

# Lab #8

## Program Design

### Instructions:

To explore the algorithm for determining if a number is prime or not, I would like you to implement a version of the algorithm in the C programming language. What follows is my version of how to do it in C, but if there are any errors, I would expect you to figure them out, but I don't think there are.

```
/* A Program to check if a number is prime or not */
/* Author: Damian Gordon */
/* Date: 22/11/2011 */

#include <stdio.h>

main( )
{
    int input;
    int count;

    printf("Enter a number to check if it is prime:\n");
    scanf("%d",&input);

    for ( count = input - 1 ; count >= 2 ; count -- )
    {
        printf("Checking %d / %d \n", input, count);

        if ( input % count == 0 )
        {
            printf("%d is not prime.\n", input);
            break;
        }
    }
    if ( count == input )
        printf("%d is prime.\n", input);
    return 0;
}
```

I would like you to test your code with the following numbers:

7, 9, 11, 17, 21, 33, 37, 41, 45, 47, 51, 53, 57, 59

**Submission:** In the Word document you have all your labs and tutorials in:

PROGRAM-DESIGN-PORTFOLIO.DOC (or .DOCX)

add in the answers. Now e-mail your document to Damian.Gordon@dit.ie with a subject heading of PROGRAM DESIGN LAB #8 and in the message of your e-mail please let me know your full name, your student number, the name of your programme, the programme code, the name of the module, the year you are in (first year), and your assignment.

**PLEASE NOTE: If you do not have the correct subject heading on your e-mail, or the correct filename, your submission WILL be rejected.**

**Marking:**

Please note, this lab is due for submission at the end of this week. Each of these labs contributes to your final result in this module, so it's best to get the earlier ones done as well as you can, because as the labs continue on they will get harder, so you might as well pick up the easy marks early on.