop and do-while-loop
4- To enforce rule number two:
   You are not allowed to print the same statement two times back to back, for example:

```
putchar('+');
putchar('\n');// this is ok
putchar(' ');
putchar(' '); // this is not ok (same two putchar(‘ ‘) printed back to back
```

LEARNING OUTCOMES

Upon successful completion of this workshop, you will have demonstrated the ability to use all three different types of loops.

SUBMISSION POLICY

The "in-lab" section is to be completed during your assigned lab section. It is to be completed and submitted by the end of the workshop period. If you attend the lab period and cannot complete the in-lab portion of the workshop during that period, ask your instructor for permission to complete the in-lab portion after the period. If you do not attend the workshop, you can submit the "in-lab" section along with your "at-home" section (with a penalty; see below). The "at_home" portion of the workshop is **due no later than four (4) days following the in-lab assigned date (even if that day is a holiday) by 11:59PM.**

All your work (all the files you create or modify) must contain your name, Seneca email and student number.

You are responsible to back up your work regularly.

Late submission penalties:

- There is no in_lab for this workshop; this workshop has only one at_home part.

AT-HOME SECTION (60%)

Execution and Output Example:

```
+---------------------------------+
|                                 |
|     IPC144 SCP Workshop III     |
|                                 |
+---------------------------------+
```

For submission instructions, see the SUBMISSION section below.

AT-HOME REFLECTION (40%)

Please provide answers to the following in a text file named **`reflect.txt`**.

1- If you had to only use one type of loop, which one you would have used and why?

2- Based on the lecture in class explain what scenario each loop is good for:
While loop is better to be used when:
do While loop is better to be used when:
for loop is better to be used when:

Reflections will be graded on clarity of thought, grammar and spelling.

Note: when completing the workshop reflection, it is a violation of academic policy to cut and paste content from the course notes or any other published source, or to copy the work of another student.

AT_HOME SUBMISSION:

To test and demonstrate execution of your program using the same data as the output example above.

If not on matrix already, upload your `w3.c` and `reflect.txt` to your matrix account. Compile and run your code and make sure everything works properly.

```
AtThePrompt> gcc -Wall w3.c –o ws <ENTER>
```

Then run the following script from your account: (replace profname.proflastname with your professors Seneca userid and replace **sxx** with your section)

```
~fardad.soleimanloo/submit 144SCP_w3_home <ENTER>
```

and follow the instructions.

Due date for a full mark is Friday Feb15th, 23:59.