

INTRODUCTION TO SCIENTIFIC AND ENGINEERING COMPUTATION

Assignment 1

March 2021

Objective: Tracking the score of one game in tennis.

Description

(taken from Wikipedia) In tennis, a game consists of a sequence of points played with the same player serving. A game is won by the first player to have won at least four points in total and at least two points more than the opponent. Scores from zero to three points are described as "0", "15", "30", and "40". If at least three points have been scored by each player, making the game score "40-40", the score is called out as "deuce". If at least three points have been scored by each side and a player has one more point than the opponent, the score of the game is "advantage" for the player in the lead.

Assignment

Write a C program that will get the outcome of each point (1 for player 1, and 2 for player 2) and print the status of the game. At the end of the game, the program will report the winner.

Below is an example run (*italic parts are user inputs*):

```
0-0
Point: 1
15-0
Point: 1
30-0
Point: 1
40-0
Point: 2
```

```
40-15
Point: 1
GAME: PLAYER 1
```

Another example involving a deuce:

```
0-0
Point: 1
15-0
Point: 2
15-15
Point: 2
15-30
Point: 2
15-40
Point: 1
30-40
Point: 1
DEUCE
Point: 1
ADVANTAGE: PLAYER 1
Point: 2
DEUCE
Point: 2
ADVANTAGE: PLAYER 2
Point: 2
GAME: PLAYER 2
```

You don't need to validate user inputs; you can assume that the user always enters 1 or 2.

Rules

- Your source code file has to have the name "assignment1.c".
- Your program will be compiled using the following command on a Linux system. If it cannot be compiled and linked using this command, it will not be graded (failed submission).

```
gcc -std=c99 -Wall -Werror assignment1.c -o assignment1
```

- Your program will be checked using an automatic checker. Therefore, make sure you print the messages exactly as given in the example runs. You will be given a Calico test file for some basic I/O tests; run your assignment through Calico before submitting.

- Do NOT use statements for clearing the terminal or waiting for a keypress before exiting the program; these might cause your program to fail in the automatic tests. Some IDEs generate such statements, remove them. Running your program through Calico is the safest way to make sure that your program works as expected.
- Do NOT use any construct that hasn't been covered in the course before this week, such as arrays or functions. Do NOT use any C++ features such as `cout` and `cin`.
- Do NOT use any external functions except for `printf` and `scanf`.
- Make sure your coding style is proper and consistent. Use the `clang-format` tool if necessary. Don't use any variable names in a language other than English.
- This is an individual assignment. Collaboration in any form is NOT allowed. No "working together", no sharing code in any form including showing code to your classmates to give them ideas.
- All the code you submit must be your own. Don't copy/paste any piece of code from any resource including anything you've found on the Internet.
- The assignments will be checked for plagiarism using both automated tools and manual inspection. Any assignment involving plagiarism and/or infringement of intellectual property will be not be graded and is subject to further disciplinary actions.