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DAY-3 (WWC)

Questions-
1. Add two numbers
2. Reverse the Linkedlist and return the reversed list
3. Write a function to check number is prime or not
4. Write a function to reverse the string
5. Implement the function that swipe to variable using pass by reference
6. Writer recursive function to compute the GCD of 2 numbers
7. Write function to check the given number is perfect or not
8. Fabonacci series
9. Difference between member function and non member function in C++

```cpp
#include <iostream>
#include <string>
#include <cmath>
using namespace std;


int add(int a, int b) {
    return a + b;
}

struct Node {
    int data;
    Node* next;
};
Node* reverseList(Node* head) {
    Node* prev = nullptr;
    Node* curr = head;
    while (curr) {
        Node* next = curr->next;
        curr->next = prev;
        prev = curr;
        curr = next;
```

```cpp
    }
    return prev;
}

bool isPrime(int n) {
    if (n < 2) return false;
    for (int i = 2; i <= sqrt(n); ++i) {
        if (n % i == 0) return false;
    }
    return true;
}

string reverseString(string s) {
    reverse(s.begin(), s.end());
    return s;
}

void swap(int& a, int& b) {
    int temp = a;
    a = b;
    b = temp;
}

int gcd(int a, int b) {
    if (b == 0) return a;
    return gcd(b, a % b);
}
bool isPerfect(int n) {
    int sum = 0;
    for (int i = 1; i <= n / 2; ++i) {
        if (n % i == 0) sum += i;
    }
    return sum == n;
}

void fibonacci(int n) {
    int a = 0, b = 1;
```

```cpp
    for (int i = 0; i < n; ++i) {
        cout << a << " ";
        int next = a + b;
        a = b;
        b = next;
    }
    cout << endl;
}

struct Example {
    int value;
    void memberFunction() {
        cout << value << endl;
    }
};
void nonMemberFunction(Example e) {
    cout << e.value << endl;
}

int main() {
cout << add(5, 10) << endl;
Node* head = new Node{1, new Node{2, new Node{3, nullptr}}};
head = reverseList(head);
while (head)
{
cout << head->data << " "; head = head->next;
} cout << endl;
cout << (isPrime(17) ? "Prime" : "Not Prime") << endl;
cout << reverseString("hello") << endl;
int x = 5, y = 10;
swap(x, y);
cout << x << " " << y << endl;
cout << gcd(18, 24) << endl;
cout << (isPerfect(28) ? "Perfect" : "Not Perfect") << endl;
fibonacci(10);
Example e{42};
e.memberFunction();
nonMemberFunction(e);
    return 0;
```

}