Instruction to run c++ in vscode via MinGW

https://code.visualstudio.com/docs/cpp/config-mingw

Programming Task

Task 1: Print Hello World

```cpp
#include <iostream>
using namespace std;
int main(){
    cout<<"Hello World";
    return 0;
}
```

Task 2: Print the number enter by user

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

int main() {
    int number;

    cout << "Enter an integer: ";
    cin >> number;

    cout << "You entered " << number;
    return 0;
}
```

Task 3: Take 2 integers input from the user and compute its sum using function

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

// Function to compute the sum of two integers
int add(int a, int b) {
    return a + b;
}

int main() {
    int num1, num2;

    // Input first integer
    cout << "Enter the first integer: ";
    cin >> num1;

    // Input second integer
    cout << "Enter the second integer: ";
    cin >> num2;
```

```
    // Compute and display the sum using the add function
    int result = add(num1, num2);
    cout << "Sum of " << num1 << " and " << num2 << " is: " << result << endl;

    return 0;
}
```

Task 4: Take 2 integers input from the user and compute the quotient and the remainder of their division.

Task 5: Check Whether Number is Even or Odd using if else

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

int main() {
  int n;

  cout << "Enter an integer: ";
  cin >> n;

  if ( n % 2 == 0)
    cout << n << " is even.";
  else
    cout << n << " is odd.";

  return 0;
}
```

Task 6: Check whether the given output is vowel or constant

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

int main() {
    char c;
    bool isLowercaseVowel, isUppercaseVowel;

    cout << "Enter an alphabet: ";
    cin >> c;

    // evaluates to 1 (true) if c is a lowercase vowel
    isLowercaseVowel = (c == 'a' || c == 'e' || c == 'i' || c == 'o' || c ==
'u');

    // evaluates to 1 (true) if c is an uppercase vowel
    isUppercaseVowel = (c == 'A' || c == 'E' || c == 'I' || c == 'O' || c ==
'U');
```

```
    // show error message if c is not an alphabet
    if (!isalpha(c))
      printf("Error! Non-alphabetic character.");
    else if (isLowercaseVowel || isUppercaseVowel)
        cout << c << " is a vowel.";
    else
        cout << c << " is a consonant.";

    return 0;
```

Task 7: Sum of natural number using loop

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

int main() {
    int n, sum = 0;

    cout << "Enter a positive integer: ";
    cin >> n;

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

    cout << "Sum = " << sum;
    return 0;
}
```

Task 8: Enter the largest number of the array

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

int main() {

  int i, n;
  float arr[100];

  cout << "Enter total number of elements(1 to 100): ";
  cin >> n;
  cout << endl;

  // Store number entered by the user
```

```
  for(i = 0; i < n; ++i) {
    cout << "Enter Number " << i + 1 << " : ";
    cin >> arr[i];
  }

  // Loop to store largest number to arr[0]
  for(i = 1;i < n; ++i) {

    // Change < to > if you want to find the smallest element
    if(arr[0] < arr[i])
      arr[0] = arr[i];
  }

  cout << endl << "Largest element = " << arr[0];

  return 0;
}
```

Do it your self

Task 9: Compute Factorial of the given number

Task 10: Display Fibonacci Series up to n number of terms

Task 11: Compute GCD of two given number

Task 12: Find LCM of two given number

Task 13: Check whether a number is prime or not using function

Task 14: Check whether a number is palindrome or not

Task 15: Display odd number between two intervals

Task 16: Simple Calculator using switch statement

Sample code for switch case

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

int main() {
    int option;

    cout << "Choose an option (1 or 2): ";
    cin >> option;

    switch (option) {
        case 1:
            cout << "You chose Option 1." << endl;
            break;
```

```
        case 2:
            cout << "You chose Option 2." << endl;
            break;
        default:
            cout << "Invalid choice. Please choose 1 or 2." << endl;
            break;
    }

    return 0;
}
```

Task 17: Take multiple input and compute its sum

Task 18: Write a C++ program that takes a positive integer n as input from the user. The program should then generate and print the following pattern:

*
**
***
****
*****

The above pattern is when n is 5.