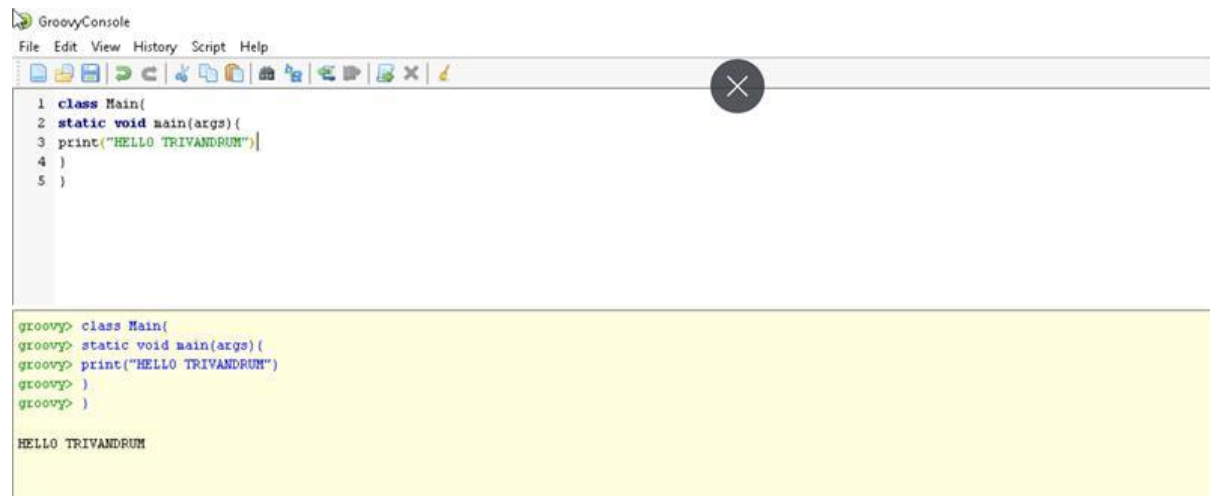


## GROOVY PROGRAMS

### 1. Demo. Groovy



The screenshot shows the GroovyConsole application window. The title bar reads "GroovyConsole". The menu bar includes "File", "Edit", "View", "History", "Script", and "Help". The toolbar contains icons for file operations and execution. The code editor displays the following Groovy code:

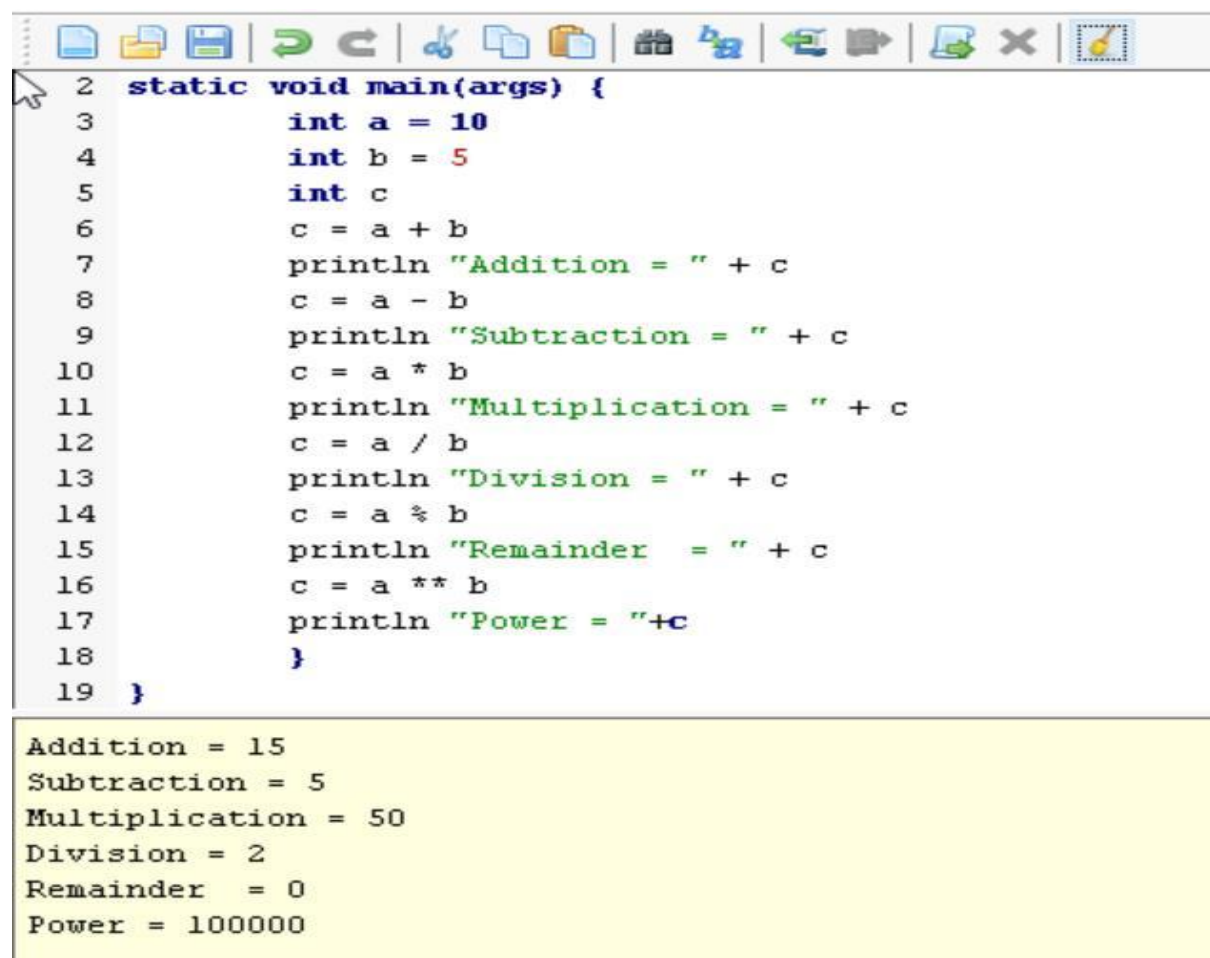
```
1 class Main(  
2 static void main(args){  
3 print("HELLO TRIVANDRUM")  
4 }  
5 )
```

Below the code editor, the console output shows the execution of the code:

```
groovy> class Main(  
groovy> static void main(args){  
groovy> print("HELLO TRIVANDRUM")  
groovy> }  
groovy> }  
HELLO TRIVANDRUM
```

## GROOVY OPERATORS

### 1.Arithmetic operators



The screenshot shows the GroovyConsole application window with a Groovy script demonstrating arithmetic operations. The code is as follows:

```
2 static void main(args) {  
3     int a = 10  
4     int b = 5  
5     int c  
6     c = a + b  
7     println "Addition = " + c  
8     c = a - b  
9     println "Subtraction = " + c  
10    c = a * b  
11    println "Multiplication = " + c  
12    c = a / b  
13    println "Division = " + c  
14    c = a % b  
15    println "Remainder = " + c  
16    c = a ** b  
17    println "Power = "+c  
18 }  
19 }
```

The console output shows the results of these operations:

```
Addition = 15  
Subtraction = 5  
Multiplication = 50  
Division = 2  
Remainder = 0  
Power = 100000
```

## 2.Unary operators

```
1 class GroovyOperatorsExample4 {  
2     static void main(args) {  
3         int a = 10  
4         int c  
5         c = a++  
6         println "Post Increment = " + c  
7         println "Value of a after Post Increment = " + a  
8         c = ++a  
9         println "Pre Increment = " + c  
10        println "Value of a after Pre Increment = " + a  
11        int b = 10  
12        c = b--  
13        println "Post decrement = " + c  
14        println "Value of a after Post decrement = " + b  
15        c = --b  
16        println "Pre decrement = " + c  
17        println "Value of a after Pre decrement = " + b  
18    }  
19 }
```

```
Post Increment = 10  
Value of a after Post Increment = 11  
Pre Increment = 12  
Value of a after Pre Increment = 12  
Post decrement = 10  
Value of a after Post decrement = 9  
Pre decrement = 8  
Value of a after Pre decrement = 8
```

