ITC CODING ASSIGNMENT

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GOLOMB CODING IN CPP:

```
#include <iostream>
#include <cmath>
#include <bitset>
#include <sstream>
using namespace std;
string toBinary(int num, int length) {
    string bin = bitset<32>(num).to_string();
    return bin.substr(32 - length);
}
string golombEncode(int N, int M) {
    int q = N / M;
    int r = N % M;
    // Generate unary code
    string quo(q, '1');
    quo += "0";
    int b = floor(log2(M));
    int k = (1 << (b + 1)) - M; // k = 2^(b+1) - M
    string rem;
    if (r < k) {
        rem = toBinary(r, b);
    } else {
        rem = toBinary(r + k, b + 1);
```

```
    }
    return quo + rem;
}
int main() {
    int N,M;
        cout<<"Enter the value of N:"<<endl;
        cin>>N;
        cout<<"Enter the value of M:"<<endl;
        cin>>M;
        cout<<"Executing Golomb Encoding....."<<endl;
    string golomb_code = golombEncode(N, M);
    stringstream ss;
    ss << "The Golomb code encoding for N = " << N << " and M = " <<
M << " is " << golomb_code;
    cout << ss.str() << endl;
    return 0;
}
```

OUTPUT: