App.java

```
package app;

/**
   * <p><strong><em>DESCRIPTION: </em></strong>None</p>
   *
   * <p><strong><em>APPLICATION NAME: </em></strong>Lab3 Recursion</p>
   *
   * <p><strong><em>CLASS NAME: </em></strong>App</p>
   *
   * <p><strong><em>CLASS NOTES: </em></strong>client to my server</p>
   *
   * <p><strong><em>PRE-CONDITION: </em></strong>None</p>
   *
   * <p><strong><em>POST-CONDITION: </em></strong>application executes successfully</p>
   *
   * <p><strong><em>AUTHOR: </em></strong>Daniel C. Landon Jr.</p>
   * <p><strong><em>INSTRUCTOR: </em></strong>Dr. Bob Walsh</p>
   * <p><strong><em>COURSE: </em></strong>CSCI 202 - Introduction to Software Systems</p>
   * <p><strong><em>DATE STARTED: </em></strong>02.22.2020</p>
   * <p><strong><em>DATE DUE: </em></strong>02.20.2020</p>
   *
*/
public class App {
   /**
      *
      * <p><strong><em>DESCRIPTION: </em></strong>application entry point</p>
      *
      * <p><strong><em>METHOD NAME: </em></strong>main</p>
      *
      * <p><strong><em>METHOD NOTES: </em></strong>none</p>
      *
      * <p><strong><em>PRE-CONDITION: </em></strong>none</p>
      *
      * <p><strong><em>POST-CONDITION: </em></strong>application completes successfully</p>
      *
      * <p><strong><em>AUTHOR: </em></strong> Daniel C. Landon Jr.</p>
      * <p><strong><em>DATE STARTED: </em></strong>02.22.2020</p>
      *
      * @param args command line arguments, not used
      * @throws Exception error trapping
    */
   public static void main(String[] args) throws Exception {

      // variables
      Recursion _recursion = new Recursion();
      String _sentence = "We must be Ready in C202 for Exam 1 which Will be in 2 weeks";
```

```
        int _factoral = 8;
        System.out.println("\n********** Factoral(" + _factoral + ") **********");
        _recursion.Factoral(_factoral);
        System.out.println("********** Factoral(" + _factoral + ") **********");

        int _powerBase = 2;
        int powerExp = 10;
        System.out.println("\n********** Power(" + _powerBase + ", " + +powerExp + ") **********");
        _recursion.Power(_powerBase, powerExp);
        System.out.println("********** Power(" + _powerBase + ", " + +powerExp + ") **********");

        int _fibonacci = 7;
        System.out.println("\n********** Fibonacci(" + _fibonacci + ") **********");
        System.out.println("Final Number of the Fibonacci Sequence Is: " + _recursion.Fibonacci(_fibonacci));
        System.out.println("********** Fibonacci(" + _fibonacci + ") **********");

        System.out.println("\n********** sumOfDigits **********");
        int _digitSum = 0;
        System.out.println("sumOfDigits (" + _digitSum +  "): " + _recursion.sumOfDigits(_digitSum));
        _digitSum = 101;
        System.out.println("sumOfDigits (" + _digitSum +  "): " + _recursion.sumOfDigits(_digitSum));
        _digitSum = 1;
        System.out.println("sumOfDigits (" + _digitSum +  "): " + _recursion.sumOfDigits(_digitSum));
        _digitSum = 231214;
        System.out.println("sumOfDigits (" + _digitSum +  "): " + _recursion.sumOfDigits(_digitSum));
        _digitSum = 734;
        System.out.println("sumOfDigits (" + _digitSum +  "): " + _recursion.sumOfDigits(_digitSum));
        System.out.println("********** sumOfDigits **********");

        System.out.println("\n********** DigitCount **********");
        int _digitCount = 0;
        System.out.println("Number of digits found (" + _digitCount +  "): " +
_recursion.DigitCount(_digitCount));
        _digitCount = 101;
        System.out.println("Number of digits found (" + _digitCount +  "): " +
_recursion.DigitCount(_digitCount));
        _digitCount = 1;
        System.out.println("Number of digits found (" + _digitCount +  "): " +
_recursion.DigitCount(_digitCount));
        _digitCount = 231214;
        System.out.println("Number of digits found (" + _digitCount +  "): " +
_recursion.DigitCount(_digitCount));
        _digitCount = 734;
        System.out.println("Number of digits found (" + _digitCount +  "): " +
_recursion.DigitCount(_digitCount));
        System.out.println("********** DigitCount **********");


        System.out.println("\n********** countUpperCase **********");
        System.out.println("\nNumber of Upper Case Letters Found: " + _recursion.countUpperCase(_sentence));
```

```
        System.out.println("********** countUpperCase **********");

        System.out.println("\n********** countLowerCase **********");
        System.out.println("\nNumber of Lower Case Letters Found: " + _recursion.countLowerCase(_sentence));
        System.out.println("********** countLowerCase **********");

        System.out.println("\n********** countDigits **********");
        System.out.println("\nNumber of Digits Found: " + _recursion.countDigits(_sentence));
        System.out.println("********** countDigits **********");

    } // end main

} // end App
```

Recursion.java

```
package app;

/**
   * <p><strong><em>DESCRIPTION: </em></strong>contains various methods demonstreating different types of recursive tasks</p>
   *
   * <p><strong><em>APPLICATION NAME: </em></strong>Lab3_Recursion</p>
   *
   * <p><strong><em>CLASS NAME: </em></strong>Recursion</p>
   *
   * <p><strong><em>CLASS NOTES: </em></strong>none</p>
   *
   * <p><strong><em>PRE-CONDITION: </em></strong>none</p>
   *
   * <p><strong><em>POST-CONDITION: </em></strong>none</p>
   *
   * <p><strong><em>AUTHOR: </em></strong>Daniel C. Landon Jr.</p>
   * <p><strong><em>INSTRUCTOR: </em></strong>Dr. Bob Walsh</p>
   * <p><strong><em>COURSE: </em></strong>CSCI 202 - Introduction to Software Systems</p>
   * <p><strong><em>DATE STARTED: </em></strong>02.22.2020</p>
   * <p><strong><em>DATE DUE: </em></strong>02.20.2020</p>
   *
*/
public class Recursion {

   /**
      *
      * <p><strong><em>DESCRIPTION: </em></strong>takes a sentence and counts the number of digits</p>
      *
      * <p><strong><em>METHOD NAME: </em></strong>countDigits</p>
      *
      * <p><strong><em>METHOD NOTES: </em></strong></p>
      *
      * <p><strong><em>PRE-CONDITION: </em></strong>a sentence</p>
      *
      * <p><strong><em>POST-CONDITION: </em></strong>returns number of digits</p>
      *
      * <p><strong><em>AUTHOR: </em></strong> Daniel C. Landon Jr.</p>
      * <p><strong><em>DATE STARTED: </em></strong>02.22.2020</p>
      *
      * @param _sentence sentence to review
      * @return number of digits
    */
   public int countDigits(String _sentence) {
```

```
        // call the helper class
        return countDigits(_sentence, _sentence.length() - 1);

    } // end countDigits

    /**
        *
        * <p><strong><em>DESCRIPTION: </em></strong>takes a sentence and counts the number of
digits</p>
        *
        * <p><strong><em>METHOD NAME: </em></strong>countDigits</p>
        *
        * <p><strong><em>METHOD NOTES: </em></strong>HELPER METHOD</p>
        *
        * <p><strong><em>PRE-CONDITION: </em></strong>a sentence</p>
        *
        * <p><strong><em>POST-CONDITION: </em></strong>returns number of digits</p>
        *
        * <p><strong><em>AUTHOR: </em></strong> Daniel C. Landon Jr.</p>
        * <p><strong><em>DATE STARTED: </em></strong>02.22.2020</p>
        *
        * @param str sentence to review
        * @param high the max length of the sentence
        * @return number of digits
     */
    public int countDigits(String str, int high) {

        System.out.println("countDigits(" + str + ", " + high + ")");

        int count = 0;

        if (high >= 0){

            if (Character.isDigit(str.charAt(high))) { count = 1; } // end if
            else { count = 0; }

            return this.countDigits(str, high - 1) + count;

        } // high

        else { return 0; } // end else

    } // end countDigits

    /**
        *
        * <p><strong><em>DESCRIPTION: </em></strong>takes a sentence and counts the number of
lowercase letters</p>
        *
        * <p><strong><em>METHOD NAME: </em></strong>countLowerCase</p>
```

```
     *
     * <p><strong><em>METHOD NOTES: </em></strong></p>
     *
     * <p><strong><em>PRE-CONDITION: </em></strong>a sentence</p>
     *
     * <p><strong><em>POST-CONDITION: </em></strong>returns number of lower case letters</p>
     *
     * <p><strong><em>AUTHOR: </em></strong> Daniel C. Landon Jr.</p>
     * <p><strong><em>DATE STARTED: </em></strong>02.22.2020</p>
     *
     * @param _sentence sentence to review
     * @return number of lowercase letters
     */
    public int countLowerCase(String _sentence) {

        // call the helper class
        return countLowerCase(_sentence, _sentence.length() - 1);

    } // end countLowerCase

    /**
     *
     * <p><strong><em>DESCRIPTION: </em></strong>takes a sentence and counts the number of
lowercase letters</p>
     *
     * <p><strong><em>METHOD NAME: </em></strong>countLowerCase</p>
     *
     * <p><strong><em>METHOD NOTES: </em></strong>HELPER METHOD</p>
     *
     * <p><strong><em>PRE-CONDITION: </em></strong>a sentence</p>
     *
