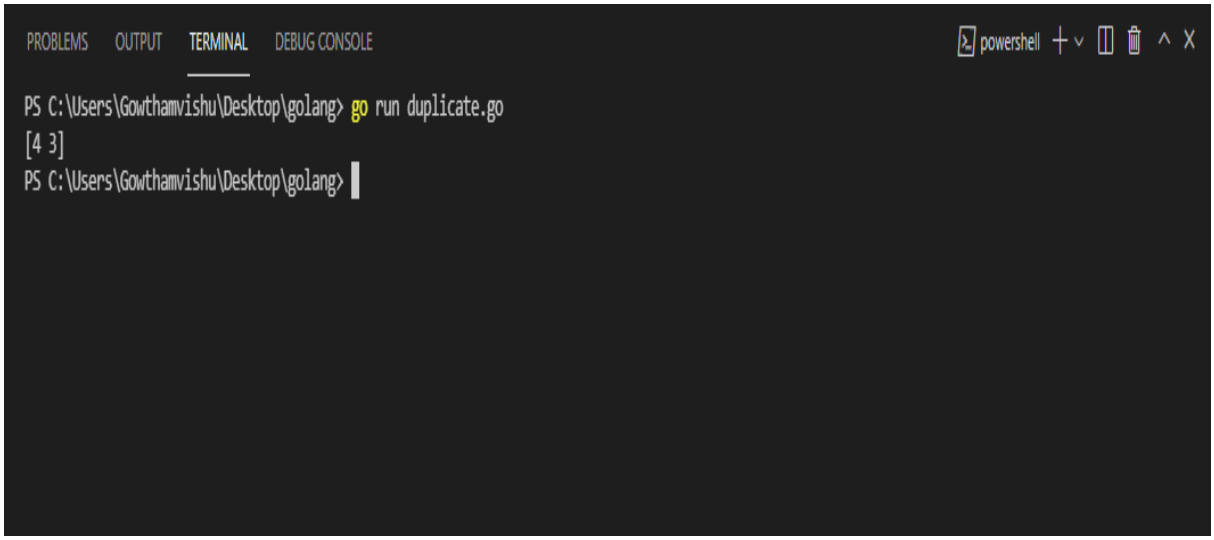
1. **Go program to find duplicate elements in array.**

```go
package main

import "fmt"

func main() {
    var a []int
    arr := []int{1, 2, 3, 4, 5, 4, 3}
    visited := make(map[int]bool, 0)
    for i := 0; i < len(arr); i++ {
        if visited[arr[i]] == true {
            a = append(a, arr[i])
        } else {
            visited[arr[i]] = true
        }
    }
    fmt.Println(a)
}
```

Output:



