Course: DSA

*Homework 03*

**Recursion**

Given the Recursion source code folder, students conduct the following tasks.

Students can use LinkedList<>, Stack<>, and Queue<> in Java API for this homework.

# Task 1:

Add the following method to the Main class to compute the summation of digits of a positive integer.

**public static int sumEvenDigits(int a)**

* Args:
  + a: a positive integer
* Return:
  + the summation of even digits

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| *Copy and paste source code of the method here*  public static int sumEvenDigit(int a) {          if (a == 0) {              return 0;          }          else {              return (a%10) + sumEvenDigit(a/10);          }      } |

# Task 2:

Add the following method to the Main class to get the maximal item in a non-empty array of integers (there is at least one item).

**public static int getMax(int[] a, int n)**

* Args:
  + a: a non-empty array of integers
  + n: number of items which need processing
* Return:
  + the maximum

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| *Copy and paste source code of the method here*  public static int getMax(int[] a, int n) {          if (n == 1) {              return a[0];          }          else {              if (getMax(a,n-1) > a[n-1]) {                  return getMax(a, n - 1);              }              else return a[n-1];          }      } |

# Task 3:

Add the following method to the Main class to print down upper letters of a string. Note that letters are printed down in the same order as their indices.

**public static void printUpper(String s, int n)**

* Args:
  + s: a string with alphabetic letters
  + n: number of letters which need processing
* Return:
  + none

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| *Copy and paste source code of the method here*  public static void printUpper(String s, int n) {          if (n == 0) {              System.out.print("");          }          else {              char ch = s.charAt(n-1);              printUpper(s, n-1);              System.out.print(Character.toUpperCase(ch));          }      } |

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# Submission Notice:

* Export your answer file as pdf
* Rename the pdf following the format:

hw03\_<student number>\_<Full Name>.pdf

E.g: **hw03\_123456\_NguyenThanhAn.pdf**

*If you have not been assigned a student number yet, then use 123456 instead.*

* Careless mistakes in filename, format, question order, etc. are not accepted (0 pts).