     * <p><strong><em>POST-CONDITION: </em></strong>returns number of lower case letters</p>
     *
     * <p><strong><em>AUTHOR: </em></strong> Daniel C. Landon Jr.</p>
     * <p><strong><em>DATE STARTED: </em></strong>02.22.2020</p>
     *
     * @param str sentence to review
     * @param high the max length of the sentence
     * @return number of lowercase letters
     */
    public int countLowerCase(String str, int high) {

        System.out.println("countLowerCase(" + str + ", " + high + ")");

        int count = 0;

        if (high >= 0){

            if (Character.isLowerCase(str.charAt(high))) { count = 1; } // end if
            else { count = 0; }
```

```
            return this.countLowerCase(str, high - 1) + count;

        } // high

        else { return 0; } // end else

    } // end countLowerCase

    /**
        *
        * <p><strong><em>DESCRIPTION: </em></strong>takes a sentence and counts the number of
uppercase letters</p>
        *
        * <p><strong><em>METHOD NAME: </em></strong>countUpperCase</p>
        *
        * <p><strong><em>METHOD NOTES: </em></strong>CODE SUPPLIED BY PROFESSOR</p>
        *
        * <p><strong><em>PRE-CONDITION: </em></strong>a sentence</p>
        *
        * <p><strong><em>POST-CONDITION: </em></strong>returns number of upper case letters</p>
        *
        * <p><strong><em>AUTHOR: </em></strong> Daniel C. Landon Jr.</p>
        * <p><strong><em>DATE STARTED: </em></strong>02.22.2020</p>
        *
        * @param _sentence sentence to review
        * @return number of uppercase letters
     */
    public int countUpperCase(String _sentence) {

        // call the helper class
        return countUpperCase(_sentence, _sentence.length() - 1);

    } // end countUpperCase


    /**
        *
        * <p><strong><em>DESCRIPTION: </em></strong>takes a sentence and counts the number of
uppercase letters</p>
        *
        * <p><strong><em>METHOD NAME: </em></strong>countUpperCase</p>
        *
        * <p><strong><em>METHOD NOTES: </em></strong>HELPER METHOD, CODE SUPPLIED BY
PROFESSOR</p>
        *
        * <p><strong><em>PRE-CONDITION: </em></strong>a sentence</p>
        *
        * <p><strong><em>POST-CONDITION: </em></strong>returns number of upper case letters</p>
        *
```

```
     * <p><strong><em>AUTHOR: </em></strong> Daniel C. Landon Jr.</p>
     * <p><strong><em>DATE STARTED: </em></strong>02.22.2020</p>
     *
     * @param str sentence to review
     * @param high the max length of the sentence
     * @return number of uppercase letters
     */
    public int countUpperCase(String str, int high) {

        System.out.println("countUppercase(" + str + ", " + high + ")");

        int count =0;

        if (high >= 0){

            if (Character.isUpperCase(str.charAt(high))) { count = 1; } // end if
            else { count =0; }

            return this.countUpperCase(str, high - 1) + count;

        } // high

        else { return 0; } // end else

    } // end countUpperCase

    /**
     *
     * <p><strong><em>DESCRIPTION: </em></strong>return the number of digits in a number</p>
     *
     * <p><strong><em>METHOD NAME: </em></strong>DigitCount</p>
     *
     * <p><strong><em>METHOD NOTES: </em></strong></p>
     *
     * <p><strong><em>PRE-CONDITION: </em></strong>none</p>
     *
     * <p><strong><em>POST-CONDITION: </em></strong>none</p>
     *
     * <p><strong><em>AUTHOR: </em></strong> Daniel C. Landon Jr.</p>
     * <p><strong><em>DATE STARTED: </em></strong>02.22.2020</p>
     *
     * @param N number to count the digits
     * @return how many digitis are in a number
     */
    public int DigitCount(int N) {

        return String.valueOf(N).length();

    } // end DigitCount
```

```
    /**
     *
     * <p><strong><em>DESCRIPTION: </em></strong>finds the sum of a positive number by adding all of the other values of the number supplied to the last digit of the number</p>
     *
     * <p><strong><em>METHOD NAME: </em></strong>sumOfDigits</p>
     *
     * <p><strong><em>METHOD NOTES: </em></strong>none</p>
     *
     * <p><strong><em>PRE-CONDITION: </em></strong>PRE-CONDITION</p>
