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1. Write a program to check whether a number is prime or not.
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```
#include <iostream>
using namespace std;

int prime(int num) {
   if (num <= 1) {
      cout << "No is not prime" << endl;
      return 0;
   }
   for (int i = 2; i <=num/2; i++) {
      if (num % i == 0) {
         cout << "No is not prime" << endl;
         return 0;
      }
   }
   cout << "No is prime" << endl;
}

int main() {
   int num;
   cout << "Enter the no.\n";
   cin >> num;
   prime(num);

   return 0;
}
```

Output :

```
PS C:\Users\HP\OneDrive\Desktop\C-DAC\C++ Language> cd "c:\Users\HP\OneDrive\Desktop\C-
DAC\C++ Language\" ; if ($?) { g++ Ready.cpp -o Ready } ; if ($?) { .\Ready }
Enter the no.
5
No is prime
PS C:\Users\HP\OneDrive\Desktop\C-DAC\C++ Language> cd "c:\Users\HP\OneDrive\Desktop\C-
DAC\C++ Language\" ; if ($?) { g++ Ready.cpp -o Ready } ; if ($?) { .\Ready }
Enter the no.
6
No is not prime
PS C:\Users\HP\OneDrive\Desktop\C-DAC\C++ Language> cd "c:\Users\HP\OneDrive\Desktop\C-
DAC\C++ Language\" ; if ($?) { g++ Ready.cpp -o Ready } ; if ($?) { .\Ready }
Enter the no.
8
No is not prime
```

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

```
#include <iostream>
using namespace std;
int isprime(int num){
  if (num <= 1)
    return 0;
  for (int i = 2; i <= num/2; i++){
    if (num % i == 0)
      { return 0; }
  }
  return 1; //if both failed then num is prime
}
int noofprime(int n){
  int count=0;
  int num = 2;

  while(count < n){
    if (isprime(num)){
      cout<<num<<endl;
       count ++;
      }
     num++;
  }
}
int main(){
  int n;
  cout <<endl<<"Enter the Number : ";
  cin>>n;
  noofprime(n);
  return 0;
}
```

OUTPUT :

```
PS C:\Users\HP\OneDrive\Desktop\C-DAC\C++ Language> cd "c:\Users\HP\OneDrive\Desktop\C-DAC\C++ Language\" ; if ($?) { g++ Ready.cpp -o Ready } ; if ($?) { .\Ready }

Enter the Number : 10
2
3
5
7
11
13
17
19
23
29
PS C:\Users\HP\OneDrive\Desktop\C-DAC\C++ Language>
```

3. Write a program to generate following pyramid

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

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

int main(){

  int i, j, n = 26;
        for (i = 1; i <= n; i++) {
                for (j = 1; j <= i; j++) {
                        cout << (char)('A' + j - 1) << " ";
                }
                cout << endl;
        }
        return 0;

}
```

OUTPUT :

```
PS C:\Users\HP\OneDrive\Desktop\C-DAC\C++ Language> cd "c:\Users\HP\OneDrive\Desktop\C-DAC\C++ Language\" ; if ($?) { g++ Ready.cpp -o Ready } ; if ($?) { .\Ready }
A
A B
A B C
A B C D
A B C D E
A B C D E F
A B C D E F G
A B C D E F G H
A B C D E F G H I
A B C D E F G H I J
A B C D E F G H I J K
A B C D E F G H I J K L
A B C D E F G H I J K L M
A B C D E F G H I J K L M N
A B C D E F G H I J K L M N O
A B C D E F G H I J K L M N O P
A B C D E F G H I J K L M N O P Q
A B C D E F G H I J K L M N O P Q R
A B C D E F G H I J K L M N O P Q R S
A B C D E F G H I J K L M N O P Q R S T
A B C D E F G H I J K L M N O P Q R S T U
A B C D E F G H I J K L M N O P Q R S T U V
```

```
A B C D E F G H I J K L M N O P Q R S T U V W
A B C D E F G H I J K L M N O P Q R S T U V W X
A B C D E F G H I J K L M N O P Q R S T U V W X Y
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
PS C:\Users\HP\OneDrive\Desktop\C-DAC\C++ Language>
```

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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;

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

   do {
      // Display the menu
      cout << "Menu:\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: ";
      cin >> choice;

      // Perform the chosen operation
      switch (choice) {
         case 1:
            cout << "Enter two numbers: ";
            cin >> num1 >> num2;
            cout << "Result: " << num1 + num2 << endl;
            break;
         case 2:
            cout << "Enter two numbers: ";
            cin >> num1 >> num2;
            cout << "Result: " << num1 - num2 << endl;
            break;
         case 3:
            cout << "Enter two numbers: ";
            cin >> num1 >> num2;
```

```
            cout << "Result: " << num1 * num2 << endl;
            break;
        case 4:
            cout << "Enter two numbers: ";
            cin >> num1 >> num2;
            if (num2 != 0) {
                cout << "Result: " << num1 / num2 << endl;
            } else {
                cout << "Error: Division by zero is not allowed." << endl;
            }
            break;
        case 5:
            cout << "Exiting the program." << endl;
            break;
        default:
            cout << "Invalid choice. Please try again." << endl;
    }

    cout << endl;
  } while (choice != 5);

  return 0;
}
```

OUTPUT:

```
PS C:\Users\HP\OneDrive\Desktop\C-DAC\C++ Language> cd "c:\Users\HP\OneDrive\Desktop\C-DAC\C++ Language\" ; if ($?) { g++ Ready.cpp -o Ready } ; if ($?) { .\Ready }
Menu:
1. Add
2. Subtract
3. Multiply
4. Divide
5. Exit
Enter your choice: 1
Enter two numbers: 5
4
Result: 9

Menu:
1. Add
2. Subtract
3. Multiply
4. Divide
5. Exit
Enter your choice: 0
Invalid choice. Please try again.

Menu:
1. Add
2. Subtract
```

3. Multiply
4. Divide
5. Exit
Enter your choice: 5
Exiting the program.

---

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 i,j,n;
cout<<"Enter the No.";
cin>>n;
for(i=1; i <= n; i++){
   for(j=1;j<=i;j++){
     cout<<j<<" ";
   }

   cout<<endl;
}

}
```

OUTPUT:

```
PS C:\Users\HP\OneDrive\Desktop\C-DAC\C++ Language> cd "c:\Users\HP\OneDrive\Desktop\C-DAC\C++ Language\" ; if ($?) { g++ Ready.cpp -o Ready } ; if ($?) { .\Ready }
Enter the No.5
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
PS C:\Users\HP\OneDrive\Desktop\C-DAC\C++ Language>
```