C++ TASKS DONE

1. **Print "Hello World"**

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

   return 0;
 }
```

2. **Print "1: One, 2:Two, 3: Three, 4: Four, 5:Five"**

```
#include <iostream>
using namespace std;
int main ()
{
   cout << "1: One, 2:Two, 3: Three, 4: Four, 5:Five";
   return 0;
}
```

3. **Print result of 10+5 . Store the values in variables first, you can't use them directly**

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

int main ()
{
   int a=10;
   int b=5;
   int sum= 10+5;
   cout << sum;
```

```
    return 0;
}
```

4. **Print Result of 10-5. Store the values in variables first, you can't use them directly**

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

int main ()
{
   int a=10;
   int b=5;
   int subtract= a-b;
   cout << subtract;

   return 0;
}
```

5. **Print Result of 10*5. Store the values in variables first, you can't use them directly**

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

int main ()
{
   int a=10;
   int b=5;
   int multiplication= a*b;
   cout << multiplication;

   return 0;
}
```

6. **Print Result of 10/5. Store the values in variables first, you can't use them directly**

```
#include <iostream>
```

```
using namespace std;

int main ()
{
  int a=10;
  int b=5;
  int division= a/b;
  cout << division;

  return 0;
}
```

7. **Print Remainder of 10%3 Store the values in variables first, you can't use them directly**

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

int main ()
{
  int a=10;
  int b=3;
  int mod= a%b;
  cout << mod;

  return 0;
}
```

8. **Add all the numbers from 0 to 10 and print their sum. Without using Loop. No need to use variables.**

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

int main ()
{
```

```
{
  cout << 0+1+2+3+4+5+6+7+8+9+10 ;

  return 0;
}
```

9. **Print table of 2 without using loop** **--Correct this please**

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

int main ()
{
  int numForTable =2;
  cout << numForTable *2 << endl << numForTable *3 << endl<< numForTable *4 << endl << numForTable *5 << endl << numForTable *6 << endl<<
numForTable *7 << endl<< numForTable *8 << endl<< numForTable *9 << endl<< numForTable *10 << endl;

  return 0;
}
```

V2

```
#include <iostream>
using namespace std;
int main ()
{
  int numForTable = 2;
  cout << numForTable << " X " << "1 = "<< numForTable *1 << endl;
  cout << numForTable << " X " << "2 = "<< numForTable *2 << endl;
  cout << numForTable << " X " << "3 = "<< numForTable *3 << endl;
  cout << numForTable << " X " << "4 = "<< numForTable *4 << endl;
  cout << numForTable << " X " << "5 = "<< numForTable *5 << endl;
  cout << numForTable << " X " << "6 = "<< numForTable *6 << endl;
  cout << numForTable << " X " << "7 = "<< numForTable *7 << endl;
```

```
    cout << numForTable << " X " << "8 = "<< numForTable *8 << endl;
    cout << numForTable << " X " << "9 = "<< numForTable *9 << endl;
    cout << numForTable << " X " << "10 = "<< numForTable *10 << endl;

    return 0;
}
```

10. **Get input from user, and print its table, without using loop**

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

int main ()
{
    int numForTable ;
    cin>> numForTable ;
    cout <<numForTable*1<< numForTable *2 << endl << numForTable *3 << endl<< numForTable *4 << endl << numForTable *5 << endl <<
numForTable *6 << endl<< numForTable *7 << endl<< numForTable *8 << endl<< numForTable *9 << endl<< numForTable *10 << endl;

    return 0;
}
```

