### 1. Variable Declaration in Scala:

var Var1: String = "Ankit"

val Var2: String = "Ankit"

var Var4 = 2

var Var5 = 3

Var4 + Var5 // Output: 5

Var4 == Var5 // Output: false

#### Output:

Var4: Int = 2

Var5: Int = 3

res1: Int = 5

res2: Boolean = false

### 2. Using If-Else Expression in Scala:

var Var3 = 1

if (Var3 == 1) {

println("True")

} else {

println("False")

}

#### Output:

True

### 3. Iteration in Scala using For Loop:

for (a <- 1 to 10) {

println("Value of a: " + a)

}

#### Output:

Value of a: 1

Value of a: 2

Value of a: 3

Value of a: 4

Value of a: 5

Value of a: 6

Value of a: 7

Value of a: 8

Value of a: 9

Value of a: 10

### 4. Declaring a Simple Function in Scala:

def mul2(m: Int): Int = m \* 10

mul2(2) // Output: 20

#### Output:

res9: Int = 20

### 5. Working with Arrays in Scala:

var name = Array("Faizan", "Swati", "Kavya", "Deepak", "Deepak")

name(0) = "jal"

name(1) = "Faizy"

name(2) = "Expert in deep learning"

println(name.mkString(", "))

#### Output:

jal, Faizy, Expert in deep learning, Deepak, Deepak

### 6. Simple "Hello World" Program in Scala:

object HelloWorld {

def main(args: Array[String]): Unit = {

println("Hello, world!")

}

}

#### Output:

Hello, world!

### 7. Scala Program using Apache Spark:

// Importing Spark libraries

import org.apache.spark.sql.SparkSession

object SparkExample {

def main(args: Array[String]): Unit = {

// Initialize Spark session

val spark = SparkSession.builder()

.appName("Simple Spark Example")

.master("local")

.getOrCreate()

// Create a simple DataFrame

val data = Seq(("Ankit", 25), ("Ravi", 30), ("Sita", 28), ("John", 35))

val df = spark.createDataFrame(data).toDF("Name", "Age")

// Show the DataFrame

df.show()

// Perform a simple transformation: filtering rows where age is greater than 28

val filteredDf = df.filter(df("Age") > 28)

// Show the transformed DataFrame

filteredDf.show()

// Stop Spark session

spark.stop()

}

}

#### Expected Output:

+-----+---+

| Name|Age|

+-----+---+

|Ankit| 25|

| Ravi| 30|

| Sita| 28|

| John| 35|

+-----+---+

+-----+---+

| Name|Age|

+-----+---+

| Ravi| 30|

| John| 35|

+-----+---+

### 8. Install and Check Java Version:

$ java -version

#### Output:

java version "1.8.0\_251"

Java(TM) SE Runtime Environment (build 1.8.0\_251-b08)

Java HotSpot(TM) 64-Bit Server VM (build 25.251-b08, mixed mode)

### 9. Install Scala on Ubuntu:

$ cd ~/Downloads

$ wget http://www.scala-lang.org/files/archive/scala-2.11.7.deb

$ sudo dpkg -i scala-2.11.7.deb

$ scala –version

#### Output:

Scala code runner version 2.11.7 -- Copyright 2002-2015, LAMP/EPFL

### Scala Program using Apache Spark:

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### Expected Output:

+-----+---+

| Name|Age|

+-----+---+

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+-----+---+

+-----+---+

| Name|Age|

+-----+---+

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+-----+---+