VE482 — Introduction to Operating Systems

Lab 7

Manuel — UM-JI (Fall 2018)

Goals of the lab

- Advanced used of GDB
- Understand source codes from others
- Fixing bugs

Introduce a maximum of five bugs in the implementation of the library created in lab 4 such that the program crashes. Submit your code on Canvas together with the original one, a list of input or actions that lead to a crash and the corresponding correct output. Each bug should be rated with a number of credits to be won when it is fixed. The total credits for all the bugs of a team should be 10.

On the Lab you will be provided with all the programs, except yours. The goal will be fix as many bugs as possible using GDB. The winning team will get a bonus (to be precisely defined at some stage this week).

The final score is calculated as follows:

- Initial score is 0 for all the team.
- When a team solves a bug it gets its corresponding credits.
- The team who created the bug loses a number of credits equal to the credits corresponding to the fixed bug, times the number of teams who fixed it.
- At the end all the scores are calculated and the teams are ordered in increasing order with respect to their final score. In case of a tie, groups are ordered with respect to the number of bugs they fixed and if this is still a tie the number of their bugs fixed by other teams is considered.

Example: team A wrote 3 bugs, a_1, a_2 and a_3, worth 1, 3 and 6 credits respectively. Team B wrote 5 bugs, b_i, $1 \leq i \leq 5$, worth $\frac{1}{2}, \frac{1}{2}, 1, 3$ and 5, respectively. Team C wrote 1 bug worth 10 credits. Assume team A fixes b_1, b_2 and b_5, team B fixes a_1 and a_3, and team C fixes b_5 and a_2. The final scores are then:

- Team A: $\frac{1}{2} + \frac{1}{2} + 5 - 1 - 6 - 3 = -4$
- Team B: $1 + 6 - \frac{1}{2} - \frac{1}{2} - 5 \times 2 = -4$
- Team C: $5 + 6 = 11$

Team C wins and since team A fixed one more bug than team B the order is then: 1st team C, 2nd team A, 3rd team B.

Few important notes:

- Cheating by providing other teams with an incomplete code (e.g. removing a function) or a code that does not compile will result in a penalty of -10 marks on the labs.
- It is allowed to obscure the code by adding useless computation or express simple things in a complex manner.
- The source code should be easily readable (e.g. writing the whole program on a single line is not allowed).