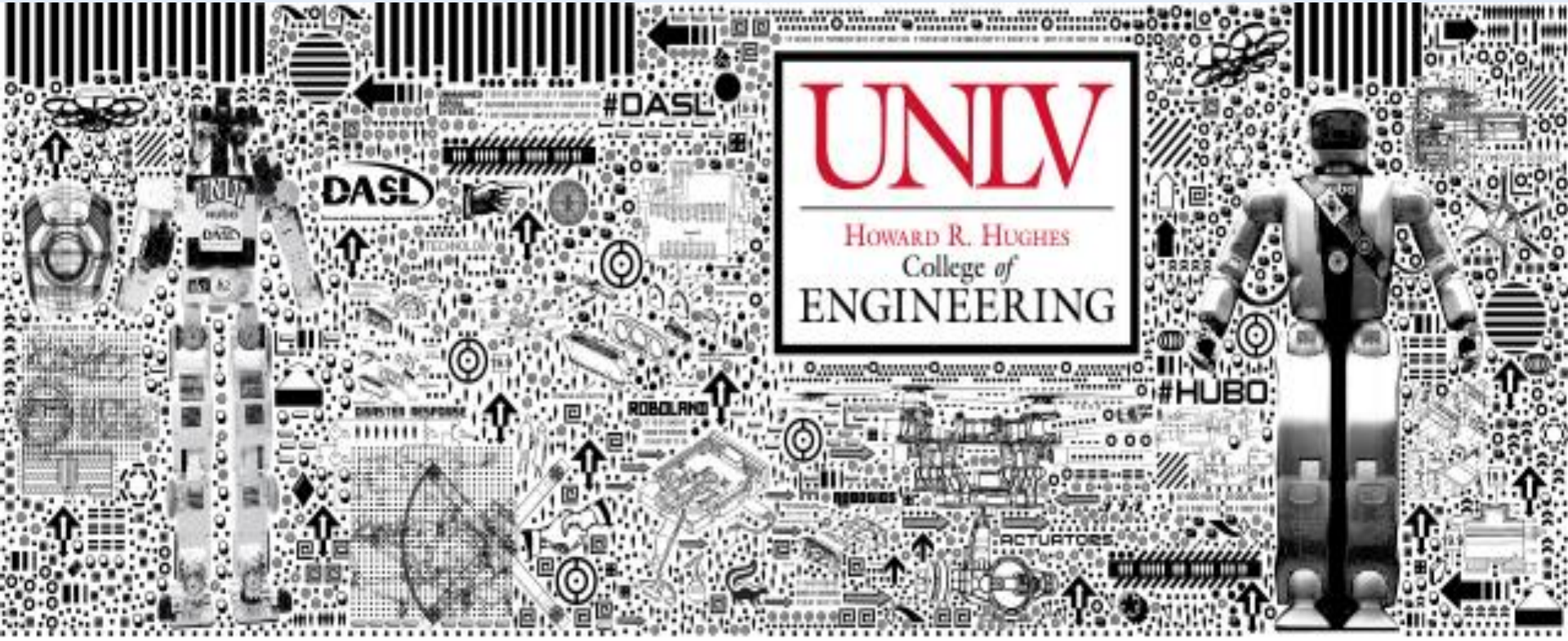
UNIVERSITY OF NEVADA LAS VEGAS
DRONES AND AUTONOMOUS SYSTEMS LAB (DASL@UNLV)



C PROGRAMING / LINUX [DASL-100]

WEEK 2 [Section 4]

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Wednesday, May 31, 2017, 13:04

C Program to Find Factorial of a Number

The factorial of a positive integer n is equal to 1*2*3*...n. You will learn to calculate the factorial of a number using for loop in this example.


```c
#include <stdio.h>
int main()
{
    int n, i;
    unsigned long long factorial = 1;

    printf("Enter an integer: ");
    scanf("%d",&n);

    // show error if the user enters a negative integer
    if (n < 0)
        printf("Error! Factorial of a negative number doesn't exist.");

    else
    {
        for(i=1; i<=n; ++i)
        {
            factorial *= i;                  // factorial = factorial*i;
        }
        printf("Factorial of %d = %llu", n, factorial);
    }

    return 0;
}
```

Output

```
Enter an integer: 10
Factorial of 10 = 3628800
```

Source: programiz.com

C Program to Generate Multiplication Table

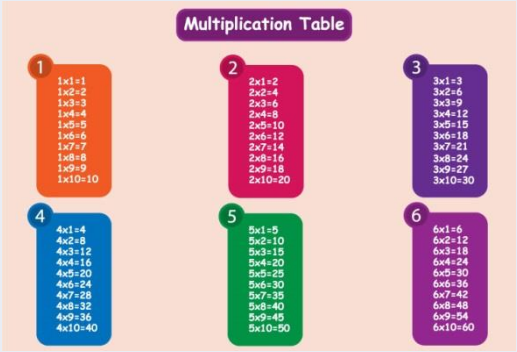
- Example to generate the multiplication table of a number (entered by the user) using for loop.

```c
#include <stdio.h>
int main()
{
    int n, i;

    printf("Enter an integer: ");
    scanf("%d",&n);

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

    return 0;
}
```



Output

```
Enter an integer: 9
9 * 1 = 9
9 * 2 = 18
9 * 3 = 27
9 * 4 = 36
9 * 5 = 45
9 * 6 = 54
9 * 7 = 63
9 * 8 = 72
9 * 9 = 81
9 * 10 = 90
```

Source: programiz.com

- **C Program to Find LCM of two Numbers**
  - Examples on different ways to calculate the LCM (Lowest Common Multiple) of two integers using loops and decision making statements.

- **C**

```c
#include <stdio.h>
int main()
{
    int n1, n2, minMultiple;
    printf("Enter two positive integers: ");
    scanf("%d %d", &n1, &n2);

    // maximum number between n1 and n2 is stored in minMultiple
    minMultiple = (n1>n2) ? n1 : n2;

    // Always true
    while(1)
    {
        if( minMultiple%n1==0 && minMultiple%n2==0 )
        {
            printf("The LCM of %d and %d is %d.", n1, n2,minMultiple);
            break;
        }
        ++minMultiple;
    }
    return 0;
}
```

Output

```
Enter two positive integers: 72
120
The LCM of 72 and 120 is 360.
```

Source: programiz.com

C Program to Check Whether a Number is Prime or Not

- Example to check whether an integer (entered by the user) is a prime number or not using for loop and if...else statement.
- A prime number is a positive integer which is divisible only by 1 and itself. For example: 2, 3, 5, 7, 11, 13

```c
#include <stdio.h>
int main()
{
    int n, i, flag = 0;

    printf("Enter a positive integer: ");
    scanf("%d",&n);

    for(i=2; i<=n/2; ++i)
    {
        // condition for nonprime number
        if(n%i==0)
        {
            flag=1;
            break;
        }
    }

    if (flag==0)
        printf("%d is a prime number.",n);
    else
        printf("%d is not a prime number.",n);

    return 0;
}
```

Output

```
Enter a positive integer: 29
29 is a prime number.
```

Source: programiz.com

Wednesday, May 31, 2017, 13:19

- **To do List**
  - Finish Homework 2
  - Create a Program to C Program to Find GCD of two Numbers (DUE NEXT SECTION)
  - Create a C Program to Display Fibonacci Sequence (DUE NEXT SECTION)

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