2. Go program to find largest and smallest number in an array.

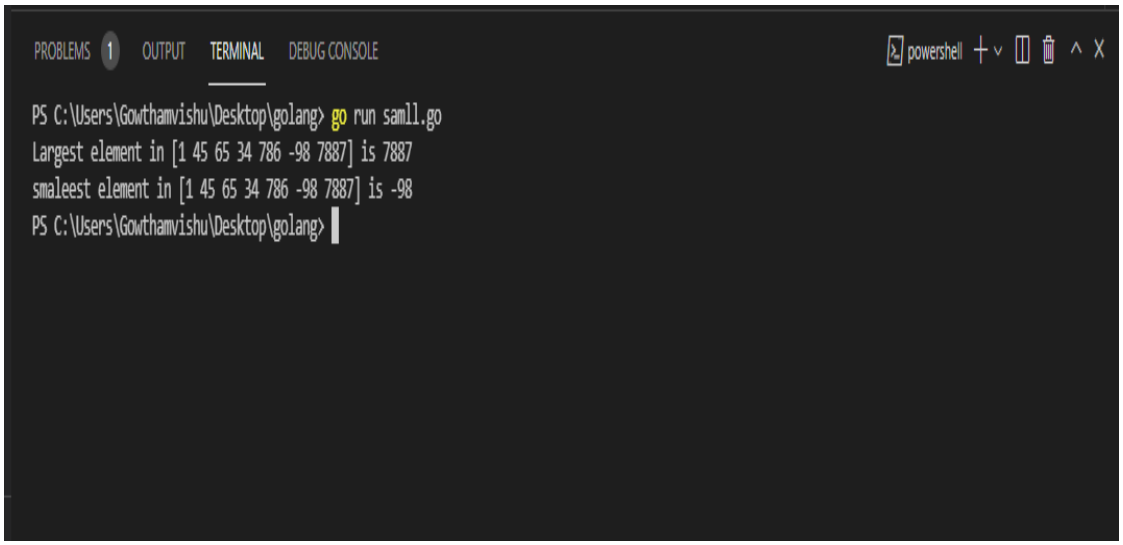
```go
package main

import "fmt"

func main() {
    a := []int{1, 45, 65, 34, 786, -98, 7887}
    element := a[0]
    element1 := a[0]
    for _, v := range a {
        if v > element {
            element = v
        }
    }
    for _, u := range a {
        if u < element1 {
            element1 = u
        }

    }
    fmt.Printf("Largest element in %d is %d\n", a, element)
    fmt.Printf("smaleest element in %d is %d", a, element1)
}
```

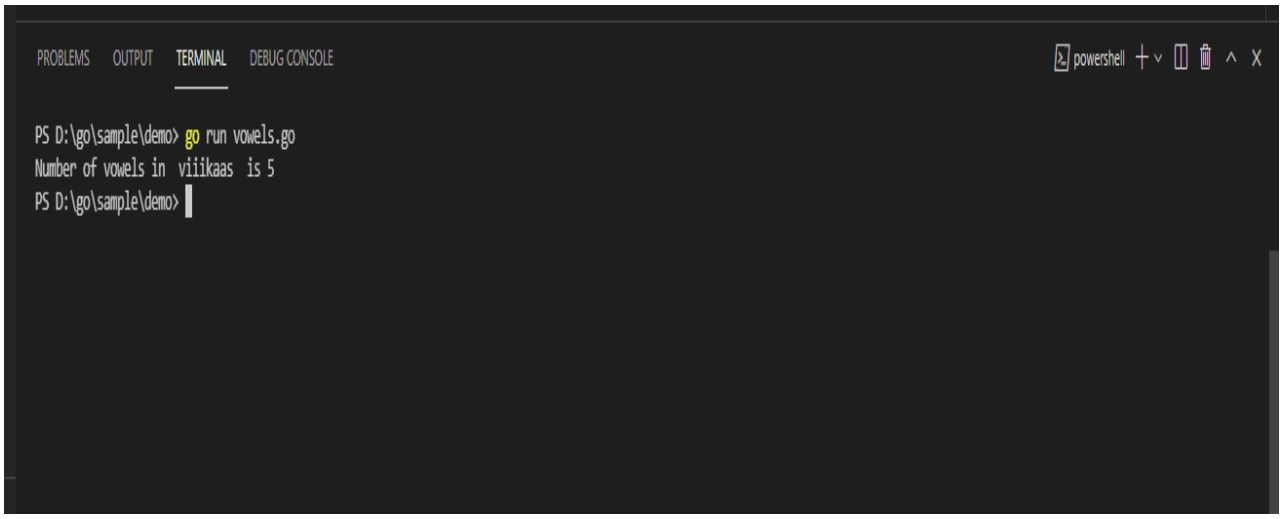
Output:



3. Go program to count number of vowels in a given string.

```
4. package main
5.
6. import "fmt"
7.
8. func main() {
9.     str := "viiikaas"
10.    count := 0
11.
12.    for _, char := range str {
13.        if char == 'a' || char == 'e' || char == 'i' || char == 'o' ||
   char == 'u' {
14.            count = count + 1
15.        }
16.
17.    }
18.    fmt.Println("Number of vowels in ", str, " is", count)
19.}
```

