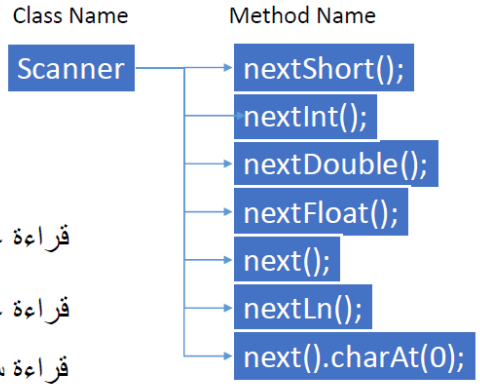
Display output in the Console

Input : Read From Console




```
import java.util.Scanner;

Scanner in = new Scanner(System.in);
int number1=in.nextInt();          // قراءة عدد صحيح
double number2=in.nextDouble();    // قراءة عدد عشري
String s = in.next();              // قراءة سلسلة رموز
char ch = in.next().charAt(0);     // قراءة رمز واحد
```

Output : Print to Console

```
System.out.println(number1+number2);   // طباعة على نفس السطر حرف
System.out.print(number1+number2);     // طباعة على سطر جديد
```

Write class (program) ask user to enter two numbers and mathematic operation reactively. Based on entered operation the program perform either summation, subtraction, multiplication, division. Also you ask the user to re-enter the operation if user enter wrong operation.

```
import java.util.Scanner;
public class SimpleCalculater {
public static void main(String[] args) {
Scanner in = new Scanner(System.in);
 System.out.println("plz Enter number1");  double number1=in.nextDouble();
System.out.println("plz Enter number1");
  double number2=in.nextDouble();
char ch;
do{
System.out.println("Choose Operation +, -, *, /, % ");
ch= in.next().charAt(0);
} while ( (ch!='+')&&(ch!='-')&&(ch!='*')&&(ch!='/')&&(ch!='/'));
if(ch == '+')
System.out.println(number1 + number2);
else if(ch == '-')
 System.out.println(number1 - number2);
else if(ch == '/')
  System.out.println(number1 / number2);
else if(ch == '*')
System.out.println(number1 * number2);
 else if(ch == '%')
System.out.println(number1 % number2);
}       }
```

تكرار ادخال العملية الحسابية عند ادخال رمز خطأ

Data Type Conversion

```
New-DT var      = (New-DT) old-Var;
int     x = (int)    3.5 ;
int     x = (int)    ‘ V’ ;
char  ch = (char) 65 ;
double      x = (double)      3;
int     x = Integer.parseInt( “ 3 ”);
```

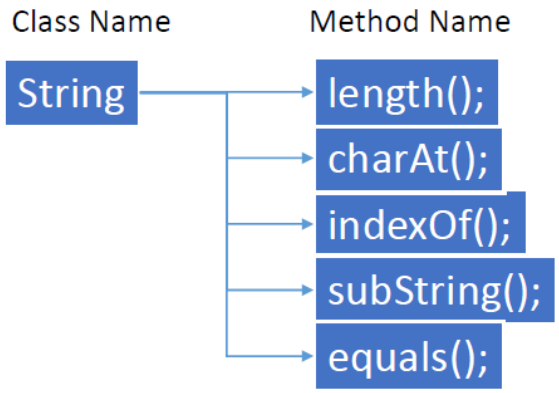
تحويل العدد الحقيقي الى عدد صحيح

تحويل الرمز الى عدد صحيح

تحويل العدد الصحيح الى رمز

تحويل العدد الصحيح الى عدد حقيقي

تحويل السلسلة الرمزية الى عدد صحيح

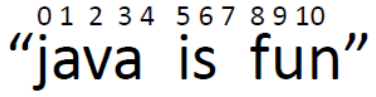



```
import java.util.Scanner;

Scanner in = new Scanner(System.in);

        String s = in.nextLine();
11      int size= s.length();
0       int indx= s.indexOf(‘j’);
a       char ch = s.charAt(3);
is      String sub = s.subString(5,7);
```

