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1. Write a program to check whether a number is prime or not.

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

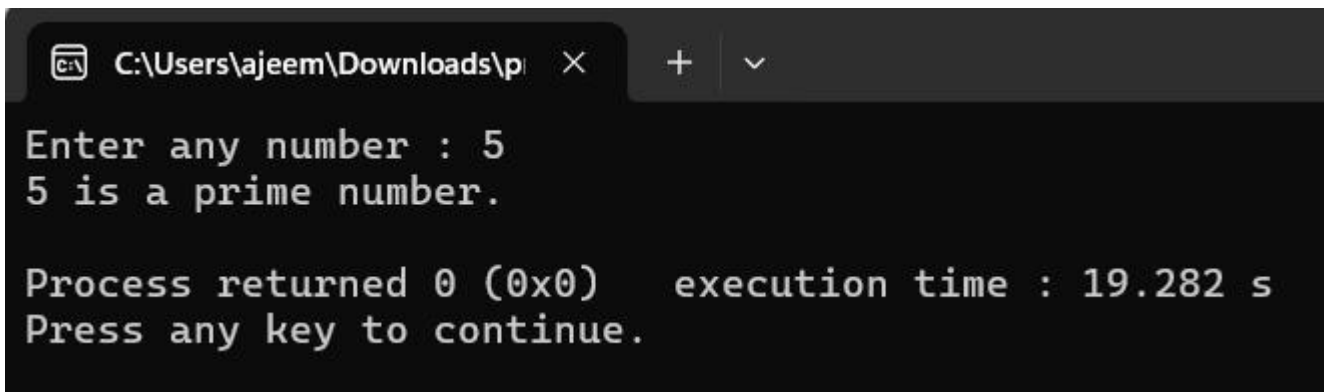
bool isprime(int number){
    if(number <= 1) return false;
    for(int i =2; i * i <= number; i++){
        if(number % i == 0) return false;
    }
    return true;
}

int main(){
    int num;

    cout<<"Enter any number : ";
    cin>>num;

    if(isprime(num)){
        cout<<num<<" is a prime number. "<<endl;
    }
    else{
        cout<<num<<" is not prime number. ";
    }

    return 0;
}
```



```
C:\Users\ajeem\Downloads\p  X  +  v

Enter any number : 5
5 is a prime number.

Process returned 0 (0x0)   execution time : 19.282 s
Press any key to continue.
```

2. Write a program to generate first N prime numbers. Accept N from user.

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

bool isprime(int number){
    // if(number <= 1) return false;
    for(int i = 2; i * i <= number; i++){
        if(number % i == 0) return false;
    }
    return true;
}

void generateprime(int n){
    int count = 0;
    int number = 2;

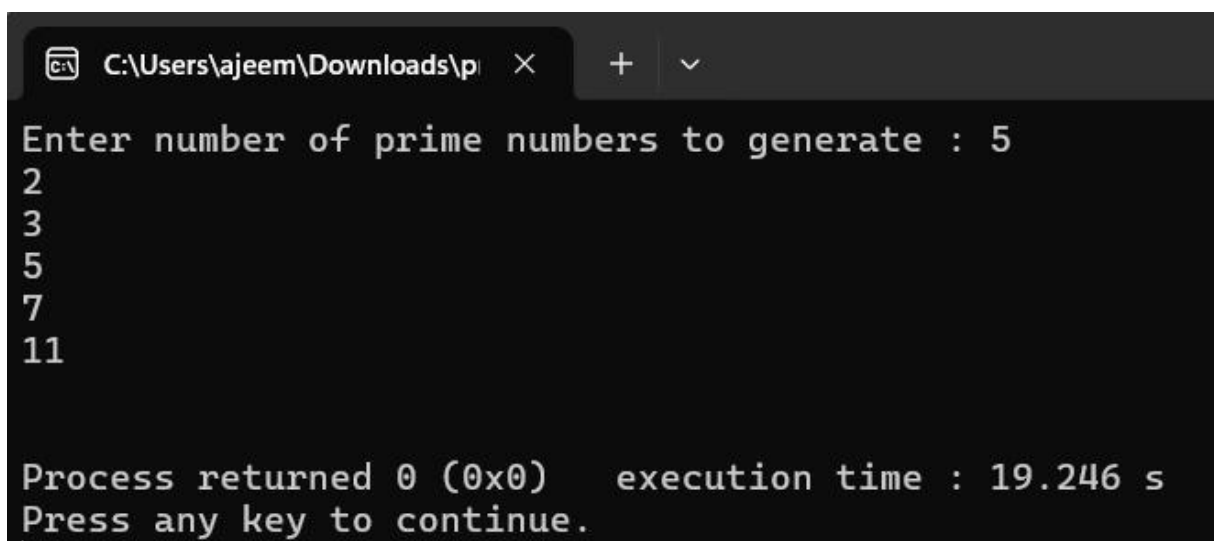
    while(count < n){
        if(isprime(number)){
            cout<<number<<endl;
            count++;
        }
        number++;
    }
    cout<<endl;
}

int main(){
    int n;

    cout<<"Enter number of prime numbers to generate : ";
    cin>>n;

    generateprime(n);

    return 0;
}
```



