Go Language Programs

1. Count digits in a number

```
package main
import "fmt"

func main() {
    num := 12345
    count := 0
    for n := num; n > 0; n /= 10 {
        count++
    }
    fmt.Println("Digits:", count)
}
```

2. Product of digits in a number

```
package main
import "fmt"

func main() {
    num := 123
    product := 1
    for n := num; n > 0; n /= 10 {
        product *= n % 10
    }
    fmt.Println("Product of digits:", product)
}
```

3. Positive and negative numbers in an array

```
package main
import "fmt"

func main() {
    arr := []int{1, -2, 3, -4, 5}
    pos, neg := 0, 0
    for _, v := range arr {
        if v >= 0 {
            pos++
        } else {
            neg++
        }
    }
    fmt.Println("Positive numbers:", pos)
    fmt.Println("Negative numbers:", neg)
}
```

4. Array items in even index positions

```
package main
import "fmt"

func main() {
    arr := []int{10, 20, 30, 40, 50}
    for i := 0; i < len(arr); i += 2 {
        fmt.Print(arr[i], " ")
```

```
    }
}
```

5. Array items in odd index positions

```
package main
import "fmt"

func main() {
    arr := []int{10, 20, 30, 40, 50}
    for i := 1; i < len(arr); i += 2 {
        fmt.Print(arr[i], " ")
    }
}
```

6. Sum of each row and column of a matrix

```
package main
import "fmt"

func main() {
    matrix := [][]int{
        {1, 2, 3},
        {4, 5, 6},
    }

    // Row sums
    for i, row := range matrix {
        sum := 0
        for _, val := range row {
            sum += val
        }
        fmt.Printf("Sum of row %d: %d\n", i, sum)
    }

    // Column sums
    cols := len(matrix[0])
    for j := 0; j < cols; j++ {
        sum := 0
        for i := 0; i < len(matrix); i++ {
            sum += matrix[i][j]
        }
        fmt.Printf("Sum of column %d: %d\n", j, sum)
    }
}
```

7. Sum of matrix diagonal

```
package main
import "fmt"

func main() {
    matrix := [][]int{
        {1, 2, 3},
        {4, 5, 6},
        {7, 8, 9},
    }

    sum := 0
    for i := 0; i < len(matrix); i++ {
        sum += matrix[i][i]
    }
    fmt.Println("Diagonal sum:", sum)
```

```
}
```

8. ASCII Values of string characters

```
package main
import "fmt"

func main() {
    str := "GoLang"
    for _, ch := range str {
        fmt.Printf("%c: %d\n", ch, ch)
    }
}
```

9. Concatenate 2 strings

```
package main
import "fmt"

func main() {
    str1 := "Hello"
    str2 := "World"
    result := str1 + " " + str2
    fmt.Println(result)
}
```

10. String length, First character, Last character

```
package main
import "fmt"

func main() {
    str := "Golang"
    fmt.Println("Length:", len(str))
    fmt.Printf("First char: %c\n", str[0])
    fmt.Printf("Last char: %c\n", str[len(str)-1])
}
```