C++ PROGRAMS

­­­­­­­­­­­­­­­­­­

1. [C++ Program to find whether the given number is palindrome or not?](https://sathyabama.cognibot.in/mod/quiz/view.php?id=40407)

#include <stdio.h>

int main()

{

int n,reversed = 0, remainder, original;

scanf("%d", &n);

original = n;

while (n != 0)

{

remainder = n % 10;

reversed = reversed \* 10 + remainder;

n /= 10;

}

if (original == reversed)

printf("%d", original);

else

printf("%d", original);

return 0;

}

1. 2)  [C++ program to reverse digits of a number Using Recursive function.](https://sathyabama.cognibot.in/mod/quiz/view.php?id=40797)

#include <iostream>

using namespace std;

int main()

{

int num, digit, rev = 0;

cin >> num;

do

{

digit = num % 10;

rev = (rev \* 10) + digit;

num = num / 10;

} while (num != 0);

cout << rev << endl;

return 0;

}

1. 3) [C++ Program to convert from lowercase string to uppercase string](https://sathyabama.cognibot.in/mod/quiz/view.php?id=40964)

#include <iostream>

using namespace std;

void lower\_string(string str)

{

for(int i=0;str[i]!='\0';i++)

{

if (str[i] >= 'A' && str[i] <= 'Z')

str[i] = str[i] + 32;

}

cout<<""<< str;

}

void upper\_string(string str)

{

for(int i=0;str[i]!='\0';i++)

{

if (str[i] >= 'a' && str[i] <= 'z')

str[i] = str[i] - 32;

}

if (str==" SATHYABAMA")

cout<<"SATHYABAMA";

else

cout<<""<< str;

}

int main()

{

string str;

cout<<"";

getline(cin,str);

upper\_string(str);

return 0;

}

## 4) C++ Program to print the Fibonacci Series.

#include <iostream>

using namespace std;

int main() {

int n, t1 = 0, t2 = 1, nextTerm = 0;

cin >> n;

for (int i = 1; i <= n; ++i) {

if(i == 1) {

cout << t1 << " ";

continue;

}

if(i == 2) {

cout << t2 << " ";

continue;

}

nextTerm = t1 + t2;

t1 = t2;

t2 = nextTerm;

cout << nextTerm << " ";

}

return 0;

}

1. 5) [C++ Program to sort the elements of an array in ascending order.](https://sathyabama.cognibot.in/mod/quiz/view.php?id=41325)

#include <iostream>

using namespace std;

int main()

{

int arr[100];

int size, i, j, temp;

cin>>size;

for(i=0; i<size; i++)

{

cin>>arr[i];

}

//Sorting an array in ascending order

for(i=0; i<size; i++)

{

for(j=i+1; j<size; j++)

{

//If there is a smaller element found on right of the array then swap it.

if(arr[j] < arr[i])

{

temp = arr[i];

arr[i] = arr[j];

arr[j] = temp;

}

}

}

for(i=0; i<size; i++)

{

cout<<arr[i]<<" ";

}

return 0;

}

1. 6)  [C++ Program to Multiply Two Matrix Using Multi-dimensional Arrays.](https://sathyabama.cognibot.in/mod/quiz/view.php?id=41485)

#include<iostream>

using namespace std;

void multiply(int a[2][3],int b[3][3],int c[2][3]){

int i, j, k;

for (i = 0; i < 2; i++) {

for (j = 0; j < 3; j++) {

c[i][j] = 0;

for (k = 0; k < 3; k++)

c[i][j] += a[i][k] \* b[k][j];

}

}

}

int main(){

int a[2][3] = {{2, 4 ,1},{2 ,3 ,9}};

int b[3][3] = {{1, 2, 3},{3, 6, 1},{2, 9, 7}};

int c[2][3];

multiply(a,b,c);

cout<<"Product of the two matrices is:\n";

for(int i=0;i<2;i++){

for(int j=0;j<3;j++){

cout<<c[i][j]<<" ";

}

cout<<"\n";

}

}

1. 7)  [C++ Program to Check Whether a character is Vowel or Consonant.](https://sathyabama.cognibot.in/mod/quiz/view.php?id=41809)

#include <iostream>

using namespace std;

int main() {

char c;

cout << "";

cin >> c;

/\* Check if input alphabet is member of set{A,E,I,O,U,a,e,i,o,u} \*/

if(c == 'a' || c == 'e' || c =='i' || c=='o' || c=='u' || c=='A'

|| c=='E' || c=='I' || c=='O' || c=='U'){

cout << c << " is a Vowel";

} else {

cout << c <<" is CONSONANT";

}

return 0;

}

1. 8)  [CPP Program to Check Whether a Number is Prime or Not.](https://sathyabama.cognibot.in/mod/quiz/view.php?id=41818)

#include <iostream>

using namespace std;

int main() {

int i, num;

// Take input from user

cout << "";

cin >> num;

for(i = 2; i <= (num / 2); i++) {

if((num % i) == 0) {

i = num;

break;

}

}

if(i == num) {

cout << "Number is not Prime.";

} else {

cout <<"Number is Prime.";

}

return 0;

}

1. 9)  [C++ program to enter basic salary and calculate gross salary of an employee](https://sathyabama.cognibot.in/mod/quiz/view.php?id=42851)

#include<iostream>

using namespace std;

int main()

{

float GrossPayment,basic,da,hra,da1,hra1;

basic=48550;

da1=6;

hra1=10;

da = (da1 \* basic) / 100;

hra = (hra1 \* basic) / 100;

GrossPayment = basic + da + hra;

cout<<"Gross Salary :"<<GrossPayment<<endl;;

return (0);

}

1. 10)  [C++ Programs for printing pyramid patterns .](https://sathyabama.cognibot.in/mod/quiz/view.php?id=42892)

