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# SCALA EXPRESSIONS, STATEMENTS & LOOPS: HANDS ON LAB

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By [www.HadoopExam.com](http://www.HadoopExam.com)

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## Topics

1. Scala Expressions
2. Scala Statements
3. If else conditions
4. Match Expressions
5. Pattern Matching
6. For Comprehensions
7. Using guard in for loops

**Expression:** As noted earlier, an expression is a single unit of code that returns a value.

```
scala> val x = 100*5*10
x: Int = 5000
```

**Expression Block:** You can combine multiple expressions using {}. The last expression in the block is a return value for entire block.

```
scala> val x = {
  | val y =100
  | y+10
  | }
x: Int = 110
```

**Statements:** A statement is just an expression that doesn't return a value.

Statements have a return type of Unit

#### If condition expression

```
scala> val a=7
a: Int = 7

scala> val x= if(a<10) "Value is less than 10"
x: Any = Value is less than 10
```

#### If else expression

```
scala> val a=101
a: Int = 101

scala> val x= if(a<10) "Value is less than 10" else "Value is greater than 100"
x: String = Value is greater than 100
```

#### Match Expression:

```
scala> val a:Any="Hello"
a: Any = Hello

scala> val t= a match {
  | case 10 => "Value is 10"
  | case 20 => "value is 20"
  | case "Hello" => "Welcome to Scala"
  | }
t: String = Welcome to Scala
```

```
val a = List("Hello", "AND", "Welcome")
val x = a match{
case List("Hello", _, _) => "List with three elements, start with Hello"
case List("Hello", _*) => "List start with Hello, having n number of elements"
}
```

```
scala> val a=3
a: Int = 3

scala> val x=a match{
  | case 2|4|6|8 => "Its even number"
  | case 1|3|5|7|9 => "Its odd number"
  | case 0 => "Its zero"
  | case _ => "Number is not considered"
  | }
x: String = Its odd number
```

### Using value at RHS (Value Binding)

```
scala> val a=100
a: Int = 100

scala> val x=a match{
  | case 2|4|6|8 => "Its even number"
  | case 1|3|5|7|9 => "Its odd number"
  | case 0 => "Its zero"
  | case v1 => s" ${v1} will not be considered"
  | }
x: String = " 100 will not be considered"
```

### Pattern Matching with the if guard

```
val a= 6
val x = a match{
case a if a<10 => "Value is between 0 to 9"
case a if a<100 => "Value is between 10 to 100"
case _ => "Value is beyond 100"
}
```

### For Loops

#### Printing each element of Array

```
val a = Array("Java", "Scala", "Python")
for (e <- a) println(e)
```

### Applying Custom Algorithm on each element

```
for (e <- a) {  
  val s = "Hello " + e  
  println(s)  
}
```

Return collections from for loop (**for comprehensions**)

```
for (e <- a) yield {  
  "Hello " + e  
}
```

### For loop with counters (Replace until with to)

```
for (count <- 0 until a.length) yield {  
  s"${a(count)}" -> s"${count}"  
}
```

### Using zipWithIndex method

```
for ((value, count) <- a.zipWithIndex) yield {  
  s"${value}" -> s"${count}"  
}
```

### Using guard in for loop

```
for (i <- 100 to 1000 if i%25==0) yield i
```

### Iterating over list of tuple values

```
val col = List((1,2,3),(4,5,6),(7,8,9))  
for ((a,b,c) <- col) println(s"A: $a, B: $b, C: $c")
```

### For loop with more than one counter

```
for {  
  a <- 1 to 3  
  b <- 4 to 6  
  c <- 7 to 10  
} println(s"A = $a, B = $b, C = $c")
```

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