Quiz #02 – OOP – BSDSF22

05 Oct 2023 30-40 minutes

Name: _____ **Roll No**: _____

Honor Code: By signing below, I am declaring under oath that I will solve the quiz by myself solely and will not take any help from neighboring fellows. Signature

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Teendas are objects consisting of sequences of 3 or 5 integers, with the middle integer being larger than those at the ends, and the left side being larger than the right side. For example, <4, 5, 2>, <30, 200, 29>, <2000, 20000, 1>, <23, 35, 40, 30, 20> are teendas, while <1, 2, 3> is not a teenda because the middle is not larger than the right, and <5, 9, 7> is not a teenda because the left is not bigger than the right. <4, 5, 6, 1> is not a teenda as it does not consist of 3 or 5 integers but rather has 4, and <22, 12, 76, 15, 10> is also not a teenda.

It is worth noting that teendas are either composed of 3 or 5 integers. 3-integer teendas may grow into 5-integer teendas, and 5-integer teendas may split into two 3-integer teendas as spontaneous processes. In the growing process, the values to be placed at the 2nd and 4th positions are integer averages of the first two and last two values, respectively. In the splitting process, half of the middle value goes to the first one as the 3rd value, and the other half goes to the 2nd one as the 1st value. If, during the growth and split processes, the requirements of the teenda class are not fulfilled, the new objects will die.

There is a member function of teenda objects named 'mutate' to grow or split depending on a random number to simulate these spontaneous processes.

You need to describe (specify data members with their types) a class for the above-mentioned teenda objects. Later, in the main logic, create some teenda objects, and then in a loop, mutate the objects. The main logic must display the appropriate output of the activities happening.