MATH 335E Programming Algorithms
Lab-3 / CRN: 21193

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Question 1

We want to write a simple calculator program (addition, subtraction, division and multiplication) for two numbers using **switch-case** structure. To accomplish the task, you should prepare a **Java static method** named $simpleCalculator$ that takes two numbers and an arithmetic operation $(+, -, *, /)$ as parameters and returns the result of the calculator.

Testing Data::
$> simpleCalculator(4, 8, ' + ') \rightarrow 12$
$> simpleCalculator(4, 8, ' - ') \rightarrow -4$
$> simpleCalculator(4, 8, ' * ') \rightarrow 32$
$> simpleCalculator(4, 8, '/') \rightarrow 0.5$

Question 2

Each digit in a non-negative integer k has a digit position. Digit positions begin at 0 and count from the right-most digit of k. For example, in 168589, the digit 9 is at position 0 and digit 5 is at position 2. The digit 8 appears at both positions 1 and 3.

Write a **Java static method** named $find\_digit$, which takes a non-negative integer k and a digit d greater than or equal to 0 and less than 10. It returns the largest position in k at which digit d appears. If d does not appear in n, then $find\_digit$ returns -1.

Then write a Java source code that determines the digit position of a number by using the java static method $find\_digit$ you created.

Example Scenario:
> Enter the number: 3456
> Enter the digit: 4
> The result is 2

Question 3

Write a **Java static method** named $TriangleType$ that takes the edge lengths of a triangle as parameters and classifies it as scalene, equilateral, isosceles.

Testing Data:
$> TriangleType(2, 5, 6) \rightarrow$ scalene triangle
$> TriangleType(5, 5, 5) \rightarrow$ equilateral triangle
$> TriangleType(2, 5, 5) \rightarrow$ isosceles triangle
$> TriangleType(4, 6, 4) \rightarrow$ isosceles triangle