V2

```
#include <iostream>
using namespace std;
int main ()
{
    int numForTable ;
    cin>>numForTable ;
```

```
    cout << numForTable << " X " << "1 = "<< numForTable *1 <<  endl;
    cout << numForTable << " X " << "2 = "<< numForTable *2 <<  endl;
    cout << numForTable << " X " << "3 = "<< numForTable *3 <<  endl;
    cout << numForTable << " X " << "4 = "<< numForTable *4 <<  endl;
    cout << numForTable << " X " << "5 = "<< numForTable *5 <<  endl;
    cout << numForTable << " X " << "6 = "<< numForTable *6 <<  endl;
    cout << numForTable << " X " << "7 = "<< numForTable *7 <<  endl;
    cout << numForTable << " X " << "8 = "<< numForTable *8 <<  endl;
    cout << numForTable << " X " << "9 = "<< numForTable *9 <<  endl;
    cout << numForTable << " X " << "10 = "<< numForTable *10 <<  endl;

    return 0;
}
```

11. **Get input from user and print the same number but with negative value. If input is 5, it should print -5**

```
#include <iostream>
using namespace std;
int main ()
{
    int a;
    cin>>a;
    cout << -a  ;

    return 0;
}
```

--Wrong answer, do it again

12. **Declare a variable with value 10, now make it 12 without + operator, and print the value (hint, values can be increased with operators other than +)**

```
#include <iostream>
using namespace std;
int main()
{
  int number=10;
  int result = number^ 6 ;

  cout << result;

  return 0;
 }
```

--Wrong answer, do it again

13. **Declare a variable with value 10, now make it 8 without - operator, and print the value, (hint, values can be decreased with operators other than -)**

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

int main()
{
  int number=10;
  int result = number^ 2 ;

  cout << result;

  return 0;
```

```
}
```

14. **Store value 2 and 4 in two variables, now apply bitwise AND operator and store its value in a new variable. and understand how the logic worked**

```
include<iostream>
using namespace std;
int main()
{
  int a=2;
  int b=4;
  int c = a&b;
  cout<< c;

   return 0;
 }
```

15. **Store value 2 and 4 in two variables, now apply bitwise OR operator and store its value in a new variable. and understand how the logic worked.**

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

int main()
{
  int a=2;
  int b=4;
  int c = a|b;
  cout<< c;
```

```
 return 0;
}
```

16. **Store value 2 and 4 in two variables, now apply bitwise XOR operator and store its value in a new variable. and understand how the logic worked.**

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

int main()
{
 int a=2;
 int b=4;
 int c = a^b;
 cout<< c;


 return 0;
}
```

17. **Store value 2 and 4 in two variables, now apply bitwise Left 1000operator and store its value in a new variable. and understand how the logic worked.**

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

int main()
{
 int a=2;
 int b=4:
```

```
 int c,d;
 c= a <<1;
 d= b <<1;
 cout<< c << endl<< d;

return 0;
}
```

18. **Store value 2 and 4 in two variables, now apply bitwise bitwise Right Shift operator and store its value in a new variable. and understand how the logic worked.**

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

int main()
{
  int a=2;
  int b=4;
  int c,d;
  c= a >>1;
 d= b >>2;
cout<< c << endl<< d;

return 0;
}
```

19. **Check if a number is even or odd, without using / or % operator**

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

```
using namespace std;

int main()
{
 int a,b,c;
 cin>>a;
 b=1;
 c= a&b;

 string num= (c==0)? "even" : "odd";
cout << " The Number is : " << num;

return 0;
}
```

--Incorrect results for long inputs. Correcct again please

20. **Take input from user in two variables, then concatenate the input and show as one output.**

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

 int main()
{
  string age,studentName;
  cout << "Type your age in Characters: " <<endl;
  getline(cin, age);
  cout << "Write your name : " << endl;
  getline(cin, studentName); // getline () is used to get complete input from the user in a string   link cpp forums
  cout << "You are "<< age << " years old and Your name is "  << studentName;
```

```
 return 0;
}
```

21. **Print "\\ Hello World //"**

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

int main()
{
 char braces1[3] = "\\" ;
 char braces2[3] = "//" ;
 cout << braces1 <<"\\" <<"Hello World" <<    braces2;  // "\\" in this line prints 1 \      //

 return 0;
}
```

22. **Take Input from user and then show its length on screen**

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

 int main()
{
   string message ;
   cin >> message;
   cout << message.size();

   return 0;
```

```
}
```

23. **Take input from user and then show its first character on screen**
    --SIze method call not needed, simply do it with index zero

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

int main()
{

    string message;
    cin >> message;
    int i = message.size();

    cout << message[0];

    return 0;
}
```

24. **Take input from user and then show its last character on screen**

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

int main()
{

  string message;
```

```
    cin >> message;
    int i = message.size();

    cout << message[i - 1 ];

    return 0;
  }
```

25. **Take 2 inputs from user. Compare them, if they are equal, print 1 else print 0. (Without using if else.)**

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

int main ()
{
  int input1, input2;
  cin >> input1 >> input2;
  int comparison;
  comparison= (input1==input2)? 1 : 0 ;   -- It s is called ternary  operator
  cout << comparison;

      return 0;
}
```

26. **Take 4 inputs from user. Compare them, if they are equal, print 1 else print 0. (Without using if else.)**

```
--Rename the variables properly
```

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

int main ()
{
  int firstInput, secondInput,thirdInput, forthInput;
  cin>>firstInput>>secondInput>>thirdInput>>forthInput;
  int firstComparison,secondComparison,thirdComparison,finalComparison;
   firstComparison= (firstInput==secondInput)? 1 : 0;
  secondComparison= (thirdInput==forthInput)? 1 : 0;
  thirdComparison= (firstInput==thirdInput)? 1 : 0;
  finalComparison= (firstComparison==1 && secondComparison==1 &&thirdComparison==1)? 1 : 0;
  cout << finalComparison;

     return 0;
}
```

27. **Take input from user, if input is "A", print "ABCD"**
    if input is "a" print "abcd"
    if input is "1" print "1234"
    if input is none of these
    Print "Invalid input"

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

int main ()
{
  char alpha;
```

```
    cin >>alpha;
    if (alpha== 'a')
    {
       cout << "abcd";
     }
    else if(alpha=='A')
    {
       cout << "ABCD";
    }
    else if(alpha=='1')
    {
       cout << "1234";
    }
    else
    {
       cout << "invalid input";
    }


       return 0;
}
```

28. **Take input from user, check if number is even and odd.**
    Print "Even" for even case and "Odd" for odd case

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

```
int main ()
{
  int a;
  cin >> a;
  if(a%2=0)
  {
     cout << "even";
  }
     else
  {
     cout << "odd";
  }

     return 0;
}
```

29. **Take input from user, if input is 5 character long. Print "All good"**
    if input is 3 character long Print"Good"
    if 2, print "OK"
    if 1 Print "Not OK"
    for any other input print "Go, take some rest"

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

int main ()
{
  string words;
```

```
cin >> words;
int length;
length = words.size();

if(length ==5)
{
   cout << "All good";
}

else if(length ==3)
{
   cout << "Good";
}

else if(length ==2)
{
   cout << "OK";
}

else if(length ==1)
{
   cout << "Not ok";
}

else
{
   cout << "Go, take some rest";
}

return 0;
```

```
}
```

30. **Take input from user, if input is greater than 5 and less than 10 print "Average"**
    if greater than 10 and less than 15 print "Good"
    if greater than 15 and less than 20print "Very Good"
    else print "Go, take some rest"

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

int main ()
{
  int input;
  cin >> input;

  if(input > 5 && input <10)
  {
     cout << "AVERAGE";
  }

  else if(input > 10 && input <15)
  {
     cout << "Good";
  }

  else if(input >15 && input <20)
  {
     cout << "Very Good";
```

```
    }

    else
    {
       cout << "Go, take some rest";
    }

       return 0;
}
```

31. **Take input from user.**
    if input is "St" Print "Its Saturday"
    if input is "Su" Print "Its Sunday"
    if input is "Mo" Print "Its Monday"
    if input is "Tu" Print "Its Tuesday"
    if input is "We" Print "Its Wednesday"
    if input is "Th" Print "Its Thursday"
    if input is "Fr" Print "Its Friday"
    if none of these print "Invalid input"

