1. Write a program to find sum of prime factors
2. #include<stdio.h>
3. #include<stdlib.h>
4. int isPrime(int n)
5. {
6. int i;
7. for(i = 2; i < n/2; i++)
8. if(n % i == 0)return 0;
9. return 1;
10. }
11. int main()
12. {
13. int n;
14. printf("Enter a number: ");
15. scanf("%d", &n);
16. int i, sum = 0;
17. while(n > 1)
18. {
19. //printf("%d\n",n);
20. for(i = 2; i <= n; i++)
21. {
22. if(isPrime(i) == 1 && n % i == 0)
23. {
24. n /= i;
25. sum += i;
26. break;
27. }
28. }
29. }
30. printf("Sum = %d", sum);
31. }

3. Write a program to identify whether the given number N is a palindrome based upon following

operation.

Add the given number and its reverse

Check whether the obtained Sum after the first operation is palindrome or not, if not then repeat the

above operation.

The above operation will be continue until a palindrome number is found.

Print the palindrome number as output.

**INPUT:**

100

**OUTPUT:**

101

**INPUT:**

195

**OUTPUT:**

9339

#include<stdio.h>

int isPalindrome(int n)

{

    int n1 = n;

    int rev = 0;

    while(n1 > 0)

    {

        rev = rev \* 10 + (n1%10);

        n1 /= 10;

    }

    return n == rev;

}

int findPalindrome(int n)

{

    if(isPalindrome(n) == 1)return n;

    int n1 = n;

    int rev = 0;

    while(n1 > 0)

    {

        rev = rev \* 10 + (n1%10);

        n1 /= 10;

    }

    return findPalindrome(n+rev);

}

int main()

{

    int n;

    printf("Enter the number: ");

    scanf("%d", &n);

    int ans = findPalindrome(n);

    printf("\n%d", ans);

}

4. Find the position of the particular character in the string

#include<stdio.h>

#include<string.h>

int main()

{

    char str[100];

    printf("Enter the string: ");

    fgets(str,100,stdin);

    printf("Enter the character: ");

    char c;

    scanf("%c", &c);

    int i;

    for(i = 0; i < strlen(str); i++)

    {

        if(str[i] == c)

        {

            printf("Found at %d", i);

            return 0;

        }

    }

    printf("Not found");

    return 0;

}

5. The result of rearranging the characters of a string to produce a new string using all of the original

characters exactly once is called Anagram of the original String. A string is called palindrome if it reads

the same backward or forward.

You are give a String str as INPUT. Determine whether any anagram of str is Palindrome or not. If any

anagram is a palindrome then print 1 or 0.

NOTE: The string str will contain only lower case alphabets.

**INPUT:**

cdcdcdcdeeeef

**OUTPUT:**

1

**INPUT:**

abcdabcdef

**OUTPUT:**

0

#include<stdio.h>

#include<stdlib.h>

#include<string.h>

int main()

{

    char str[100];

    printf("Enter the string: ");

    scanf("%s", str);

    int count[26];

    int i;

    for(i = 0; i < 26; i++)count[0]=0;

    for(i = 0; i < strlen(str); i++)

    {

        count[str[i]-'a']++;

    }

    int ocount = 0;

    for(i = 0; i < strlen(str); i++)

    {

        if(count[i] % 2 == 1)

            ocount++;

    }

    if(ocount > 1)

        printf("0");

    else

        printf("1");

    return 0;

}

6. Write a program to find the length of the length of the longest increasing subsequence

The size of the array and the elements of the array are given as input.

**INPUT:**

55

3 1 3 3

**OUTPUT:**

3

#include<stdio.h>

#include<stdlib.h>

int max(int a, int b)

{

    return a >= b ? a:b;

}

int main()

{

    int n;

    printf("Enter the size of the array: ");

    scanf("%d", &n);

    int \*arr = (int\*)calloc(n,sizeof(int));

    int i;

    for(i = 0; i < n; i++)

        scanf("%d", &arr[i]);

    int count = 0;

    int res = 0;

    for(i = 0; i < n-1; i++)

    {

        if(arr[i] <= arr[i+1])

            count++;

        else

        {

            res = max(res,count);

            count = 0;

        }

    }

    printf("Longest length: %d", res+1);

    return 0;

}

7. Swap two integers without using temporary variable.

#include<stdio.h>

int main()

{

    int a,b;

    printf("Enter 2 ints: ");

    scanf("%d%d",&a,&b);

    a = a + b;

    b = a- b;

    a = a - b;

    printf("Two numbers %d, %d",a, b);

    return 0;

}

8. Write a function to find substring in a string.

#include<stdio.h>

#include<stdlib.h>

#include<string.h>

int main()

{

    char text[100];

    char pattern[100];

    printf("Text: ");

    scanf("%s", text);

    printf("Pattern: ");

    scanf("%s", pattern);

    int i, j;

    for(i = 0; i < strlen(text); i++)

    {

        for(j = 0; j < strlen(pattern); j++)

        {

            if(text[i+j] != pattern[j])break;

        }

        if(j == strlen(pattern))

        {

            printf("Found");

            return 0;

        }

    }

    printf("Not found");

    return 0;

}

9. Write a program to count the occurrence of each character in a given string.

#include<stdio.h>

#include<string.h>

int main()

{

    char str[100];

    printf("Enter the string: ");

    fgets(str,100,stdin);

    int count[26];

    int i;

    for(i = 0; i < strlen(str); i++)

    {

        count[str[i]-'a']++;

    }

    return 0;

}

10. Write a program to remove element by value from an array or list.

#include<stdio.h>

#include<stdlib.h>

int main()

{

    int n;

    printf("Enter the number of elements: ");

    scanf("%d", &n);

    int \*arr = (int\*)calloc(n, sizeof(int));

    printf("Enter elements: ");

    int i;

    for(i = 0; i < n; i++)

        scanf("%d", &arr[i]);

    int val;

    printf("Enter the value to remove: ");

    scanf("%d", &val);

    for(i = 0; i < n; i++)

    {

        if(arr[i] == val)

        {

            int j= i;

            for(j = i; j < n-1; j++)

            arr[j] = arr[j+1];

        }

    }

}

11. Write a function to print Fibonacci series and Tribonacci series?

#include<stdio.h>

#include<stdlib.h>

int fibo(int n)

{

    if(n == 0 || n == 1)return n;

    return fibo(n-1) + fibo(n-2);

}

int tribo(int n)

{

    if(n == 0 || n == 1 || n == 2)return n;

    return tribo(n-1) + tribo(n-2) + tribo(n-3);

}

int main()

{

    int n;

    printf("Enter number of terms: ");

    scanf("%d", &n);

    int i;

    printf("\nFibonacci Sequence\n");

    for(i = 0; i < n; i++)

        printf("%d ", fibo(i));

    printf("\nTribonacci Series\n");

    for(i = 0; i < n; i++)

        printf("%d ", tribo(i));

    return 0;

}

12. Linked list problem of finding the cycle in the linked list(using floyd Algorithm)

#include<stdio.h>

#include<stdlib.h>

struct node{

    int val;

    struct node\* next;

};

void findCycle(struct node\* head)

{

    struct node\* slow = head;

    struct node\* fast = head;

    while(slow != NULL && fast != NULL && fast->next != NULL)

    {

        slow = slow->next;

        fast = fast->next->next;

        if(slow == fast)return 1;

    }

    return 0;

}