LAB 1121 AOOP

1. **Practice of Database (MySQL Workbench)**

   According to the lecture, you should complete the following requirements:

   1) Create a new schema.
   2) Create a new table with four columns, id, name, course, score. The primary key is id.
      a) id: int
      b) name: char(20)
      c) course: char(20)
      d) score: int
   3) Add two data manually into schema:
      a) ”1”, “innnnn”, “DSP”, “100”
      b) “2”, “moe”, “AOOP”, “87”
   4) Add another two data from “csv”
   5) You have to use SQL command to complete this problem except for loading data from “csv”.

   Sample Output

	id	name	course	score
▶	1	innnnn	DSP	100
	2	moe	AOOP	87
	3	leo	ML	84
	4	TWGG	JAVA	99
*	NULL	NULL	NULL	NULL

2. **Practice of Database (Connection with Qt)**

   According to the lecture, you should write a Qt widgets application to get the data from database which you create in Problem 1.

   Sample Output

```
19:24:57: Starting D:\CS\AOOP\Course5\MYSQL_3\debug\MYSQL_3.exe ...
Successful Connection.
Query Result: "1" "innnnn" "DSP" "100"
Query Result: "2" "moe" "AOOP" "87"
Query Result: "3" "leo" "ML" "84"
Query Result: "4" "TWGG" "JAVA" "99"
```

3. **Find Factorial (MyMath)**

Factorial numbers can be express as the multiplication of zero or prime factors. Take 4!, for example, we can find that 4! = 2 × 2 × 2 × 3. (Total number of prime factors is 4)

Requirement:

Given N($N<=10^7+1$), the number of prime factors in X! (Factorial of X), you have to find the minimum possible value of X. If there is no solution, please print out "N".

Sample input:

1 2 4 5 7 8 9 10 11

Sample output:

2! 3! 4! 5! 6! 7! N N 8!

4. **Shortest Summation Distance (MyMath)**

There are 2*N houses, you need to divide them into groups of two (N groups), Let x1 be the distance between the houses of group 1, x2 be the distance between the houses of group 2 and so on. You have to make sure the summation (x1+x2+x3+. . .+xn) is minimized.

Requirement:

1) Each case starts with an integer N. (N groups)
2) The next 2 ∗ N lines will give the coordinate of the house(x, y)
3) Output number should contain two digits of precision of floating-point number.

Sample input:

5 10 10 20 10 5 5 1 1 120 3 6 6 50 60 3 24 6 9 0 0 1 9 9 10 10

↑(N) ↑(N)

Sample output:

118.40 1.41