     *
     * <p><strong><em>POST-CONDITION: </em></strong>successful</p>
     *
     * <p><strong><em>AUTHOR: </em></strong> Daniel C. Landon Jr.</p>
     * <p><strong><em>DATE STARTED: </em></strong>02.22.2020</p>
     *
     * @param N number to process
     * @return recursive value
     */
    public int sumOfDigits(int N) {

        return (String.valueOf(N).length() == 1) ? N : (N % 10 + sumOfDigits(N / 10));

    } // end sumOfDigits

    /**
     *
     * <p><strong><em>DESCRIPTION: </em></strong>generates Fibonacci sequence</p>
     *
     * <p><strong><em>METHOD NAME: </em></strong>Fibonacci</p>
     *
     * <p><strong><em>METHOD NOTES: </em></strong>none</p>
     *
     * <p><strong><em>PRE-CONDITION: </em></strong>none</p>
     *
     * <p><strong><em>POST-CONDITION: </em></strong>generated fibonacci sequence</p>
     *
     * <p><strong><em>AUTHOR: </em></strong> Daniel C. Landon Jr.</p>
     * <p><strong><em>DATE STARTED: </em></strong>02.22.2020</p>
     *
     * @param N where to start sequence
     * @return recursive value
     */
    public int Fibonacci(int N) {

        // // variables
        int _answer = 0;

        if ( N < 2 ) {
```

```
            _answer = N;

        } // end if

        else {

            // recursion

            _answer = Fibonacci(N - 1) + Fibonacci(N - 2);

            System.out.printf("Calling Fibonacci(%d) ... Fibonacci(%d - 1) + Fibonacci(%d - 2) ... %d\n",
                N, N, N, _answer );

        } // end else

        return _answer;

    } // end Fibonacci

    /**
        *
        * <p><strong><em>DESCRIPTION: </em></strong>takes a base number plus an exponent and returns the value</p>
        *
        * <p><strong><em>METHOD NAME: </em></strong>Power</p>
        *
        * <p><strong><em>METHOD NOTES: </em></strong>none</p>
        *
        * <p><strong><em>PRE-CONDITION: </em></strong>none</p>
        *
        * <p><strong><em>POST-CONDITION: </em></strong>none</p>
        *
        * <p><strong><em>AUTHOR: </em></strong> Daniel C. Landon Jr.</p>
        * <p><strong><em>DATE STARTED: </em></strong>02.22.2020</p>
        *
        * @param _base base number for power
        * @param _exp exponent to raise too
        * @return recursive value
     */
    public int Power(int _base, int _exp) {

        // variables
        int _answer = 0;

        if(_exp == 0) {

            //base case

            System.out.println("Base Case: " + _base +  " " + _exp);
```

```
            _answer = 1;

        } // end if

        else if(_exp == 0) {

            //base case

            System.out.println("Base Case: " + _base +  " " + _exp);

            _answer = _base;

        } // end else if

        else {

            // recursion

            _answer = _base * Power(_base, _exp - 1);

            System.out.printf("Calling Power(%d, %d) ... %d * Power(%d, %d -1 ) ... %d\n",
                _base, _exp, _base, _base, _exp, _answer);

        } // end else

        return _answer;

    } // end Power

    /**
     *
     * <p><strong><em>DESCRIPTION: </em></strong>factors a value</p>
     *
     * <p><strong><em>METHOD NAME: </em></strong>Factoral</p>
     *
     * <p><strong><em>METHOD NOTES: </em></strong>none</p>
     *
     * <p><strong><em>PRE-CONDITION: </em></strong>integer to factor</p>
     *
     * <p><strong><em>POST-CONDITION: </em></strong>results</p>
     *
     * <p><strong><em>AUTHOR: </em></strong> Daniel C. Landon Jr.</p>
     * <p><strong><em>DATE STARTED: </em></strong>02.22.2020</p>
     *
     * @param N number to factor
     * @return recursive value
     */
    public int Factoral(int N) {

        // variables
```

```
        int _answer = 0;

        if (N <= 1) {

            // base case

            System.out.println("Base Case: " + N);

            _answer = 1;

        } // end if
        else {

            // recursion

            _answer = N * Factoral(N - 1);

            System.out.printf("Calling Factoral(%d) ... %d * Factoral(%d - 1) ... %d\n", N, N, N, _answer);

        }  // end else

        return _answer;

    } // end Factoral

}
```

