**MARMARA UNIVERSITY**

**DEPARTMENT OF INDUSTRIAL ENGINEERING**

**CSE143 - COMPUTER PROGRAMMING FOR INDUSTRIAL ENGINEERS**

**TERM PROJECT**

**By: Res. Asst. Dr. Berna ALTINEL - Res. Asst. M. Umut İZER**

**FALL 2020-2021**

**Due: January 20, 2021 (Wednesday)**

* Project shall be done as groups including EXACTLY 6 members.
* No certain project topic. Each group should identify their own meaningful and original topic which models a real-world problem/system.
* Submitting the same project from previous semesters will result in a zero grade.
* Copy and imitation is not allowed, these attempts will result in a grade of zero.
* If you use a method etc. available on the literature or on a web page, you should give citation to the author. Otherwise, you may encounter a penalty code for plagiarism.
* Project due date is, 20.01.2021 Wednesday. No submission after due date.
* Besides your codes, you have to submit a brief project report of at least three pages.
* You have to write your project report according to the project report template. Otherwise, your project report will NOT be graded.
* The project report (in pdf or doc format) and your working/executable Java project (exported as a zip/rar archive file) should be uploaded together to Google Classroom WITHOUT BEING COMPRESSED as two individual files. Wrong file type, incorrect/unfinished submission and obsolete code will NOT be evaluated.
* You should not include your codes in your report.

The report will contain 4 main parts and a cover page:

* Introduction/Aim of the project
  + Give brief information about your project topic, and describe the aim of the project. A literature review of **at least** three research papers should be included.
* Implementation
  + Give all necessary details about the design of classes, used data types and objects, and relationship between these units.
  + You should also explain how you satisfy the requirements of the project.
* Conclusion
  + What are the results achieved by your project? Is the designed system consistent with the aim of the project? How would an end-user use the designed system? Can it be a model for real world problems? Which possible improvements can be done as a future study?
* References
  + References must be given according to the reference styles given below.
  + Incorrect referencing will result in a decrease in your grade.

The writing style of the report is:

* Main text: 12 pt., Calibri, 1.5 line spacing, justified
* Titles: 14 pt., Calibri, Bold
* References: APA style, alphabetical, 12 pt., Calibri, 1.5 line spacing, justified

Requirements for your project are included below.

* At least 2 predefined Java classes should be imported and used.
* Besides Main method, class has to include 4 other methods.
  + At least 2 methods must require parameters.
  + At least 2 methods must return a value back.
* Arrays should be used at least once.
* Pass by value of at least two parameters to methods should be handled properly.
* At least 2 different loop algorithms (for or while or do-while).
* At least 2 different selection algorithms (if-else or switch-case or conditional).
* At least 1 constant (final) variable.
* At least 2 strings, at least one of them being entered from the console.
* At least 4 input data (except strings) with different data types.
* At least 3 output data.
* At least 2 continue or break statements.
* Type casting should be applied at least once.
* The program should ask the user to enter values for at least 2 different variables.
* The results should be prompted on screen in order to inform the user.