The screenshot shows a Windows command prompt window with a single tab titled "C:\Users\ajeem\Downloads\p". The prompt displays the output of the C++ program: "Enter number of prime numbers to generate : 5", followed by the first five prime numbers (2, 3, 5, 7, 11) on separate lines. At the bottom, it shows "Process returned 0 (0x0) execution time : 19.246 s" and "Press any key to continue.".

3. Write a program to generate following pyramid

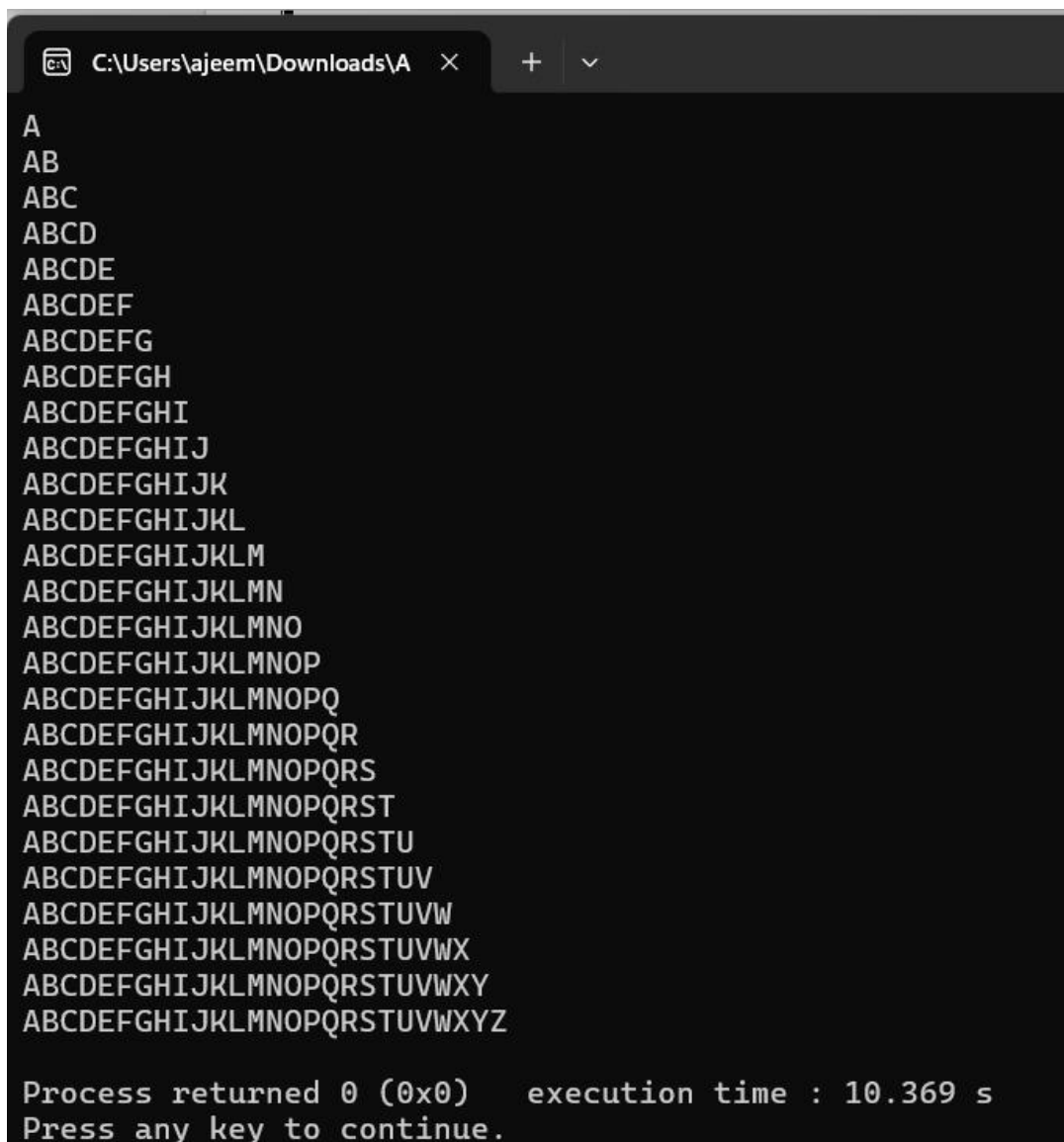
A  
AB  
ABC  
..... A.....Z

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

int main() {
    int S = 26;

