The code for the sum loop:

**1. Package Declaration**

 Every Go program must start with a package declaration.

 The main package is a special package in Go. The main function is the entry point of a Go program, and when the program is executed, it will start from here.

Syntax:

package main

2. **Importing the fmt Package**

 The import statement is used to include external packages into your Go program.

 In this case, we're importing the "fmt" package, which provides functions for formatted I/O (Input/Output), such as printing to the console and reading user input.

Syntax:

import "fmt"

3. **Main Function**

 The main function is the starting point of the program. It is a special function that Go looks for when running the program.

 Every Go program must have exactly one main function in the main package.

Syntax:

func main() {

4. **Declaring a Variable n**

This line declares a variable n of type int (integer). It will be used to store the number that the user enters.

Syntax:

var n int

5. **Prompting User for Input**

 The fmt.Print() function prints the string "Enter a number: " to the console without a newline.

 It prompts the user to enter a number.

Syntax:

fmt.Print("Enter a number: ")

6. **Reading User Input**

 The fmt.Scan() function reads user input from the console. The &n syntax passes the address of the variable n, so that Scan() can store the user input in the variable n.

 When the user enters a number and presses Enter, it will be stored in n.

Syntax:

fmt.Scan(&n)

7. **Initializing a sum Variable**

Here, the sum variable is declared and initialized to 0. It will hold the sum of the numbers from 1 to n.

Syntax:

sum := 0

8. **For Loop to Calculate the Sum**

 This is a for loop that iterates from i = 1 to i = n.

* i := 1 initializes the loop variable i to 1.
* i <= n is the condition that keeps the loop running as long as i is less than or equal to n.
* i++ increments the value of i by 1 after each iteration.

 Inside the loop, the statement sum += i adds the current value of i to sum (this is shorthand for sum = sum + i).

9. **Printing the Result**

 The fmt.Printf() function is used to print formatted text to the console.

 In this case, it prints the sum of numbers from 1 to n. The %d format specifier is used to insert integer values:

* The first %d will be replaced by the value of n.
* The second %d will be replaced by the value of sum.

 The \n at the end is used to print a newline after the message.