IF184401 Design & Analysis of Algorithms (H)

Quiz 1

Starting date:	03 March 2023
Deadline:	10 March 2023, 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 Nurul Izzatil Ulum <izzalum07@gmail.com> with the subject: **IF184401_DAA(H)_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:	**IF184401_DAA(H)_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) 7704 Civil Engineering: https://www.spoj.com/problems/CIVIL/

   (2) 12746 Colorful Circle (EASY): https://www.spoj.com/problems/CRCLE_UI/

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%)

   (1) 7704 Civil Engineering: use the variations of integral and differential which should have already been discussed in Calculus lectures.
   (2) 12746 Colorful Circle (EASY): use the recurrences relations which should have already been discussed in Discrete Math lectures.

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*: 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 got 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 be resulted 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., 10 March 2023]

   <Signed>

   [Full name, e.g., Riyanti Ambarwati]
   [StudentID, e.g., 05112140000xxx]

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