    for (int i = 1; i <= S; i++) {
        for (char ch = 'A'; ch < 'A' + i; ch++) {
            cout << ch;
        }
        cout << endl;
    }

    return 0;
}
```



```
C:\Users\ajeem\Downloads\A
A
AB
ABC
ABCD
ABCDE
ABCDEF
ABCDEFG
ABCDEFGH
ABCDEFGH
ABCDEFGHI
ABCDEFGHIJ
ABCDEFGHIJK
ABCDEFGHIJKL
ABCDEFGHIJKLM
ABCDEFGHIJKLMN
ABCDEFGHIJKLMNO
ABCDEFGHIJKLMNOP
ABCDEFGHIJKLMNOPQ
ABCDEFGHIJKLMNOPQR
ABCDEFGHIJKLMNOPQRS
ABCDEFGHIJKLMNOPQRST
ABCDEFGHIJKLMNOPQRSTU
ABCDEFGHIJKLMNOPQRSTUV
ABCDEFGHIJKLMNOPQRSTUVW
ABCDEFGHIJKLMNOPQRSTUVWX
ABCDEFGHIJKLMNOPQRSTUVWXY
ABCDEFGHIJKLMNOPQRSTUVWXYZ

Process returned 0 (0x0)   execution time : 10.369 s
Press any key to continue.
```

4. Write a menu driven program to perform mathematical operations on two numbers.

1. Add
2. Sub
3. Mul
4. Div
5. Exit

accept the menu option and numbers form user.

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

void add(double a, double b){
    cout << "Result: " << (a + b) << endl;
}
void subtract(double a, double b){
    cout << "Result: " << (a - b) << endl;
}
void multiply(double a, double b){
    cout << "Result: " << (a * b) << endl;
}
void divide(double a, double b){
    cout << "Result: " << (a / b) << endl;
}

int main() {
    double num1, num2;
    int choice;

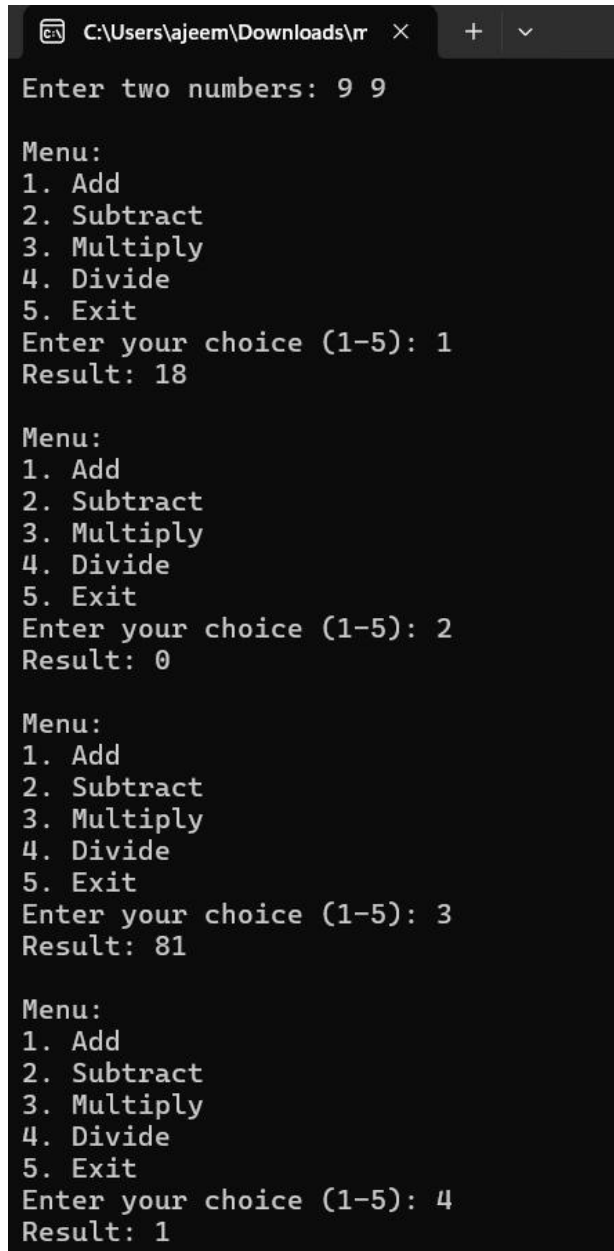
    cout << "Enter two numbers: ";
    cin >> num1 >> num2;

    do {
        cout << "\nMenu:\n";
        cout << "1. Add\n";
        cout << "2. Subtract\n";
        cout << "3. Multiply\n";
        cout << "4. Divide\n";
        cout << "5. Exit\n";
        cout << "Enter your choice (1-5): ";
        cin >> choice;

        switch (choice) {
            case 1:
                add(num1, num2);
                break;
            case 2:
                subtract(num1, num2);
                break;
            case 3:
                multiply(num1, num2);
                break;
            case 4:
                divide(num1, num2);
                break;
```

```
case 5:
    cout << "Exiting the program." << endl;
    break;
default:
    cout << "Invalid choice! Please choose again." << endl;
}
} while (choice != 5);

return 0;
}
```



```
C:\Users\ajeem\Downloads\rr X + v
Enter two numbers: 9 9

Menu:
1. Add
2. Subtract
3. Multiply
4. Divide
5. Exit
Enter your choice (1-5): 1
Result: 18

Menu:
1. Add
2. Subtract
3. Multiply
4. Divide
5. Exit
Enter your choice (1-5): 2
Result: 0

Menu:
1. Add
2. Subtract
3. Multiply
4. Divide
5. Exit
Enter your choice (1-5): 3
Result: 81

Menu:
1. Add
2. Subtract
3. Multiply
4. Divide
5. Exit
Enter your choice (1-5): 4
Result: 1
```

5. Generate following pyramid , accept the level from the user as input

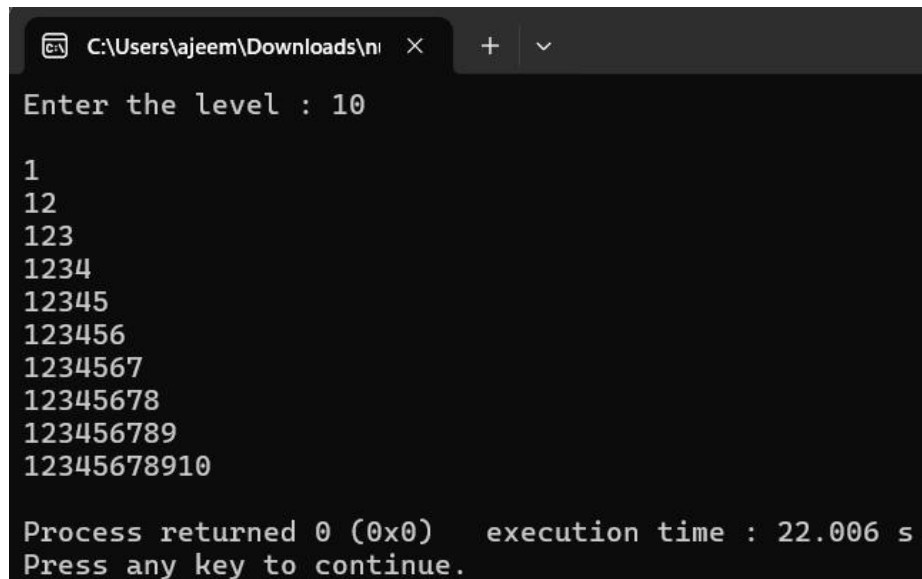
```
1
1 2
1 2 3
..... 1.....N
where N is the level accepted as input
```

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

int main() {
    int level;
    cout<<"Enter the level : ";
    cin>>level;

    for (int i = 0; i <= level; i++) {
        for (int j = 1; j <= i; j++) {
            cout << j;
        }
        cout << endl;
    }

    return 0;
}
```



The screenshot shows a Windows command prompt window with the file path C:\Users\ajeem\Downloads\ni. The program prompts the user to "Enter the level : 10". The output displays a pyramid of numbers from 1 to 10, where each row i contains the numbers 1 through i. At the bottom, it shows "Process returned 0 (0x0) execution time : 22.006 s" and "Press any key to continue."

```
C:\Users\ajeem\Downloads\ni X + v
Enter the level : 10

1
12
123
1234
12345
123456
1234567
12345678
123456789
12345678910

Process returned 0 (0x0) execution time : 22.006 s
Press any key to continue.
```