```
Don't use array here
#include <iostream>
using namespace std;

int main ()
{
  string userInput;
```

```
cin>> userInput;

if (userInput == "St")
{
   cout << "It's Saturday";
}
else if (userInput == "Su")
{
   cout << "It's Sunday";
}
else if (userInput == "Mo")
{
   cout << "It's Monday";
}
else if (userInput == "Tu")
{
   cout << "It's  Tuesday";
}
else if (userInput == "We")
{
   cout << "It's Wednesday";
}
else if (userInput == "Th")
{
   cout << "It's Thursday";
}
else if (userInput == "Fr")
{
   cout <<"It's  Friday";
}
```

```
    else
    {
       cout << "Invalid Input";
    }

       return 0;
}
```

-- Make it for the one subject only

32. **Make a grading system, take input from user, and print the GPA for that course example 90= A 85= B+ 80= B and so on.**

    if input is greater than 100 or less than 0 print "Invalid input"

```
#include<iostream>
using namespace std;
int main()
{
      int marks;
    cout << "Enter your  marks: " << endl;
    cin>>marks;

    int total= 100;

    if (marks>100 || marks <0)
      {
         cout<< "Invalid Input"<< endl;
      }
```

```
}
string Grade[7] = {"A","B+","B","C","D","E","F"};
    if(marks>89)
{
 cout << Grade[0] << " is your Scored Grade";
}
else if(marks>82 && marks<90)
{
 cout << Grade[1] << " is your Scored Grade";
}
else if(marks>75 && marks<83)
{
 cout << Grade[2] << " is your Scored Grade";
}
else if(marks>70 && marks<76)
{
 cout << Grade[3] << " is your Scored Grade";
}
else if(marks>62 && marks<71)
{
 cout << Grade[4] << " is your Scored Grade";
}
else if(marks>51 && marks<63)
{
 cout << Grade[5] << " is your Scored Grade";
}
else if(marks>51 && marks<63)
{
 cout << Grade[5] << " is your Scored Grade";
}
```

```
else if (marks<52)
{
  cout << Grade[6] << " is your Scored Grade";
}
cout << endl;
float gpa = float(marks)/25;
cout<< gpa;
  return 0;
}
```

33. **Make a program, that prints the following against the input,**
Input:1
Output: "ABCD"
Input:2
Output: "abcd"
Input:3
Output: "1234"
Input:4
Output: "Special Characters"
Any other input
Output: "Invalid input"

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

int main()
{
    int input;
    cin >> input;
    switch (input)
```

```
{
  case 1:
        cout << "ABCD";
          break;
  case 2:
        cout << "abcd";
          break;
  case 3:
        cout << "1234";
          break;
  case 4:
        cout << "Special Characters";
        break;

  default:
        cout << "Invalid Input";


  }
  return 0;
}
```

34. **Take input in two numbers, lets say <firstNumber> and <secondNumber>**
    take input in another variable <operator> .
    Now use switch statements to make the calculator, if the operator is "+"
    Add both values and show the sum in output.
    If it's "-" take difference of second-first and print the output.
    DO same for the "/", "%" and "*" operators
    Incase the operator is different then these, output: "Invalid Output"

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

int main()
{
    int fNum,sNum;
    cout << "Type 2 numbers: " << endl;
    cin >> fNum >> sNum;
    char op;
    cout << "Select the Operation to Perform: " << endl << "+ - * / % " << endl;
    cin>> op;

    switch (op)
    {
       case '+':
       cout << "The sum of " << fNum << " and " << sNum << " = " << fNum + sNum;
       break;
       case '-':
       cout << "The Subtraction of " << fNum << " and " << sNum << " = " << fNum - sNum;
       break;
       case '*':
       cout << "The product of " << fNum << " and " << sNum << " = " << fNum * sNum;
       break;
       case '/':
       cout << "The division of " << fNum << " and " << sNum << " = " << fNum * sNum;
       break;
       case '%':
       cout << "The Mod of " << fNum << " and " << sNum << " = " << fNum % sNum;
```