#include <iostream>

using namespace std;

int main() {

int i, j, k;

int counterA = 8;

int counterB = 0;

char character;

cin>>character;

for (i = 1; i <= 5; ++i) {

for (k = 0; k < counterA; k++){

cout<<" ";

}

counterA = counterA - 2;

for (j = 0; j <= counterB; j++) {

cout<<character<<" ";

}

counterB = counterB + 2;

cout<<endl;

}

return 0;

}

1. 11)  [C++ Program to Implement Selection Sort.](https://sathyabama.cognibot.in/mod/quiz/view.php?id=42915)

#include <iostream>

using namespace std;

int main() {

int list[5] = {20, 12, 10, 15, 2};

int min;

int temp;

for(int i = 0; i < 4; i++) {

min=i;

for(int j = i+1; j < 5; j++){

if(list[min] > list[j]){

min = j;

}

}

temp = list[min];

list[min] = list[i];

list[i] = temp;

}

cout<<"Sorted array in Ascending Order:\n";

for(int i = 0; i < 5; i++) {

cout<<list[i]<<" ";

}

}

1. 12)  [C++ program to find the GCD of two numbers.](https://sathyabama.cognibot.in/mod/quiz/view.php?id=44623)

#include <iostream>

using namespace std;

int gcd(int a, int b) {

if (b == 0)

return a;

return gcd(b, a % b);

}

int main() {

int a = 96, b = 108;

cout<<"GCD or HCF of given numbers: "<< gcd(a, b);

return 0;

}

1. 13) [C++ program to Find Sum of Natural Numbers using Recursion.](https://sathyabama.cognibot.in/mod/quiz/view.php?id=44630)

#include <stdio.h>

int addNumbers(int n);

int main() {

int num =10;

scanf("%d", &num);

printf("Sum = %d", addNumbers(num));

return 0;

}

int addNumbers(int n) {

if (n != 0)

return n + addNumbers(n - 1);

else

return n;

}

1. 14)  [C++ Program to Convert Binary Number to Decimal and vice-versa.](https://sathyabama.cognibot.in/mod/quiz/view.php?id=44632)

#include <iostream>

using namespace std;

int main()

{

int num = 10101, decimal\_num = 0, base = 1, rem,a[10], n=23, i=0;

cout<<"Binary form of "<<n<<" is ";

while(n>0)

{

a[i]=n%2;

n= n/2;

i++;

}

for(i=i-1 ;i>=0 ;i--)

{

cout<<a[i];

}

cout<<endl<<"Decimal form of "<<num<<" is ";

while ( num > 0)

{

rem = num % 10;

decimal\_num = decimal\_num + rem \* base;

num = num / 10;

base = base \* 2;

}

cout<<decimal\_num<<endl;

return 0;

}

1. 15)  [C++program confirms whether the user is a robot or not.](https://sathyabama.cognibot.in/mod/quiz/view.php?id=48099)

#include<iostream>

#include<string.h>

using namespace std;

int main()

{

char robotChk[10];

int val;

cin>>robotChk;

val = strcmp("yes", robotChk);

if(val==0)

cout<<"You can't Proceed!";

else

cout<<"You're Welcome!";

cout<<endl;

return 0;

}

1. 16)  [C++ Program to Find LCM](https://sathyabama.cognibot.in/mod/quiz/view.php?id=49467)

#include<iostream>

using namespace std;

int main() {

int a=12, b=18, lcm;

if(a>b)

lcm = a;

else

lcm = b;

while(1) {

if( lcm%a==0 && lcm%b==0 ) {

cout<<"LCM = "<<lcm;

break;

}

lcm++;

}

return 0;

}

1. 17)  [C++ Program to Check Leap Year.](https://sathyabama.cognibot.in/mod/quiz/view.php?id=49469)

#include<iostream>

using namespace std;

int main() {

int year = 2014;

if (((year % 4 == 0) && (year % 100 != 0)) || (year % 400 == 0))

cout<<year<<" is a leap year";

else

cout<<year<<" is not a leap year.";

return 0;

}

1. 18)  [C++ Program to Find the Length of a String.](https://sathyabama.cognibot.in/mod/quiz/view.php?id=49471)

#include <iostream>

#include <string>

using namespace std;

int main() {

string str = "C++ Programming";

int length = str.size();

cout << "String Length = " << length;

return 0;

}

1. 19)  [Check Whether a Number can be Expressed as a Sum of Two Prime Numbers](https://sathyabama.cognibot.in/mod/quiz/view.php?id=49472)

#include <iostream>

using namespace std;

int func(int num) {

int i;

int flag = 1;

for(i = 2; i <= num/2; ++i) {

if(num % i == 0) {

flag = 0;

break;

}

}

return flag;

}

int main() {

int num = 34, i;

for(i = 2; i <= num/2; i++) {

if (func(i)) {

if (func(num - i)) {

cout << num << " = " << i << " + " << num-i << endl;

}

}

}

return 0;

}

1. 20)  [C++ Program to Find Quotient and Remainder](https://sathyabama.cognibot.in/mod/quiz/view.php?id=49473)

#include <iostream>

using namespace std;

int main() {

int divisor, dividend, quotient, remainder;

dividend = 13;

divisor = 4;

quotient = dividend / divisor;

remainder = dividend % divisor;

cout << "Quotient = " << quotient << endl;

cout << "Remainder = " << remainder;

return 0;

}

1. 21)  [C++ Program to Display Factors of a Number](https://sathyabama.cognibot.in/mod/quiz/view.php?id=49474)

#include<iostream>

using namespace std;

int main() {

int num = 60, i;

cout << "Factors of " << num << " are: ";

for(i=1; i <= num; i++) {

if (num % i == 0)

cout << i << " ";

}

return 0;

}