NIELIT GORAKHPUR

Course Name: O Level (2nd Sem) **Subject: C language**

Topic: C Loops Example **Date: 20-03-2020**

Program to Check Prime Number

```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 non-prime
        if (n % i == 0) {
            flag = 1;
            break;
        }
    }

    if (n == 1) {
        printf("1 is neither prime nor composite.");
    }
    else {
        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.
```

Armstrong Numbers Between Two Integers

```c
#include <math.h>
#include <stdio.h>
int main() {
    int low, high, i, temp1, temp2, rem, n = 0;
    float result = 0.0;
    printf("Enter two numbers(intervals): ");
    scanf("%d %d", &low, &high);
    printf("Armstrong numbers between %d and %d are: ", low, high);

    for (i = low + 1; i < high; ++i) {
        temp2 = i;
        temp1 = i;
```

```
        // number of digits calculation
        while (temp1 != 0) {
            temp1 /= 10;
            ++n;
        }

        // result contains sum of nth power of its digits
        while (temp2 != 0) {
            rem = temp2 % 10;
            result += pow(rem, n);
            temp2 /= 10;
        }

        // check if i is equal to the sum of nth power of its digits
        if ((int)result == i) {
            printf("%d ", i);
        }

        // resetting the values
        n = 0;
        result = 0;
    }

    return 0;
}
```

Factors of a Positive Integer

```
#include <stdio.h>
int main() {
    int num, i;
    printf("Enter a positive integer: ");
    scanf("%d", &num);
    printf("Factors of %d are: ", num);
    for (i = 1; i <= num; ++i) {
        if (num % i == 0) {
            printf("%d ", i);
        }
    }
    return 0;
}
```

Output

```
Enter a positive integer: 60
Factors of 60 are: 1 2 3 4 5 6 10 12 15 20 30 60
```