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WEEK 8 ASSIGNMENT

1. Source code:

```
#include <iostream>
using namespace std;

int reversedNumber = 0;
int remainder;

int reverse(int n) {
    if (n != 0) {
        remainder = n % 10;
        reversedNumber = remainder + 10 * reversedNumber;
        return reverse(n/10);
    } else {
        return reversedNumber;
    }
}

int main() {
    int n;
    cin >> n;
    int a = reverse(n);
    cout << a << endl;
    return 0;
}
```

Screenshot

492162
261294

Process finished with exit code 0

123456789
987654321

Process finished with exit code 0

2. Source code:

```
#include <iostream>
using namespace std;

int binomial (int n, int k){
    if (k == 0 || k == n){
        return 1;
    } else if (k > 0 && n > 0){
        return (binomial(n-1, k-1) + binomial(n-1, k));
    }
}
```

```
int main() {
    int a, b;
    cin >> a >> b;
    int x = binomial(a, b);
    cout << x << endl;
    return 0;
}
```

Screenshot:

12 12	1 2	2 3	10 3
1	3	8	120

3. Source code:

```
#include <iostream>
using namespace std;

int ackerman (int m, int n){
    if (m == 0){
        return n + 1;
    } else if ((m != 0) && (n == 0)) {
        return ackerman(m-1, 1);
    } else if ((m != 0) && (n != 0)) {
        return ackerman(m-1, ackerman(m, n-1));
    }
}

int main() {
    int a, b;
    cin >> a >> b;
    int x = ackerman(a, b);
    cout << x << endl;
    return 0;
}
```

Screenshot:

0 12	3 0	2 3
13	5	9

4. Source code:

```
#include <bits/stdc++.h>
#include <iostream>
using namespace std;
void checkPalindrome(char str[], int first, int last){
    if (first < last + 1){
        return checkPalindrome(str, first++, last--);
    }

    if (first == last){
        cout << "Input string is palindrome.";
    }
    if (str[first] != str[last]){
        cout << "Input string is not a palindrome.";
    } else {

```

```
        cout << "Input string is palindrome.";
    }
}

int main(){
    char str[100];

    cin >> str;

    int length = strlen(str);
    if (length == 0){
        cout << "Input string is palindrome.";
    } else {
        checkPalindrome(str, 0, length - 1);
    }

    return 0;
}
```

Screenshot

raficahya

Input string is not a palindrome.
Process finished with exit code 0

madam

Input string is palindrome.
Process finished with exit code 0