Programming with Java

Exercise #3

Array

1. Create an array of integer type in different ways.
2. Write a program to iterate over the array and print its elements. (Use for loop)
3. Write a program to iterate over the array and print its elements. (Use while loop)
4. Write a program to iterate over the array and print its elements. (Use for each loop)
5. Write a Java Program to finds the average of numbers in an array.
6. Write a program to print the elements of an integer/float array after doubling.
7. Write a method which takes an array as a parameter and returns the sum of all of its elements.
8. Write a program to copy all elements of one array into another array.

2D Array/Matrices

1. Write a program to create a Matrix and display the elements of the matrix.
2. Write a program to add two matrices.
3. Write a program to multiply a matrix with a scaler.

String

1. Create a character array consisting of your name and convert that into a string and print the same.
2. Create a string consisting of your name using string literal
3. Create a string consisting of your name using String class object.
4. Write a program which returns the length of a string (without length method)
5. Write a program which returns the length of a string using length method
6. Write a program which uses the following methods:
   a) char charAt(int index)
   b) int length()
   c) String substring(int beginIndex)
   d) boolean contains(CharSequence s)
   e) boolean equals(Object another)
   f) boolean isEmpty()
   g) String concat(String str)
   h) String replace(char old, char new)

i) int indexOf(int ch)
j) String toLowerCase()
k) String toLowerCase(Locale l)
l) String toUpperCase()
m) String toUpperCase(Locale l)
n) String trim()

StringBuffer

1. Write a program to prove that the String is immutable by creating a string consisting of given name and try to correct it with your given name and surname.
2. Create the following strings

```
String s1="Krishna";

String s2="Krishna";

String s3=new String("Krina");

String s4="Krupali";
```

Now compare them using following techniques.

```
By Using equals() Method

By Using == Operator

By compareTo() Method
```

3. Write a program to create a string using StringBuffer
4. Covert a string created with String class to a mutable string.
5. Convert a string created with StringBuffer to immutable string.
6. Create a String using StringBuffer and use the following methods on that string:

a) append(String s)
b) insert(int offset, String s)
c) replace(int startIndex, int endIndex, String str)
d) delete(int startIndex, int endIndex)
e) reverse()
f) capacity()
g) ensureCapacity(int minimumCapacity)
h) charAt(int index)
i) length()

j) substring(int beginIndex)

StringBuilder

1. Create a string using StringBuilder Class
2. Convert the above string to StringBuffer type.
3. Convert the above string to immutable type.
4. Write a program which uses the following methods:

a) public StringBuilder append(String s)
b) public StringBuilder insert(int offset, String s)
c) public StringBuilder replace(int startIndex, int endIndex, String str)
d) public StringBuilder delete(int startIndex, int endIndex)
e) public StringBuilder reverse()
f) public int capacity()
g) public void ensureCapacity(int minimumCapacity)
h) public char charAt(int index)
i) public int length()
j) public String substring(int beginIndex)
k) public String substring(int beginIndex, int endIndex)