```
        break;

        default:
        cout << "Invalid Operation";


    }
        return 0;
}
```

35. **Do program number 33 with switch statements**

\\SWITCH STATEMENT DOESNOT WORK WITH STRING

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

int main()
{
    string daysToPrint[7]={"It's Monday","It's  Tuesday","It's Wednesday","It's Thursday","It's  Friday","It's Saturday","It's Sunday"};
    string userInput;
    cin>> userInput;

    switch (userInput)
    {
        case "St":
```

```
            cout << daysToPrint[5];
            break;
            case "Su":
            cout << daysToPrint[6];
            break;
            case "Mo":
            cout << daysToPrint[0];
            break;
            case "Tu":
            cout << daysToPrint[1];
            break;
            case "We":
            cout << daysToPrint[2];
            break;
            case "Th":
            cout << daysToPrint[3];
            break;
            case "Fr":
            cout << daysToPrint[4];
            break;
            default:
            cout << "Invalid Input";
        }
        return 0;
    }
```

36. **Do program number 31 with switch statements**

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

int main()
{
    string words;
    cin >> words;
    int length;
    length = words.size();

    switch (length)
    {
       case 1:
       cout << "Not Ok";
       break;
       case 2:
       cout << "Ok";
       break;
       case 3:
       cout << "Good";
       break;
       case 5:
       cout << "All Good";
       break;

       default:
       cout << "Go, take some rest";
    }
    return 0;
}
```

```
}
```

37. **Take input from user, decide if its a even or odd.**
Without if else, but using switch statement (Hint: Type casting, Type conversion)

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

int main()
{
    int input;
    cout << "Type a number: " << endl;
    cin>> input;
    int result = input%2;
    switch(result)
    {
      case 1:
      cout << "The Number you typed " << input << " is odd";
      break;
      case 0:
      cout << "The Number you typed " << input << " is even";
      break;
      default:
      cout << "You typed an invalid data Type";

    }

      return 0;
```

```
}
```

First Phase End

Second Phase Start

Day 5

Comment: Read the statement carefully and then implement.

38. **Print all even numbers between 1 to 100**

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

int main()
{
   int number=1;
   while(number <=100 && number%2==0)
   {
    cout << number<< " ";

   }

   return 0;
}
```

39. **Print all prime numbers between 10 to 50**

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

int main()
{
  int number=10;
  while(number <=50)
  {
    while(number%2 !=0 && number%3 !=0  && number%5 !=0 && number%7 !=0)
    {
      cout << number<< " ";
      break;
    }
   number++;
  }

  return 0;
}
```

40. **Print ABC....XYZ (Whole ABC) using loop (Hint: ASCII characters)**

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

int main()
{
  int aplhaCode=65;

  while( aplhaCode<91)
  {
```

```
    cout << char(aplhaCode)<< " ";
    aplhaCode++;
  }
  return 0;
}
```

Comment: Read the statement carefully and then implement.

41. **Print 1,2,3,4,5,6,7,8,9 using loop**

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

int main()
{
  int aplhaCode=65;

  while( aplhaCode<91)
  {
    cout << char(aplhaCode)<< " ";
    aplhaCode++;
  }
  return 0;
}
```

{

1. Understand problem statement
2. Make logic
3. Implement, the psuedo code
4. Dry run and validate if logic is correct or not

5. Impelemnt the code
6. Make corrections,
   a. Does the solutions solves the problem asked in problem statement?
   b. Does the output matches to the output provided in the problem statement?
   c. Will a new user be able to operate this program? Can I add any messages, to help user, run this program?
7. Is there any code, that can be removed? Extra variables, or extra print statements, or debugging/testing code etc.
8. Look at the program by the eyes of third person. Find all the error or wrong work you can find. And then correct, if found any.

}

0,1,1,2,3,5,8,13,21

```
firstNumber=2;
secondNumber=2;
tmpe=8;
number=
Output: 0,1,1 ,2,4
Print (0);
Print (1);
while (firstNumber+secondNumber<=21)
{
  Print (firstNumber+secondNumber);
  temp=secondNumber
  secondNumber=firstNumber+secondNumber;
  firstNumber=temp
}
Z
```

1. **Print Fibonacci series - 0 to 21**

1. **Print Fibonacci series, 0 to 21**

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

int main()
{
  int terminationNum= 21;
  int firstFibNum =0;
  int secondFibNum =1;
  int nextFibNum= firstFibNum + secondFibNum;
  cout << "The Fibonacci numbers from 1 to 21 are following: "<<endl;
  cout << firstFibNum << " "<<secondFibNum<<" ";

  while(nextFibNum<=terminationNum)
  {
    cout <<nextFibNum << " ";
    //updating values for next num
    firstFibNum =secondFibNum;
    secondFibNum=nextFibNum;
    nextFibNum = firstFibNum +secondFibNum;

  }

  return 0;
}
```

```
The Fibonacci numbers from 1 to 21 are following:
0 1 1 2 3 5 8 13 21
```

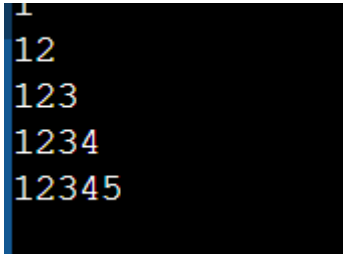
2. **Print**
   1
   12
   123
   1234
   12345

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

int main()
{
  int line=1;

  while(line <6)
  {
    int column=1;
    while(column<=line)
    {
      cout<<column;
      column++;
    }
    cout <<endl;
    line++;
  }
  return 0;
}
```

OUTPUT:



3. **Print**

*****

****

***

**

*

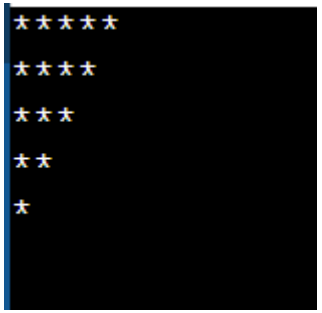
```
#include <iostream>
using namespace std;

int main()
{
  int line=1;

  while(line <6)
  {
    int column=5;
    while(column>=line)
    {
      cout<<"*";
      column--;
    }
    cout <<endl;
```

```
    line++;
  }
  return 0;
}
```

output :



4. **Get an input**
   print its table using loop

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

int main()
{
  int numForTable;
  cout <<"Please enter the number for Table: ";
  cin>>numForTable;
  int multiple=1;
```

```
  cout<< "The Table of "<<numForTable<< " is : " <<endl;
  while( multiple<11)
  {
    cout << numForTable<< " X " <<multiple<< " = " <<numForTable*multiple<<endl;
    multiple++;
  }
  return 0;
}
```

```
Please enter the number for Table: 5
The Table of 5 is :
5 X 1 = 5
5 X 2 = 10
5 X 3 = 15
5 X 4 = 20
5 X 5 = 25
5 X 6 = 30
5 X 7 = 35
5 X 8 = 40
5 X 9 = 45
5 X 10 = 50
```

46. **Take input from user, and print its length on screen. without using built in function of Length or Size**

```
#include<string.h>
#include <iostream>
using namespace std;
int main()
{
  string userInput;
  cout << "Please enter your string: " << endl;
```

```
    cout << "Please enter your string: " << endl;
    getline(cin,userInput);
    int count=0;
    while (userInput[count]!='\0')
    {
       count++;
    }
    cout << "The length of the typed string is " << count;
    return 0;
}
```

47. Print