قراءة سلسلة رموز



Define class to read a statement and execute some String methods. For example (the java is funny)

```
import java.util.Scanner;
public class StringMethods {
   public static void main(String[] args) {
     Scanner in = new Scanner(System.in);
      System.out.println("plz Enter a Statment  !!");
      String s = in.nextLine();
      String s2="the java is funny";
      System.out.println("the length of " + s + " is  "+ s.length());
      System.out.println("substring(0, 5) " + s + " is  "+ s.substring(0, 5));
      System.out.println("substring(6, 6) " + s + " is  "+ s.substring(6, 7));
       System.out.println("substring(4, 7) " + s + " is  "+ s.substring(4, 7));
      System.out.println("indexOf('j') " + s + " is  "+ s.indexOf('j'));
      System.out.println("indexOf('f') " + s + " is  "+ s.indexOf('f'));
      System.out.println("indexOf('v') " + s + " is  "+ s.indexOf('v'));

      if(s==s2)
         System.out.println(" s == s2 is true");
      else
         System.out.println(" s == s2 is false");

      System.out.println("equals " + s.equals("hellow"));
      System.out.println("equals " + s + " is  "+ s.equals(s2));
     }
   }
```

Program output

```
plz Enter a Statment  !!
the java is funny
the length of the java is funny is  17
substring(0, 5) the java is funny is  the j
substring(6, 6) the java is funny is  v
substring(4, 7) the java is funny is  jav
indexOf('j') the java is funny is  4
indexOf('f') the java is funny is  12
indexOf('v') the java is funny is  6


 s == s2 is false


equals false
equals the java is funny is  true
```

Define class have two methods: the first method convert a letter from capital to small (toLower), the second method convert letter from small to capita (toUpper). The main method read statment from user (console)

```
import java.util.Scanner;
public class SimpleConvertStringLetters {
  public static void main(String[] args) {
    char ch =' ';
     Scanner in = new Scanner(System.in);
     System.out.println("plz Enter a Letter");
     String s = in.nextLine();
     for (int i =0; i<s.length(); i++) {
        ch = s.charAt(i);

        if (ch >= 'A' && ch <='Z')
          toLower(ch);
        else if (ch >= 'a' && ch <='z')
          toUpper(ch);
        else if (ch ==' ')
           System.out.print(" ");
     }
  }

  public static void toLower(char ch){
        System.out.print(  (char)(ch+32)  ) ;
  }

  public static void toUpper(char ch){
        System.out.print(  (char)(ch-32)  ) ;
  }
}
```

اختبار اذا كان الحرف كبير

اختبار اذا كان الحرف صغير

استدعاء دالة toLower

استدعاء دالة toUpper

دالة toLower
Method convert the letter from capital to small

دالة toUpper
Method convert the letter from small to capital

ASCII Code for Commonly Used Characters

Characters	*Code Value in Decimal*
'0' to '9'	48 to 57
'A' to 'Z'	65 to 90
'a' to 'z'	97 to 122

Define class have method to calculate the mathematic operation on two numbers. Suppose the input like (“5+6”)

```
import java.util.Scanner;
public class SimpleConvertStringLetters {
 public static void main(String[] args) {
    char ch =' ', op=' ';
    int n1=0,  n2=0;
     Scanner in = new Scanner(System.in);
     System.out.println("plz Enter a quation like  3+6  or   8/2");
     String s = in.nextLine();

     for (int i =0; i<s.length(); i++) {
        ch = s.charAt(i);

        if ( ch >= '0' &&  ch <= '9' &&  n1==0 )
           n1=(int)(ch-48);
        else if ((ch=='+')||(ch=='-')||(ch=='*')||(ch=='/')||(ch=='%'))
           op=ch;
           else if (ch >= '0' && ch <='9' && n1!=0)
           n2=(int)(ch-48);
     }
     calculate(op, n1, n2);
  }
  public static void calculate (char op, int number1, int number2){
    System.out.println(op +" "+ number1+" "+number2) ;
   switch( op ) {
       case '+' :          System.out.println(number1+number2);   break;
       case '-' :          System.out.println(number1-number2);   break;
       case '*' :          System.out.println(number1+number2);   break;
       case '/' :          System.out.println(number1-number2);   break;
       case '%' :          System.out.println(number1+number2);  break;
    }   } }
```

اختبار اذا كان الرمز رقم

تحويل الرمز الى الرقم المقابل له

اختبار اذا كان الرمز عملية حسابية

استدعاء دالة calculate من نوع void

Method calculate two numbers with given operation