## Question 1

Write a program that prompts the user to enter the number of students and each student's name and score (double), and finally displays the name of the student with the highest score along with its score.

Use class name Max

Here is a sample run:

Enter the number of students: 3

Enter a student name: Mohammed

Enter a student score: 96

Enter a student name: Ahmed

Enter a student score: 90

Enter a student name: Sohail

Enter a student score: 86

Top student Mohammed's score is 96.0

## Question 2

Write a java program that prompt the user to enter a number x and then print the largest integer $n$ such that $n^3$ is less than x.

Use class name **LargestN**

Please enter x: 12000

n = 22

Explanation: Note that: 22 ^ 3 = 10,648

and since 23 ^ 3 = 12,167 the answer is 22

## Question 3

Write a program that displays all the numbers between two input integers $n_1$ and $n_2$, that are divisible by 5 or 6, but not both. Numbers are separated by exactly one comma ',' and you should print **ten numbers** per line without a comma after last number in line (it is **OK** to print a comma after last number printed but *it would be excellent if you can do it without this ugly formatting*).

Use class name **Numbers**.

Here are 2 sample runs:

Please enter two integer numbers n1, n2: 12  24
12, 15, 18, 20, 24,

Please enter two integer numbers n1, n2: 10  46
10, 12, 15, 18, 20, 24, 25, 35, 36, 40
42, 45,

## Question 4

Suppose you save $100 *each* month into a savings account with the annual interest rate 5%. So, the monthly interest rate is **0.05 / 12 = 0.00417**. After the first month, the value in the account becomes

$$100 * (1 + 0.00417) = 100.417$$

After the second month, the value in the account becomes

$$(100 + 100.417) * (1 + 0.00417) = 201.252$$

After the third month, the value in the account becomes

$$(100 + 201.252) * (1 + 0.00417) = 302.507$$

and so on. Write a program that prompts the user to enter an amount (e.g., **100**), the annual interest rate (e.g., **5**), and the number of months (e.g., **6**) and displays the amount in the savings account after the given month.

Use class name **CompoundInterest**.

Here is a sample run:

Enter the amount to be saved for each month: 100
Enter the annual interest rate: 10
Enter the number of months: 6
After the 6th month, the account value is 617.745091173