Console Output

********** Factoral(8) **********
Base Case: 1
Calling Factoral(2) ... 2 * Factoral(2 - 1) ... 2
Calling Factoral(3) ... 3 * Factoral(3 - 1) ... 6
Calling Factoral(4) ... 4 * Factoral(4 - 1) ... 24
Calling Factoral(5) ... 5 * Factoral(5 - 1) ... 120
Calling Factoral(6) ... 6 * Factoral(6 - 1) ... 720
Calling Factoral(7) ... 7 * Factoral(7 - 1) ... 5040
Calling Factoral(8) ... 8 * Factoral(8 - 1) ... 40320
********** Factoral(8) **********

********** Power(2, 10) **********
Base Case: 2 0
Calling Power(2, 1) ... 2 * Power(2, 1 -1) ... 2
Calling Power(2, 2) ... 2 * Power(2, 2 -1) ... 4
Calling Power(2, 3) ... 2 * Power(2, 3 -1) ... 8
Calling Power(2, 4) ... 2 * Power(2, 4 -1) ... 16
Calling Power(2, 5) ... 2 * Power(2, 5 -1) ... 32
Calling Power(2, 6) ... 2 * Power(2, 6 -1) ... 64
Calling Power(2, 7) ... 2 * Power(2, 7 -1) ... 128
Calling Power(2, 8) ... 2 * Power(2, 8 -1) ... 256
Calling Power(2, 9) ... 2 * Power(2, 9 -1) ... 512
Calling Power(2, 10) ... 2 * Power(2, 10 -1) ... 1024
********** Power(2, 10) **********

