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Experiment 6-1

```
#include <stdio.h>

long FACT_recursive (int n) {
    if (n == 0)
        return 1;
else
    return n * FACT_recursive (n-1);
}

long FACT_nonrecursive (int n) {
    long fact = 1;
    for (int i = 1; i <= n; i++) {
        fact *= i;
    }
    return fact;
}

long BINOMIAL (int n, int r, int method) {
    long n_fact, r_fact, nr_fact;
    if (method == 1) {
        n_fact = FACT_recursive (n);
        r_fact = FACT_recursive (r);
        nr_fact = FACT_recursive (n-r);
```

Remarks:

Teacher's Signature

```
} else {
    n_fact = FACT_nonRecursive (n);
    r_fact = FACT_nonRecursive (r);
    nr_fact = FACT_nonRecursive (n-r);
}
return n_fact / (r_fact * nr_fact);
}

int main () {
    int n,r, choice;
    long result;

Printf ("Binomial co-efficient calculator \n");
Printf ("Formula: C(n,r) = n! /(r! * (n-r)!) \n");

Printf ("\n Enter value of n:");
Scanf ("%d", &n);
Printf ("Enter value of r:");
Scanf ("%d", &r);

Printf ("\n Choose method: \n 1. Recursive \n 2. Non Recursive \n
        Enter Choice :");
Scanf ("%d", &choice);

Result = BINOMIAL (n, r, choice);
```

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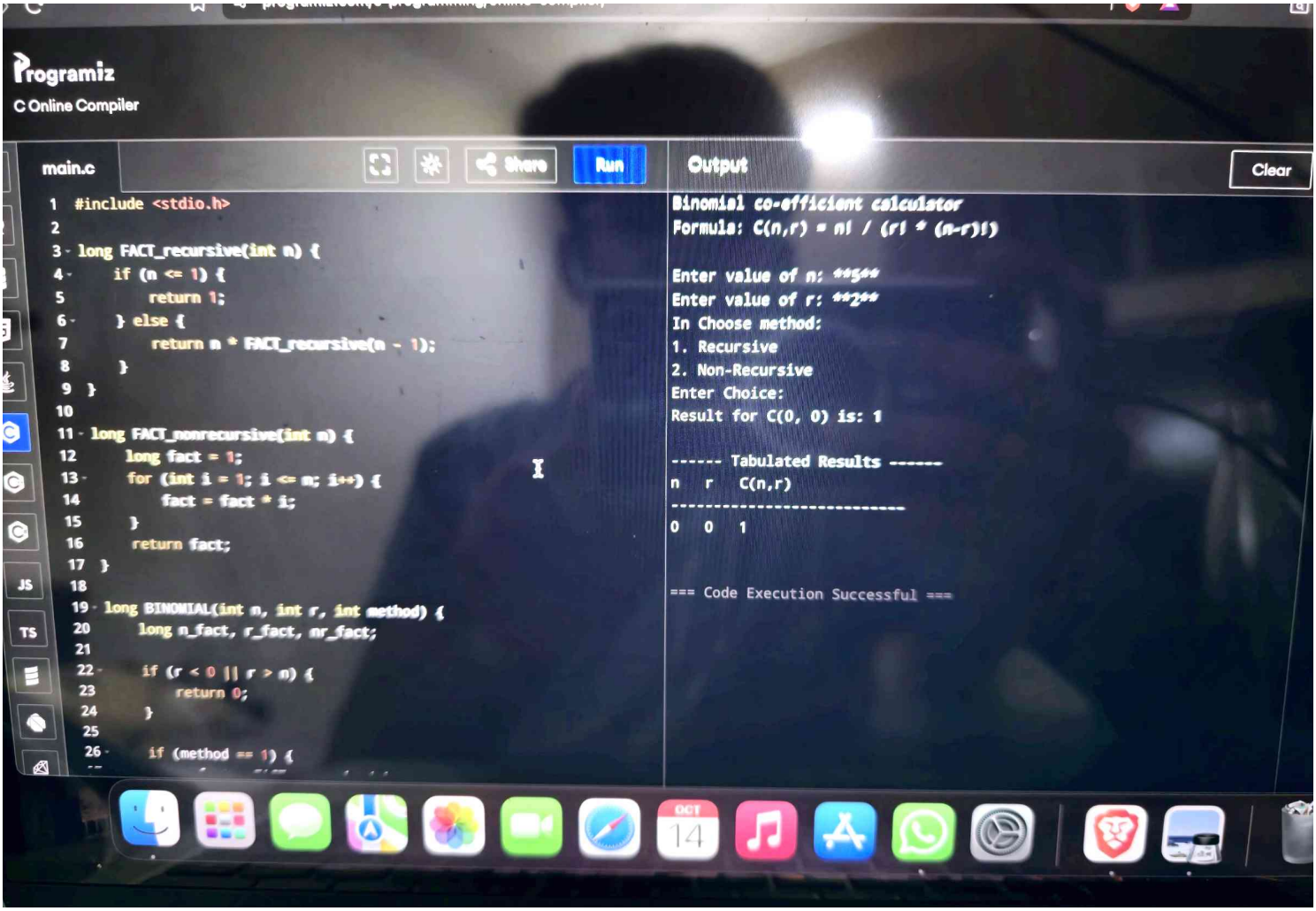
```
Printf("\n ---- Tabulated Results ---- \n");
Printf("  n\t  r\t  C(n,r)\n");
Printf("-------------------\n");

for (int i = 0; i <= n; i++) {
    long res = BINOMIAL(n, i, choice);
    Printf("%d\t %d\t %d\n", n, i, res);
}
return 0;
}
```


Programiz
C Online Compiler
main.c
Share
Run
Output
Clear
#include <stdio.h>
long FACT_recursive(int n) {
if (n <= 1) {
return 1;
} else {
return n * FACT_recursive(n - 1);
}
}
long FACT_nonrecursive(int n) {
long fact = 1;
for (int i = 1; i <= n; i++) {
fact = fact * i;
}
return fact;
}
long BINOMIAL(int n, int r, int method) {
long n_fact, r_fact, nr_fact;
if (r < 0 || r > n) {
return 0;
}
if (method == 1) {
Binomial co-efficient calculator
Formula: C(n,r) = n! / (r! * (n-r)!)
Enter value of n: 0
Enter value of r: 0
In Choose method:
1. Recursive
2. Non-Recursive
Enter Choice:
Result for C(0, 0) is: 1
------ Tabulated Results ------
n r C(n,r)
0 0 1
=== Code Execution Successful ===