```
    *
   **
  ***
 ****
*****
```

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

int main()
{
    int rows =1,spacesTerminationNum=0;
    while(rows<=5)
    {

       int spaces =4;
```

```
    while(spaces>spacesTerminationNum)
    {

      cout <<" ";
      spaces--;

    }
    int columns=1;
    while(columns<=rows && rows<6)
    {

      cout << "*";
      columns++;
    }
    cout << endl;
    rows++;
    spacesTerminationNum++;

  }
   return 0;
}
```

48. **Get input from user and check if its a palindrome number or not.**

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

    int main()
    {
        int number,remainder,reverseNum=0,forComparison;
```

```
        cout <<"Please Enter a Number to Check whether it's palindrome or not: " <<endl;
        cin>>number;
        forComparison=number;
        while(number>0)
        {
           remainder=number%10;
           reverseNum=(reverseNum*10)+ remainder;

           number=number/10;
        }
        while(reverseNum==forComparison)
        {
          cout << "The Number is Palindrome";
           break;
        }
        while(reverseNum!=forComparison)
        {
             cout << "The Number is not Palindrome";
              break;
    }

      return 0;
     }
```

Comments: reuse variables, wherever possible.
Read variable scope in C++;
Read about re use of code.

49. **Print**

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

int main()
{
   int rows =1,spacesTerminationNum=0;
   while(rows<=5)
   {
      int spaces =4;
      while(spaces>spacesTerminationNum)
      {
         cout <<" ";
         spaces--;

      }
      int columns=1;
      while(columns<=rows)
      {
         cout << "*";
         columns++;
      }
```

```
    cout <<endl;
    rows++;
    spacesTerminationNum++;

  }

  ///for backwards
  while (rows==6)
  {
    int lines =1, termination=0;
    while(lines>termination && lines<=4)
    {
      int blanks =1;
      while(blanks<=lines)
      {
      cout <<" ";
      blanks++;

      }
      int attributes=4;
      while(attributes>termination)
      {
        cout << "*";
        attributes--;
      }

      cout <<endl;
      lines++;
      termination++;
```

```
        termination--;

      }


      break;
    }

    return 0;
}
```

50. ********
*
**
***
**
*
****

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

int main()
{
  int rows =0,spacesTerminationNum=0;
  while(rows==0 )
  {
    int whileTerminationNum=0;
    while(whileTerminationNum<7)
```

```
    while(whileTerminationNum<7)
    {
      cout << "*" ;
      whileTerminationNum++;
    }
    rows++;
  }
  cout << endl;
  while(rows>0 && rows<=3)
  {
    int spaces =4;
    while(spaces>spacesTerminationNum)
    {
      cout <<" ";
      spaces--;

    }
    int columns=1;
    while(columns<=rows)
    {
      cout << "*";
      columns++;
    }

    cout <<endl;
    rows++;
    spacesTerminationNum++;

  }
```

```
///backwards
while (rows==4)
{
  int lines =1, termination=0;
  while(lines>termination && lines<=2)
  {
    int blanks = -1;
    while(blanks<=lines)
    {
    cout <<" ";
    blanks++;

    }
    int attributes=2;
    while(attributes>termination)
    {
      cout << "*";
      attributes--;
    }

    cout <<endl;
   /// for printing last line
    while(lines==2 )
  {
    int whileTerminationNum=0;
    while(whileTerminationNum<7)
    {
      cout << "*" ;
      whileTerminationNum++;
    }
```

```
            lines++;

        }
            lines++;
            termination++;

        }

        break;
    }


    return 0;
}
```

51. **Take input from user, count all the spaces and display their length.**

```
#include<string.h>
#include <iostream>
using namespace std;

int main()
{
   string userInput;
   char space=' ';
   getline(cin, userInput);
   int count=0;
   for(int index=0; userInput[index]!='\0';++index )
   {
```

```
    if(userInput[index]==space)
    {
      count++;
    }
  }
  cout << count;


  return 0;
}
```

Comments: Give proper message to user

52. **Take a string input from user in first variable,**
Take a character input in second variable.
Now show in output, how many time second input appeared in first.

