

C Programming

Functions

Returning a value from a function

Functions can return data after they have completed. This data can be a regular data type, e.g., an int, float, etc., or even a data structure such as an array.

One important point to note is that a function can only return **a single data item**, i.e., it can only return a single int, float, etc., or a single data structure. It is not possible to return more than one data item as is the case when you are able to pass multiple parameters.

Let's have a look at the following simple C program that will return data.

```
/*
Returning a value from a function
*/

#include <stdio.h>

// #define SIZE 5

// Function signature
int find_minimum(int, int);

int main()
{
    int num1, num2;
    int min = 0;

    printf("Enter any two whole numbers\n");
    scanf("%d", & num1);
    scanf("%d", & num2);

    // Find the minimum of the two numbers
    min = find_minimum(num1, num2);
```

```

    printf("\nThe minimum of %d and %d is %d", num1, num2, min);

    return 0;

} // end main()

//Find the minimum value of two whole numbers
int find_minimum(int n1, int n2)
{
    int minimum = 0;

    // if n1 is less than n2
    if(n1 < n2)
    {
        minimum = n1;
    } // end if
    else
    {
        minimum = n2;
    } // end else

    // return the data value in minimum
    return minimum;

} // end find_minimum()

```

Repl 13.1: <https://replit.com/@michaelTUDublin/131-Returning-data-from-function-1>

To make the code above more efficient and to capture the same numbers entered. let's modify as follows:

```

/*
Returning a value from a function
*/

#include <stdio.h>

```

```

//#define SIZE 5

// Function signature
int find_minimum(int, int);

int main()
{
    int num1, num2;
    int min = 0;

    // Enter two whole numbers and check if they are equal
    do
    {
        printf("Enter any two different whole numbers\n");
        scanf("%d", & num1);
        scanf("%d", & num2);

        if(num1 == num2)
        {
            printf("\nNumbers are equal. Try again\n\n");
        } // end if
    } // end do
    while(num1 == num2);

    // Find the minimum of the two numbers
    min = find_minimum(num1, num2);

    printf("\nThe minimum of %d and %d is %d", num1, num2, min);

    return 0;

} // end main()

//Find the minimum value of two whole numbers
int find_minimum(int n1, int n2)
{
    // if n1 is less than n2
    if(n1 < n2)
    {

```

```
        return n1;
    } // end if
    else
    {
        return n2;
    } // end else

} // end find_minimum()
```

Repl 13.2: <https://replit.com/@michaelTUDublin/132-Returning-data-from-function-2>