Output:



4. Go Program to print **indices of the two numbers such that they add up to target.**

```go
package main

import "fmt"

func main() {
    arr := []int{2, 7, 11, 15}
    twoSum(arr, 9)
}
func twoSum(nums []int, target int) {
    var a []int
    for i := 0; i < len(nums); i++ {
        for j := i + 1; j < len(nums); j++ {
            if nums[i]+nums[j] == target {
                a = append(a, i)
                a = append(a, j)
            }

        }
    }
    fmt.Println(a)
}
```

Output:

5. Go program to print median of two sorted arrays.

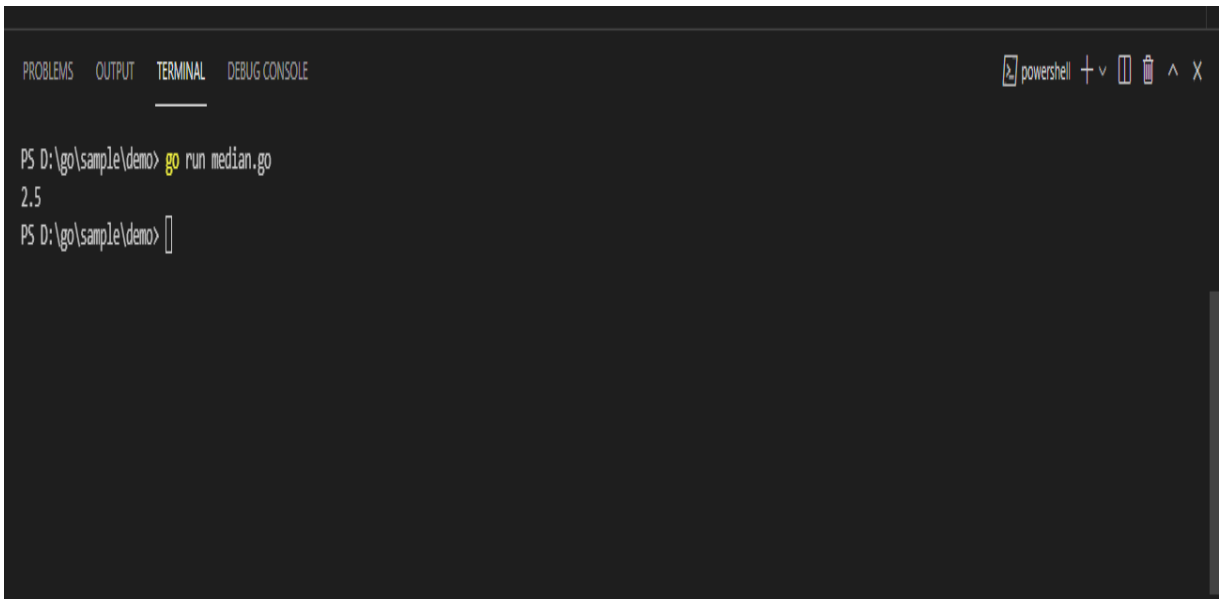
```go
package main

import (
    "fmt"
    "sort"
)

func main() {
    arr1 := []int{1, 2}
    arr2 := []int{3, 4}
    findMedianSortedArrays(arr1, arr2)
}
func findMedianSortedArrays(nums1 []int, nums2 []int) {
    nums1 = append(nums1, nums2...)
    var ans float64
    n := len(nums1)
    sort.Ints(nums1)
    if n%2 != 0 {
        ans = float64(nums1[(n-1)/2])
    } else {
        ans = float64(nums1[(n-1)/2]+nums1[n/2]) / 2.0

    }
    fmt.Println(ans)
}
```

Output:



6. Go program to reverse an integer.

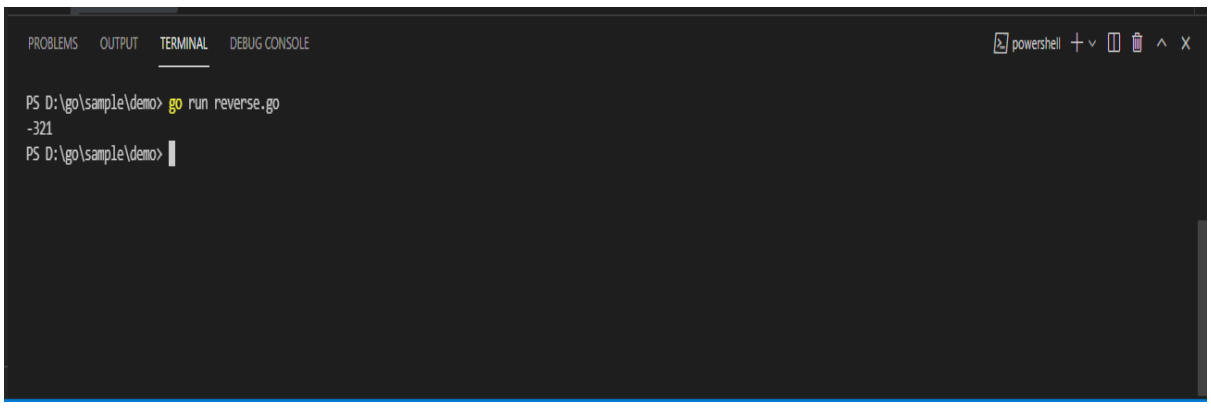
```go
package main

import "fmt"

func main() {
    reverse(-123)
}
func reverse(x int) int {
    res := 0
    min := -2147483648
    max := 2147483647
    for x > 0 {
        num := x % 10
        res = res*10 + num
        x /= 10
    }
    for x < 0 {
        num := x % 10
        res = res*10 + num
        x /= 10
    }
    if res >= max || res <= min {
        return 0
    }
    fmt.Println(res)
    return res

}
```

Output:



7. Go program to check a string contains a specified substring.

```go
package main

import (
    "fmt"
    "strings"
)

func main() {
    var str string = "Hello Tcsers"
    var subStr string = "Tcs"

    if strings.Contains(str, subStr) == true {
        fmt.Printf("String (%s) contains sub-string (%s)", str, subStr)
    } else {
        fmt.Printf("String (%s) does not contains substring (%s)", str, subStr
)
    }
}
```

Output:

8. Go program to print ascii values.

```go
package main

import "fmt"

func main() {
    str := "vikas"

    fmt.Println("Ascii value of string:")
    for i := 0; i < len(str); i++ {
        fmt.Printf("%c  %d\n", str[i], str[i])
    }
}
```

Output:

9. Go program to sort an array using bubblesort.

```go
package main

import "fmt"

func BubbleSort(array []int) []int {
    for i := 0; i < len(array)-1; i++ {
        for j := 0; j < len(array)-i-1; j++ {
            if array[j] > array[j+1] {
                array[j], array[j+1] = array[j+1], array[j]
            }
        }
    }
    return array
}
func main() {
    array := []int{11, 14, 3, 8, 18, 17, 43}
    fmt.Println(BubbleSort(array))
}
```

Output:

10. Go program to search a element in an array using binary search.

```go
package main

import "fmt"

func binarySearch(needle int, haystack []int) bool {

    low := 0
    high := len(haystack) - 1

    for low <= high {
        median := (low + high) / 2

        if haystack[median] < needle {
            low = median + 1
        } else {
            high = median - 1
        }
    }

    if low == len(haystack) || haystack[low] != needle {
        return false
    }

    return true
}

func main() {
    items := []int{1, 2, 9, 20, 31, 45, 63, 70, 100}
    fmt.Println(binarySearch(79, items))
}
```

Output: