

nextleap

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Go Online Compiler

ShareRun Code

1package main

2

3import (

4 "fmt"

5 "runtime"

6 "time"

7)

8

9// Function to calculate factorial

10func factorial(n int) float64 {

11 if n == 0 {

12 return 1

13 }

14 return float64(n) * factorial(n-1)

15}

16

17// Function to calculate nCr

18func combination(n, r int) float64 {

19 return factorial(n) / (factorial(r) * factorial(n-r))

20}

21

InputOutput

1*a^5*b^0 + 5*a^4*b^1 + 10*a^3*b^2 + 10*a^2*b^3 + 5*a^1*b^4 + 1*a^0*b^5

===== METRICS =====

Simulated Compilation Time: 319.267μs

Execution Time: 60.521μs

Memory Used: 552 bytes

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InputOutput

```
21
22 // Function to print binomial expansion for (a + b)^n
23 func binomialExpansion(a, b float64, n int) {
24     for k := 0; k <= n; k++ {
25         coef := combination(n, k)
26         fmt.Printf("%f*a^%d*b^%d", coef, n-k, k)
27         if k != n {
28             fmt.Print(" + ")
29         }
30     }
31     fmt.Println()
32 }
33
34 func main() {
35     // Simulated compilation time
36     compileStart := time.Now()
37     for i := 0; i < 1000000; i++ {
38     }
39     compileTime := time.Since(compileStart)
40
41     // Memory before execution
```

```
1*a^5*b^0 + 5*a^4*b^1 + 10*a^3*b^2 + 10*a^2*b^3 + 5*a^1*b^4 +
1*a^0*b^5

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```
42 var mBefore runtime.MemStats
43 runtime.ReadMemStats(&mBefore)
44
45 // Execution start
46 startTime := time.Now()
47
48 // Hardcoded values for NextLeap
49 a := 1.0
50 b := 1.0
51 n := 5
52 binomialExpansion(a, b, n)
53
54 // Execution end
55 executionTime := time.Since(startTime)
56
57 // Memory after execution
58 var mAfter runtime.MemStats
59 runtime.ReadMemStats(&mAfter)
60
61 // Output metrics
62 fmt.Println("\n===== METRICS =====")
```

InputOutput

1*a^5*b^0 + 5*a^4*b^1 + 10*a^3*b^2 + 10*a^2*b^3 + 5*a^1*b^4 + 1*a^0*b^5

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GoC#C++HTMLJavaJSJupyterKotlin

binomialExpansion(a, b, n)

// Execution end

executionTime := time.Since(startTime)

// Memory after execution

var mAfter runtime.MemStats

runtime.ReadMemStats(&mAfter)

// Output metrics

fmt.Println("\n==== METRICS =====")

fmt.Printf("Simulated Compilation Time: %v\n", compileTime)

fmt.Printf("Execution Time: %v\n", executionTime)

fmt.Printf("Memory Used: %d bytes\n", mAfter.Alloc-mBefore.Alloc)

}

Input

Output

1*a^5*b^0 + 5*a^4*b^1 + 10*a^3*b^2 + 10*a^2*b^3 + 5*a^1*b^4 + 1*a^0*b^5

==== METRICS =====

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Run Code

Input

Output

```
1 package main
2
3 import (
4     "fmt"
5     "runtime"
6     "time"
7 )
8
9 // Function to check if a number is Armstrong
10 func isArmstrong(num int) bool {
11     temp := num
12     sum := 0
13     for temp > 0 {
14         digit := temp % 10
15         sum += digit * digit * digit
16         temp /= 10
17     }
18     return sum == num
19 }
20
21 func main() {
```