```
#include<string.h>
#include <iostream>
using namespace std;
int main()
{
  string userInput;
  char charTestInput;
  getline(cin, userInput);
  cin>> charTestInput;

  int count=0;
  for(int index=0; userInput[index]!='\0';++index )
  {
```

```
    if(userInput[index]==charTestInput)
    {
      count++;
    }
  }
  cout << count;



  return 0;
}
```

Operator precedence.

53. Read about operator precedence
54. Read about variable scope.
55. Read about reuse ability of code.

57. **Write a function that prints hello world**

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

void helloWorld();// Delcaring the function
void helloWorld()//definition
{
  cout << "Hello World";
}
int main()
```

```
int main()
{
   cout << "This program prints: ";
   helloWorld();//calling



   return 0;
}
```

58. Write a function, that prints 1 to 100 counting

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

void counting();      // Delcaring the function
void counting()       //definition
{
   int countLimit=100;
   for(int num=1;num<=countLimit;num++)
   {
      cout << num << endl;
   }
}
int main()
{
   cout << "The counting from 1 to 100"<< endl;
   counting();          //calling

   return 0;
}
```

59. **Write a functions, that accepts one argument of integer type and print counting from 0to that number**

59. **Write a functions, that accepts one argument of integer type and print counting from 0to that number**

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

void counting(int);      // Delcaring the function
void counting(int countEnd)       //definition
{
  int countStart=0;
  int countLimit=countEnd;
  if(countLimit >countStart)
  {
    for(int num=countStart;num<=countLimit;num++)
    {
      cout << num << endl;
    }
  }
  else if(countLimit<countStart)
  {
    for(int num=countStart;num>=countLimit;num--)
    {
      cout << num << endl;
    }



  }
  else if (countLimit==countStart)
  {
    cout << "You typed " << countStart;
  }
```

```
}
int main()
{
   int countStart=0;
   int userLimit;
   cout << "Please enter a number where the count should end: " << endl;
   cin>> userLimit;
   cout << "The counting from " << countStart<< " to "<<userLimit<< " is : "<< endl;
   counting(userLimit);          //calling


   return 0;
}
```

60. Write a function that takes two integer, and prints the greater one out of both

```
#include<iostream>
using namespace std;
void greaterNumber(int , int);



void greaterNumber(int numone, int numtwo)
{
  int greater;
  if (numone>numtwo)
  {
    greater=numone;
    cout<< "The Greater number is : ";
```

```
    }
    else if (numone<numtwo)
    {
      greater=numtwo;
      cout<< "The Greater number is : ";
    }
    else if (numone==numtwo)
    {
      greater=numtwo;
      cout<<"They are equal & you typed: ";
    }
    else
    {
       cout<<"Please typeNumbers only";
    }
      cout<<greater;
   }



  int main()
 {
   int numFirst;
   int numSecond;
   cout<<"Enter first Num: "<< endl;
   cin>> numFirst;
   cout<<"Enter Second Num: " <<endl;
   cin>> numSecond;
   greaterNumber(numFirst, numSecond);
```

```
}
//1st non integar input results in equal result
```

62. Write a function that take two integer as parameter and return their sum, now print that sum in Main

```
#include<iostream>
using namespace std;
int sum(int ,int );
int sum(int numOne, int numTwo)
{

    int total;
    total=numOne+numTwo;
    return total;
}
int main()
{
  int firstNum,secondNum;
  cout<<"Enter first number for sum:";
  cin>>firstNum;
  cout<<"Enter second number for sum:";
  cin>>secondNum;
  cout<<"The sum of "<<firstNum<<" and "<<secondNum<<" is: ";
  cout<<sum(firstNum,secondNum);

  return 0;
}
```

63. Write a function that accepts a string as a parameter and returns its length.

```
include<string.h>
#include<iostream>
using namespace std;

int length(string);
int length(string input)
{
    int count;
    count= input.size();
        return count;
}
int main()
{
   string typed;
   getline(cin, typed);
   cout<<length(typed);

   return 0;
}
```

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