# MAT 115E Introduction to Programming Language

Lab-6 / CRN : 10629

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## 1 Question 1

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 C function named **findDigit**, 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 $k$, then find digit returns -1.

## 2 Question 2

The explicit form of Maclaurin series expansion for $e^x$ is given below.

$$e^x = \lim_{n\to\infty} \sum_{k=0}^{n} \frac{x^k}{k!} = \frac{x^0}{0!} + \frac{x^1}{1!} + \frac{x^2}{2!} + \cdots + \frac{x^n}{n!} + \cdots \tag{1}$$

Write a **C function** that takes **a nonnegative integer number** $n$ and **a real number** $x$ as parameters and returns **the first n-term summation of the Maclaurin series expansion for** $e^x$.