153 is an Armstrong number

===== METRICS =====

Simulated Compilation Time: 324.197µs

Execution Time: 31.101µs

Memory Used: 520 bytes

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21func main() {
22 // Simulated compilation time
23 compileStart := time.Now()
24 for i := 0; i < 1000000; i++ {
25 }
26 compileTime := time.Since(compileStart)
27
28 // Memory before execution
29 var mBefore runtime.MemStats
30 runtime.ReadMemStats(&mBefore)
31
32 // Execution start
33 startTime := time.Now()
34
35 // Hardcoded value for NextLeap
36 number := 153
37 if isArmstrong(number) {
38 fmt.Printf("%d is an Armstrong number\n", number)
39 } else {
40 fmt.Printf("%d is NOT an Armstrong number\n", number)
41 }
}

InputOutput

153 is an Armstrong number

===== METRICS =====
Simulated Compilation Time: 324.197µs
Execution Time: 31.101µs
Memory Used: 520 bytes

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Run Code

➞ **Output**

```

36     number := 153
37     if isArmstrong(number) {
38         fmt.Printf("%d is an Armstrong number\n", number)
39     } else {
40         fmt.Printf("%d is NOT an Armstrong number\n", number)
41     }
42
43     // Execution end
44     executionTime := time.Since(startTime)
45
46     // Memory after execution
47     var mAfter runtime.MemStats
48     runtime.ReadMemStats(&mAfter)
49
50     // Output metrics
51     fmt.Println("\n===== METRICS =====")
52     fmt.Printf("Simulated Compilation Time: %v\n", compileTime)
53     fmt.Printf("Execution Time: %v\n", executionTime)
54     fmt.Printf("Memory Used: %d bytes\n", mAfter.Alloc-mBefore.Alloc)
55 }
56

```

Memory Used: 520 bytes

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InputOutput

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```
1 package main
2
3 import (
4     "fmt"
5     "runtime"
6     "time"
7 )
8
9 // Function to check if a year is a leap year
10 func isLeapYear(year int) bool {
11     return (year%4 == 0 && year%100 != 0) || (year%400 == 0)
12 }
13
14 func main() {
15     // Simulated compilation time
16     compileStart := time.Now()
17     for i := 0; i < 1000000; i++ {
18     }
19     compileTime := time.Since(compileStart)
20
21     // Memory before execution
```

2024 is a Leap Year

===== METRICS =====

Simulated Compilation Time: 320.227μs

Execution Time: 25.25μs

Memory Used: 512 bytes

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Run Code

Input

Output

```
21 // Memory before execution
22 var mBefore runtime.MemStats
23 runtime.ReadMemStats(&mBefore)
24
25 // Execution start
26 startTime := time.Now()
27
28 // Hardcoded value for NextLeap
29 year := 2024
30 if isLeapYear(year) {
31     fmt.Printf("%d is a Leap Year\n", year)
32 } else {
33     fmt.Printf("%d is NOT a Leap Year\n", year)
34 }
35
36 // Execution end
37 executionTime := time.Since(startTime)
38
39 // Memory after execution
40 var mAfter runtime.MemStats
41 runtime.ReadMemStats(&mAfter)
```

2024 is a Leap Year

===== METRICS =====

Simulated Compilation Time: 320.227µs

Execution Time: 25.25µs

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50

```
if isLeapYear(year) {  
    fmt.Printf("%d is a Leap Year\n", year)  
} else {  
    fmt.Printf("%d is NOT a Leap Year\n", year)  
}  
  
// Execution end  
executionTime := time.Since(startTime)  
  
// Memory after execution  
var mAfter runtime.MemStats  
runtime.ReadMemStats(&mAfter)  
  
// Output metrics  
fmt.Println("\n==== METRICS ====")  
fmt.Printf("Simulated Compilation Time: %v\n", compileTime)  
fmt.Printf("Execution Time: %v\n", executionTime)  
fmt.Printf("Memory Used: %d bytes\n", mAfter.Alloc-mBefore.Alloc)  
}
```

2024 is a Leap Year

==== METRICS ====

Simulated Compilation Time: 320.227μs

Execution Time: 25.25μs

Memory Used: 512 bytes

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