Informatics II, Spring 2023, Exercise 0

Publication of exercise: February 19, 2023
Publication of solution: no solutions
Exercise classes: February 20 - 24, 2023

For exercise zero you are not expected to prepare anything before the exercise classes. Note that the exercise classes take place during the first week of the semester. During the exercise class you will perform the necessary installations and then write and run a simple C program. Doing this is important so you are prepared for the exercises in the upcoming exercise classes.

Task 1

Windows: Installation and use of MinGW and vscode:

- https://www.msys2.org/: run msys2-x86_64-20221216.exe
- run MSYS2 UCRT64 shell
- pacman -S mingw-w64-ucrt-x86_64-gcc
- pacman -S mingw-w64-ucrt-x86_64-gdb
- pacman -S mingw-w64-ucrt-x86_64-mesa
- pacman -S mingw-w64-ucrt-x86_64-freeglut
- install visual studio code
- from UCRT64 powershell run /c/Program Files/Microsoft VS Code/bin/code

On Linux (e.g. Ubuntu, Fedora) and MacOS, the gcc compiler should already be installed. Run the command "gcc -v" to double-check this.

Task 2

Compile and run the following C code. Explain what the program outputs.

```
#define n 5

int j, q;
int a[] = {11, 1, 4, -3, 22};

int main() {
```

```
    j = 0; q = -3;
    while (j < n && a[j] != q) { j++; }
    if (j < n) { printf("%d\n", j); }
    else { printf("NIL\n"); }
}
```

Task 3

The goal of this task is find the second largest integer in an array of integers.

Input: An array $A[1..n]$ with n distinct integers, where $n \geq 2$.
Output: the second largest integer in A.

Write a pseudocode algorithm as well as a C code program for this task. Compare the differences between the C code program and its pseudocode counterpart.