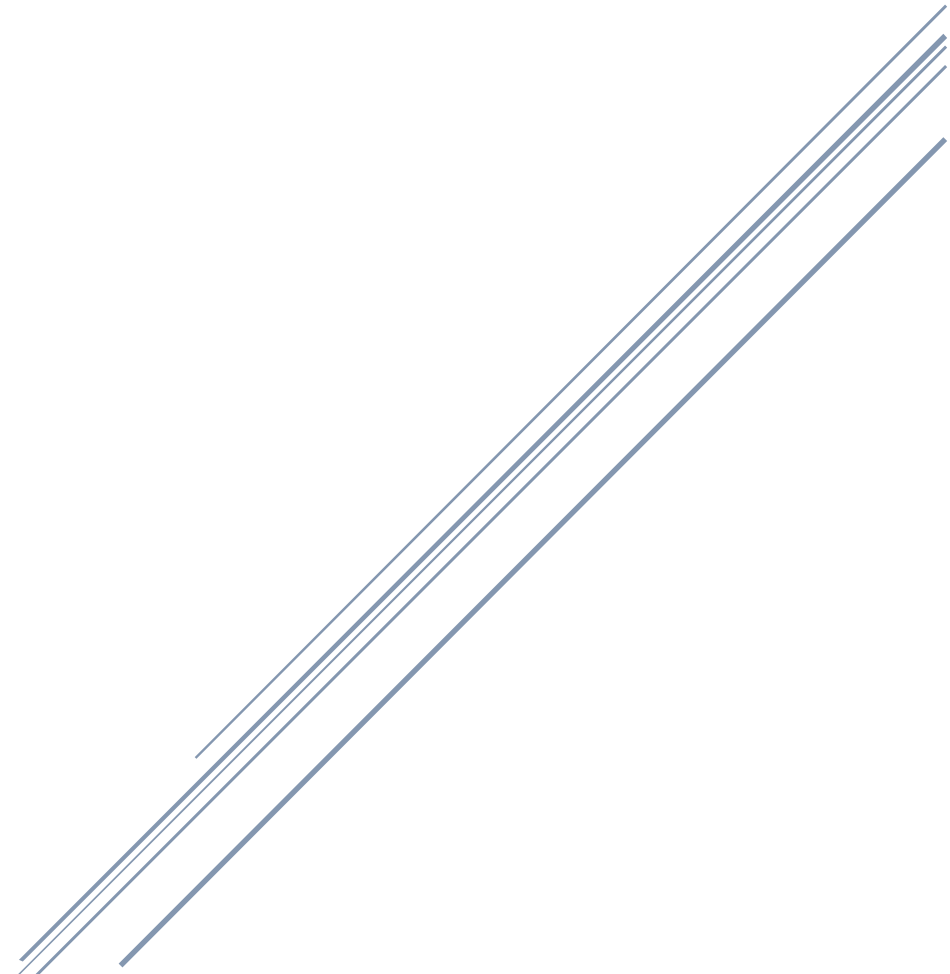
ASSIGNMENT

Lecture 5



C-Programming (Function)

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EX1: Prime Numbers Between two Intervals by Making User-defined Function

```c
#include <stdio.h>
// Function to check if a number is prime
int isPrime(int num) {
    if (num <= 1) {
        return 0; // Not prime
    }
    for (int i = 2; i * i <= num; ++i) {
        if (num % i == 0)
            return 0; // Not prime
            }
    return 1; // Prime
}

void printPrimesInRange(int start, int end) {
    printf("Prime numbers between %d and %d are:\n", start, end);

    for (int i = start; i <= end; ++i) {
        if (isPrime(i)) {
            printf("%d\n", i);
        }}}

int main() {
    int start, end;
    printf("Enter the starting interval: ");
    scanf("%d", &start);
    printf("Enter the ending interval: ");
    scanf("%d", &end);

    printPrimesInRange(start, end);

    return 0;
}
```

EX2: C program to Calculate Factorial of a Number Using Recursion

```c
#include <stdio.h>

long long factorial(int num) {
    if (num == 0 || num == 1) {
        return 1;
    } else {
        return num * factorial(num - 1);
    }
}

int main() {
    int n;
    printf("Enter a non-negative integer: ");
    scanf("%d", &n);
    long long result = factorial(n);
    printf("Factorial of %d is: %lld\n", n, result);

    return 0;
}
```

EX3: C program to Reverse a Sentence Using Recursion

```c
#include <stdio.h>
void Reverse();
int main()
{
printf("Enter a sentence: ");
Reverse();
return 0;
}
void Reverse()
{
char c;
scanf("%c", &c);
if( c != '\n')
{
    Reverse();
    printf("%c",c);
}
}
```

EX4: C program to Calculate the Power of a Number Using Recursion

```c
#include <stdio.h>
int power(int n1, int n2);
int main()
{
    int base, exp;
    printf("Enter base number: ");
    scanf("%d", &base);
    printf("Enter power number (positive integer): ");
    scanf("%d", &exp);
    printf("%d^%d = %d", base, exp, power (base, exp));
    return 0;
}

int power(int base, int exp)
{
    if (exp!=0)
    return (base*power (base, exp-1));
    else return 1;

}
```