## Assignment arithmetic operators

```
1 class GroovyOperatorsExample5 {
2   static void main(args) {
3       int a = 10
4       a+=3
5       println "a+=3 -----> " + a
6       a-=3
7       println "a-=3 -----> " + a
8       a*=3
9       println "a*=3 -----> " + a
10      a/=3
11      println "a/=3 -----> " + a
12      a%=3
13      println "a%=3 -----> " + a
14      a**=3
15      println "a**=3 -----> " + a
16  }
17 }
```

```
a+=3 -----> 13
a-=3 -----> 10
a*=3 -----> 30
a/=3 -----> 10
a%=3 -----> 1
a**=3 -----> 1
```

## Relational operators

```
1 class GroovyOperatorsExample6 {
2   static void main(args) {
3       int a = 10
4       int b = 12
5       boolean c
6       println "a = 10"
7       println "b = 12"
8       c = a == b
9       println "Relational Operator equals [c = a == b] ----> " + c
10      c = a != b
11      println "Relational Operator different [c = a != b] ----> " + c
12      c = a < b
13      println "Relational Operator less than [c = a < b] ----> " + c
14      c = a <= b
15      println "Relational Operator less than equal to [c = a <= b] ----> " + c
16      c = a > b
17      println "Relational Operator greater than [c = a > b] ----> " + c
18      c = a >= b
19      println "Relational Operator greater than equal to [c = a >= b] ----> " + c
20  }
21 }
```

```
a = 10
b = 12
Relational Operator equals [c = a == b] ----> false
Relational Operator different [c = a != b] ----> true
Relational Operator less than [c = a < b] ----> true
Relational Operator less than equal to [c = a <= b] ----> true
Relational Operator greater than [c = a > b] ----> false
Relational Operator greater than equal to [c = a >= b] ----> false
```

## Logical operators

```
1 class GroovyOperatorsExample7 {  
2     static void main(args) {  
3         boolean c  
4         c = true && true  
5         println "Logical AND operator = " + c  
6         c = true || false  
7         println "Logical OR operator = " + c  
8         c = !false  
9         println "Logical NOT operator = " + c  
10  
11     }  
12 }
```

Logical AND operator = true

Logical OR operator = true

Logical NOT operator = true

## Bitwise operators

```
1 class GroovyOperatorsExample10 {
2
3     static void main(args) {
4         int a = 0b00101111
5         println "a = 0b00101111 ----> "+a
6         int b = 0b000010101
7         println "b = 0b000010101 ----> "+b
8         println "(a & a) ----> "+(a & a)
9         println "(a & b) ----> "+(a & b)
10        println "(a | a) ----> "+(a | a)
11        println "(a | a) ----> "+(a | b)
12
13        int c = 0b11111111
14        println "c = 0b11111111"
15        println "((a ^ a) & c) ----> "+((a ^ a) & c)
16        println "((a ^ b) & c) ----> "+((a ^ b) & c)
17        println "((~a) & c) ----> "+((~a) & c)
18    }
19 }
```

```
a = 0b00101111 ----> 47
b = 0b000010101 ----> 21
(a & a) ----> 47
(a & b) ----> 5
(a | a) ----> 47
(a | a) ----> 63
c = 0b11111111
((a ^ a) & c) ----> 0
((a ^ b) & c) ----> 58
((~a) & c) ----> 208
```

## Conditional operators

```
1 class GroovyOperatorsExample12 {
2     static void main(args) {
3         println "(!true) ----> "+(!true)
4         println "(!'javatpoint') ----> "+(!'javatpoint')
5         println "!Null ----> "+(!'')
6     }
7 }
```

```
(!true) ----> false
(!'javatpoint') ----> false
!Null ----> true
```