**Exam console application**

You are requested to implement a simple Exam console based application to support the following features:

* You shall support the following question types:
  + Yes/No questions
  + Multi-select questions
  + Single selection questions
  + Essay question
* You should have predefined questions in your code, ten questions at least (see samples below)
* Once the application starts, it shall ask the user to select between two choices, as below:

*Welcome to exam console:*

*1 - Take an exam*

*2- Display exam results*

*Please enter your choice:*

* If the user selects the first option, it shall asks the user to enter his name, start an exam for him by selecting randomly five questions from the predefined questions, then start the exam by displaying one question at a time to get the answer for each one:
  + If the question is Yes/No question, it shall accepts Y or N as answer
  + If the question is multi-select question, the question shall be displayed along with its options then the user needs to enter a comma separated text of options numbers
  + If the question is a single select, the question shall be displayed along with its options then the user needs to enter only the option index selected
  + If the question is an essay question, the question shall be displayed then the user shall enter a free text for the answer, the checking for answer shall be case insensitive
* Once the user finishes the exam, you shall display his score then display the main menu again to allow him to take another exam or display exam results.
* If the user chooses option 2 “Display exam results”, the application shall display all exam tackers names and their results and the average score for tackers.

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| --- | --- | --- | --- | --- |
| *#* | *Question* | *Type* | *Expected result/options* | *answer* |
| *1* | *What is the capital of Canada?* | *Essay* | Ottawa | Ottawa |
| 2 | Albert Einstein was born on 1879 (Yes/No) | *Yes/No* | *Yes* | *Yes* |
| *3* | *What is true for Integer x = 10?* | *Single select* | *1- The code will not compile*  *2- The value of 10 will be represented as an Integer Object*  *3- 10 is a short literal*  *4- The code will compile but it will throw a Runtime Exception in runtime* | *2* |
| *4* | *What is true for “Ahmad”.replace(“a”,”A”);* | *Multi-select* | *1- There is no such method as replace*  *2- The result will produce “ahmAd”*  *3- A new string will be returned which has the contents of “AhmA”*  *4- replace is an instance method* |  |
| *5* | *If class A extends B, what is true?* | *Multi-select* | *1- You can assign a reference for A to a reference to B without explicit casting*  *2- Object x = new A(); will not compile*  *3- Object a = new A(); B b = (B)a; will throw a ClassCastException on run time.*  *4- A a = new A(); A a = new B(); will not compile* |  |
| *6* | *Instanceof operator is used to check if an instance belongs to a type* | *Yes/No* | *Yes* |  |
| *7* | *What is the result of 3\*4+5\*10-20 ?* | *Essay* | *42* |  |
| *8* | *I \_\_\_\_\_ tennis every Sunday morning* | *Single select* | *1- playing*  *2- play*  *3- am playing*  *4- am plan* |  |
| *9* | How many students in your class \_\_\_\_\_ from Korea? | *Single select* | *1- Comes*  *2- come*  *3- came*  *4- are coming* |  |
| *10* | I \_\_\_\_\_\_\_\_ for my pen. Have you seen it? | *Single select* | *1- will look*  *2- looking*  *3- look*  *4- am looking* |  |