EF234405 Design & Analysis of Algorithms (IUP)

Quiz 1

Starting date: 22 March 2024
Deadline: 29 March 2024, 23:59 WIB. **Penalty: 0.15% of grade/minute of tardiness.**
Exam type: Open, Individual Project
Send to:

MM Irfan Subakti <yifana@gmail.com>
CC to Mashita Dewi <mashitaad@gmail.com> & Adam Haidar Azizi <adamhadaizi2002@gmail.com>, Michael Ariel Manihuruk <michaelariel8@gmail.com> & Tsabita Putri Ramadhany <bitharamadhany@gmail.com> with the subject:
EF234405_DAA(IUP)_Q1_StudentID_Name

File type and format: A **full report** of the title, problem description, problem abstraction, solution and source code; in **PDF** format
Filename format: **EF234405_DAA(IUP)_Q1_StudentID_Name.PDF**

Instruction
Please do these steps as in the following.

1. Two problems that need to be solved are the following.

   (1) SPOJ Classical 9034 - Help Tohu
       https://www.spoj.com/problems/TOHU
       Time complexity: $O(1)$

   (2) SPOJ Classical 14138 - Amazing Factor Sequence
       https://www.spoj.com/problems/AFS
       Time complexity: $O(\sqrt{n})$

2. For each problem above, please explain in detail the following sections.
   - The title of the problem (2%)
   - Problem description (3%)
   - Problem abstraction (10%)
   - Solution (75%)
     - Details of the strategy of the algorithm: observations and theory references
     - Any relevant concept(s) used for solving the algorithm's design
     - Design of algorithm in the pseudocode representation
   - Source code for SPOJ (10%)

3. If you don't have an account on SPOJ.com, please sign up at **www.spoj.com**. Make a proper account's name and location (*country*: Indonesia; *city*, e.g., Surabaya). Most importantly, please don't forget to put "Institut Teknologi Sepuluh Nopember" for the *institution*'s name.

4. Please also write in your report, your SPOJ account's **name** & **password**, as in the following.

   SPOJ's account's name: <write_your_account_name_here>
   SPOJ's account's password: <write_your_account_password_here>

5. Once you have a SPOJ account, please solve these problems as in the following. Submit your solution's code to SPOJ and make sure it's **accepted by SPOJ** for each problem. You have to include the evidence of the submission and the "accepted" verdict in your report.

6. To avoid plagiarism/cheating, every student needs to pledge and declare, then she/he must submit her/his **signed pledge and declaration** as in the following. Failing to do so will result in getting a 0 (zero) grade. Attach the **scanned/photo** of your *declaration* to your report.

"By the name of Allah (God) Almighty, herewith I pledge and truly declare that I have solved quiz 1 by myself, didn't do any cheating by any means, didn't do any plagiarism, and didn't accept anybody's help by any means. I am going to accept all of the consequences by any means if it has proven that I have done any cheating and/or plagiarism."

[Place, e.g., Surabaya], [date, e.g., 29 March 2024]

<Signed>

[Full name, e.g., Rianti Linuwih Dewi]
[StudentID, e.g., 5025221xxx]

7. Have a lovely day, guys! Good luck! 😊