********** Fibonacci(7) **********
Calling Fibonacci(2) ... Fibonacci(2 - 1) + Fibonacci(2 - 2) ... 1
Calling Fibonacci(3) ... Fibonacci(3 - 1) + Fibonacci(3 - 2) ... 2
Calling Fibonacci(2) ... Fibonacci(2 - 1) + Fibonacci(2 - 2) ... 1
Calling Fibonacci(4) ... Fibonacci(4 - 1) + Fibonacci(4 - 2) ... 3
Calling Fibonacci(2) ... Fibonacci(2 - 1) + Fibonacci(2 - 2) ... 1
Calling Fibonacci(3) ... Fibonacci(3 - 1) + Fibonacci(3 - 2) ... 2
Calling Fibonacci(5) ... Fibonacci(5 - 1) + Fibonacci(5 - 2) ... 5
Calling Fibonacci(2) ... Fibonacci(2 - 1) + Fibonacci(2 - 2) ... 1
Calling Fibonacci(3) ... Fibonacci(3 - 1) + Fibonacci(3 - 2) ... 2
Calling Fibonacci(2) ... Fibonacci(2 - 1) + Fibonacci(2 - 2) ... 1
Calling Fibonacci(4) ... Fibonacci(4 - 1) + Fibonacci(4 - 2) ... 3
Calling Fibonacci(6) ... Fibonacci(6 - 1) + Fibonacci(6 - 2) ... 8
Calling Fibonacci(2) ... Fibonacci(2 - 1) + Fibonacci(2 - 2) ... 1
Calling Fibonacci(3) ... Fibonacci(3 - 1) + Fibonacci(3 - 2) ... 2
Calling Fibonacci(2) ... Fibonacci(2 - 1) + Fibonacci(2 - 2) ... 1
Calling Fibonacci(4) ... Fibonacci(4 - 1) + Fibonacci(4 - 2) ... 3
Calling Fibonacci(2) ... Fibonacci(2 - 1) + Fibonacci(2 - 2) ... 1
Calling Fibonacci(3) ... Fibonacci(3 - 1) + Fibonacci(3 - 2) ... 2
Calling Fibonacci(5) ... Fibonacci(5 - 1) + Fibonacci(5 - 2) ... 5
Calling Fibonacci(7) ... Fibonacci(7 - 1) + Fibonacci(7 - 2) ... 13

Final Number of the Fibonacci Sequence Is: 13
********** Fibonacci(7) **********

********** sumOfDigits **********
sumOfDigits (0): 0
sumOfDigits (101): 2
sumOfDigits (1): 1
sumOfDigits (231214): 13
sumOfDigits (734): 14
********** sumOfDigits **********

********** DigitCount **********
Number of digits found (0): 1
Number of digits found (101): 3
Number of digits found (1): 1
Number of digits found (231214): 6
Number of digits found (734): 3
********** DigitCount **********

********** countUpperCase **********
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 59)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 58)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 57)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 56)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 55)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 54)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 53)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 52)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 51)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 50)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 49)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 48)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 47)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 46)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 45)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 44)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 43)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 42)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 41)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 40)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 39)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 38)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 37)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 36)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 35)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 34)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 33)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 32)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 31)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 30)

countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 29)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 28)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 27)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 26)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 25)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 24)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 23)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 22)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 21)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 20)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 19)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 18)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 17)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 16)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 15)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 14)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 13)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 12)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 11)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 10)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 9)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 8)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 7)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 6)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 5)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 4)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 3)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 2)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 1)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 0)
countUppercase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, -1)

Number of Upper Case Letters Found: 5
********** countUpperCase **********

********** countLowerCase **********
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 59)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 58)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 57)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 56)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 55)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 54)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 53)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 52)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 51)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 50)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 49)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 48)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 47)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 46)

countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 45)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 44)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 43)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 42)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 41)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 40)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 39)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 38)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 37)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 36)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 35)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 34)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 33)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 32)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 31)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 30)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 29)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 28)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 27)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 26)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 25)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 24)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 23)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 22)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 21)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 20)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 19)
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countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 16)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 15)
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countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 13)
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countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 11)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 10)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 9)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 8)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 7)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 6)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 5)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 4)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 3)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 2)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 1)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 0)
countLowerCase(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, -1)

Number of Lower Case Letters Found: 36
********** countLowerCase **********

********** countDigits **********
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 59)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 58)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 57)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 56)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 55)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 54)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 53)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 52)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 51)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 50)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 49)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 48)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 47)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 46)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 45)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 44)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 43)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 42)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 41)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 40)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 39)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 38)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 37)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 36)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 35)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 34)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 33)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 32)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 31)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 30)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 29)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 28)
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countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 24)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 23)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 22)
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countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 14)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 13)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 12)

countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 11)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 10)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 9)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 8)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 7)
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countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 3)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 2)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 1)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, 0)
countDigits(We must be Ready in C202 for Exam 1 which Will be in 2 weeks, -1)

Number of Digits Found: 5
********** countDigits **********