UTI 526 Object Oriented Programming
2nd Homework
Assignment Date: 18.03.2024
Due Date: 25.03.2024

From: Java How to Program, Early Objects (10th Edition), Paul J. Deitel and Harvey Deitel, Pearson, 2015.

6.35. *(Computer-Assisted Instruction)* The use of computers in education is referred to as computer-assisted instruction (CAI). Write a program that will help an elementary school student learn multiplication. Use a SecureRandom object to produce two positive one-digit integers. The program should then prompt the user with a question, such as

How much is 6 times 7?

The student then inputs the answer. Next, the program checks the student's answer. If it's correct, display the message "Very good!" and ask another multiplication question. If the answer is wrong, display the message "No. Please try again." and let the student try the same question repeatedly until the student finally gets it right. A separate method should be used to generate each new question. This method should be called once when the application begins execution and each time the user answers the question correctly. **(25 points)**

6.36. *(Computer-Assisted Instruction: Reducing Student Fatigue)* One problem in CAI environments is student fatigue. This can be reduced by varying the computer's responses to hold the student's attention. Modify the program of Exercise 6.35 so that various comments are displayed for each answer as follows:

Possible responses to a correct answer:

Very good!
Excellent!
Nice work!
Keep up the good work!

Possible responses to an incorrect answer:

No. Please try again.
Wrong. Try once more.
Don't give up!
No. Keep trying.

Use random-number generation to choose a number from 1 to 4 that will be used to select one of the four appropriate responses to each correct or incorrect answer. Use a switch statement to issue the responses. **(35 points)**

6.37. *(Computer-Assisted Instruction: Monitoring Student Performance)* More sophisticated computer-assisted instruction systems monitor the student's performance over a period of time. The decision to begin a new topic is often based on the student's success with

previous topics. Modify the program of Exercise 6.36 to count the number of correct and incorrect responses typed by the student. After the student types 10 answers, your program should calculate the percentage that are correct. If the percentage is lower than 75%, display "Please ask your teacher for extra help.", then reset the program so another student can try it. If the percentage is 75% or higher, display "Congratulations, you are ready to go to the next level!", then reset the program so another student can try it. **(40 points)**

Important Notes:
1. All source code and related homework reports should be submitted via Ege Ders platform: 2023 - 2024 Bahar Dönemi → Enstitüler → Fen Bilimleri Enstitüsü → Uluslararası Bilgisayar → Bilgi Teknolojileri ve İnternet Güvenliği → İÖ - Nesne Yönelimli Programlama - 540443 - 2324B → Hafta 5: Methods: A Deeper Look → Homework 2.
2. Do not forget to include appropriate comments in the source code. Hence the grader can easily understand the program during his/her assessment.
3. Write the programs in a simple and straightforward manner by considering object-oriented analysis and design principles.
4. Each report should include the printout of the related source code, two or more screenshots (depending on the illustration requirements) which exemplify execution of the programs and proper UML diagrams.
5. Homework reports are MANDATORY! Sending only source code without reports including the above mentioned content is subject to getting lower points.
6. IMPORTANT NOTICE: There will be significant point deductions for late, copied or shared submissions.