Big Data Analysis

Sqoop and Scala Programming

Homework-3

1. Write an object Conversions with methods inchestoFeet, milestoKms and poundsToKilos and invoke its methods from a class of your choice.

```
object Conversions {       def inchesToCentimeters(inches:
Double) = inches * 2.54

    def gallonsToLiters(gallons: Double) = gallons * 3.78541

    def milesToKilometers(miles: Double) = miles * 1.60934
}
```

2. Write a Scala program to get the largest element of an array using reduceLeft

```
// Scala program to find the largest element
// from the array

object Sample {      def
main(args: Array[String]) {
var IntArray =
Array(10,50,40,20,30)
  var count:Int=0
  var large:Int=0
```

```
        large=IntArray(0)
    while(count<IntArray.size)
        {
           if(large<IntArray(count))
              large=IntArray(count)
    count=count+1
        }
        printf("Largest element is: %d\n",large)
      }
    }
```

3. Write a Scala code which reverses the lines of a file (makes the first line as the last one, and so on)

```
al filename = "/tmp/quote.txt"
io.Source.fromFile(filename)
  .getLines.toArray
  .reverse
  .mkString("\n")
```

4. Mention the types of Variables in Scala? And What is the difference between them?

In Scala there are two types of variables:

* Mutable Variables
* Immutable Variables

The mutable objects can be changed to any value or state without adding a new object. Whereas, the immutable objects cannot be changed

to its value or state once it is created. In the case of immutable objects, whenever we change the state of the object, a new object will be created.

5. Mention the Advantages of Scala

- Scala has an exact syntax, eliminating boilerplate code. Programs written in Scala require less code than similar programs written in Java
- It is both an object-oriented language and a functional language. This combination makes Scala the right choice for web development

6. Explain the Operators in Scala

```
object Assignop
{     def     main(args:
Array[String])
{

        // variables
var a = 50;
var b = 40;
var c = 0;

// simple addition
c = a + b;
  println("simple addition: c= a + b = " + c);

// Add AND assignment
```

```
c += a;
 println("Add and assignment of c += a = " + c);

// Subtract AND assignment
c -= a;
 println("Subtract and assignment of c -= a = " + c);

    // Multiply AND assignment
       c *= a;
println("Multiplication and assignment of c *= a = " + c);

// Divide AND assignment
c /= a;
 println("Division and assignment of c /= a = " + c);

    // Modulus AND assignment
       c %= a;
 println("Modulus and assignment of c %= a = " + c);

    // Left shift AND assignment
       c <<= 3;
 println("Left shift and assignment of c <<= 3 = " + c);

    // Right shift AND assignment
```

```
        c >>= 3;
 println("Right shift and assignment of c >>= 3 = " + c);


     // Bitwise AND assignment
        c &= a;
 println("Bitwise And assignment of c &= 3 = " + c);


    // Bitwise exclusive OR and assignment
        c ^= a;
 println("Bitwise Xor and assignment of c ^= a = " + c);


    // Bitwise inclusive OR and assignment
        c |= a;
 println("Bitwise Or and assignment of c |= a = " + c);
}
}
```

7. How is a Class different from an Object?

Class is a detailed description, the definition, and the template of what an object will be. But it is not the object itself. Also, what we call, a class is the building block that leads to Object-Oriented Programming. It is a user-defined data type, that holds its own data members and member functions, which can be accessed and used by creating an instance of that class. It is the blueprint of any object.

Object is an instance of a class. All data members and member functions of the class can be accessed with the help of objects. When a class is defined, no memory is allocated, but memory is allocated when it is instantiated (i.e. an object is created)

8. Mention how Scala is different from Java

Scala is a statically typed programming language, whereas Java is a multi-platform, network-centric programming language. Scala uses an actor model for supporting modern concurrency, whereas Java uses the conventional thread-based model for concurrency.

9. Explain the access Modifiers available in Scalas

Access Modifiers in scala are used to define the access field of members of packages, classes or objects in scala. For using an access modifier, you must include its keyword in the definition of members of package, class or object. These modifiers will restrict accesses to the members to specific regions of code.