Functions

Aim – Implement a program to find nCr and another to find the factorial using recursive functions

Theory –

Recursion allows a function to call itself. Factorial uses repeated multiplication. nCr calculates combinations using factorial values. These programs demonstrate recursion and mathematical computation.

A1.

```c
#include<stdio.h>
void main(){
    int n,r;
    int NCR(int n, int r);
    printf("Enter N: ");
    scanf("%d", &n);
    printf("Enter R: ");
    scanf("%d", &r);
    int ans = NCR(n,r);
    printf("NCR is: %d", ans);
}
int NCR(int n, int r){
    int fact(int n);
    return fact(n)/(fact(r)*fact(n-r));
}
int fact(int n){
    int f = 1;
    for (int i = 1;i<=n;i++){
        f *= i;
    }
    return f;
}
```

A2.

```c
#include <stdio.h>

int main()
{
    int num;
    int factorial(int n);
    printf("Enter a number: ");
    scanf("%d", &num);
    printf("Factorial of %d is %d", num, factorial(num));
    return 0;
}

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

Conclusion

In conclusion I learnt how functions work and return values as well as the recursion and its uses. When and where to use functions in order to prevent duplicate code also was touched upon.