

In the C programming language, the **for** loop is a fundamental control structure that allows for the repetitive execution of a block of code. It is particularly useful when the number of iterations is known beforehand. The syntax of a **for** loop includes three essential components within its parentheses: initialization, condition, and increment/decrement statement.

```
for (initialization; condition; increment/decrement) {  
    // Code to be repeated  
}
```

Example 1 :- Print Numbers from 1 to 10:

```
#include <stdio.h>  
  
int main() {  
    for (int i = 1; i <= 10; i++) {  
        printf("%d ", i);  
    }  
  
    printf("\n");  
  
    return 0;  
}
```

Example 2 :- Print a Countdown from 10 to 1:

```
#include <stdio.h>  
  
int main() {  
    for (int i = 10; i >= 1; i--) {  
        printf("%d ", i);  
    }  
}
```

```
printf("\n");

return 0;
}
```

Example 03 :- Calculate the Sum of Numbers from 1 to 5:

```
#include <stdio.h>

int main() {
    int sum = 0;

    for (int i = 1; i <= 5; i++) {
        sum += i;
    }

    printf("Sum of numbers from 1 to 5 is %d\n", sum);

    return 0;
}
```

Example 04 :- Print a table of Desired number

```
#include <stdio.h>

int main() {
    int number ;
    Printf("Enter a number\n");
```

```
    scanf("%d",&number);

    printf("Multiplication Table for %d:\n", number);

    for (int i = 1; i <= 10; i++)
    {
        printf("%d x %d = %d\n", number, i, number * i);
    }

    return 0;
}
```

Example 05 :- Print a Square of Asterisks (2x2):

```
#include <stdio.h>

int main() {
    for (int i = 0; i < 2; i++) {
        for (int j = 0; j < 2; j++) {
            printf("* ");
        }
        printf("\n");
    }

    return 0;
}
```

