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| **LAB211 Assignment** | **Type:** | **Short Assignment** |
| **Code:** | **J1.S.P0065** |
| **LOC:** | **70** |
| **Slot(s):** | **1** |

**Title**

Check data format.

**Background**

N/A

**Program Specifications**

Create a program allows input:

* + Student information includes: Student name, class name, the marks Math, Physical and Chemistry in the range from 1 to 10.

Display on screen the information:

* + Student Type following the conditions:
    - A: mark > 7.5.
    - B: 6 <= mark <= 7.5.
    - C: 4 <= mark < 6 .
    - D: mark < 4.
  + Student Type statistics by %.

***Function details:***

**Function 1:** Display GUI And Input Data.

* Users run the program. The program prompts users to input Student data.
* When users stop inputting Student data, next **Function** **2**.

**Function 2:** Perform function

* The program classifies students and gives student rank statistics by %.
* Display notify result of students together with statistic result and exit the program.

***Expectation of User interface:***

====== Management Student Program ======

Name:Nghia

Classes:FU1

Maths:11

Maths is less than equal ten

Maths:-1

Maths is greater than equal zero

Maths:

Maths is digit

Maths:10

Chemistry:11

Chemistry is less than equal ten

Chemistry:-1

Chemistry is greater than equal zero

Chemistry:

Chemistry is digit

Chemistry:10

Physics:11

Physics is less than equal ten

Physics:-1

Physics is greater than equal zero

Physics:

Physics is digit

Physics:10

Do you want to enter more student information?(Y/N):Y

Name:Nghia 2

Classes:FU1

Maths:10

Chemistry:10

Physics:10

Do you want to enter more student information?(Y/N):N

------ Student1 Info ------

Name:Nghia

Classes:FU1

AVG:10.0

Type:A

------ Student2 Info ------

Name:Nghia 2

Classes:FU1

AVG:10.0

Type:A

--------Classification Info -----

A: 100.0%

B: 0.0%

C: 0.0%

D: 0.0%

1

2

**Guidelines**

**Student must implement the methods**

* createStudent
* averageStudent
* getPercentTypeStudent

**in startup code.**

**Suggestion:**

Create a class Student contains the following properties:

* Student Name, Class, Math, Physical, Chemistry, Average, Type.

Create a class Mark Calculation, classify students, calculate Student Type statistics, and set the results on Student object.

Give the statistics:

A:? %

B:? %

C:? %

D:? %

**Function1:** Input student information

* Must create function: Student createStudent(String name, String classes, double maths, double chemistry, double physics)
  + Input:
* name: Student name
* classes: Class.
* maths: Math mark.
* chemistry: Chemistry mark.
* physics: Physical mark.
  + Return:
* Student object.

**Function 2:** Student classification.

* Write Function: List<Student> averageStudent(List<Student> students)
  + Input:
* students: the list of students not classified yet.
  + Return: the list of students already classified.

**Function3:** Student Type Statistics.

* Must create function: HashMap<String, Double> getPercentTypeStudent(List<Student> students)
  + Input:
* students: the list of students already classified.
  + Return: Student Type statistics by % by the key A,B,C, D.