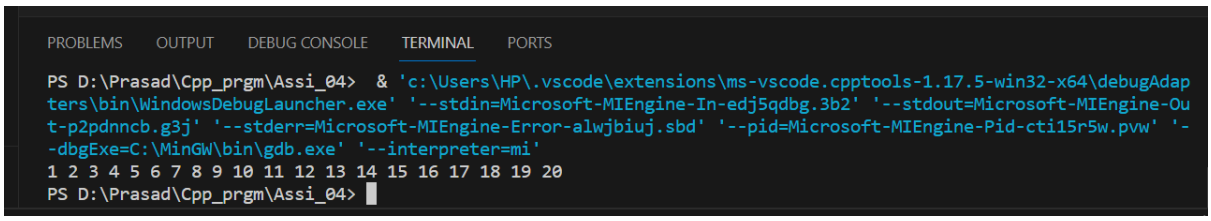
C++ ASSIGNMENT 2 (FUNCTIONS)

Q) - Solve the questions of C assignment 1.2 using functions.

1.WAP for printing all natural numbers till 20.
Code:--

```
#include<iostream>
using namespace std;
void printNatural()
{
for(int i=1; i<=20; i++)
{
cout<<i<<" ";
}
}
int main()
{
printNatural();
return 0;
}
```

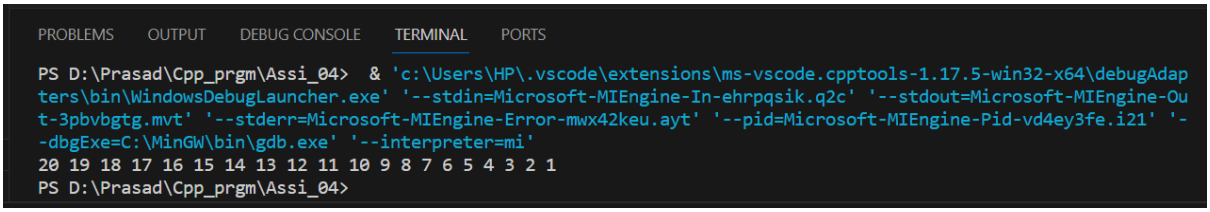
Output:--



2.WAP for printing all natural numbers in reverse order starting from 20.
Code:--

```
#include<iostream>
using namespace std;
void reverseNatural()
{
for(int i=20; i>0; i--)
cout<<i<<" ";
}
int main()
{
reverseNatural();
return 0;
}
```

Output :--



3.WAP for printing all even numbers from 1 to 20.

Code:--

```
#include<iostream>
using namespace std;
void printEvenNo()
{
for(int i=1; i<=20; i++)
{
if(i%2==0)
cout<<i<<" ";
}
}
int main()
{
printEvenNo();
return 0;
}
```

Output:--

```
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS

PS D:\Prasad\Cpp_prgm\Assi_04>  & 'c:\Users\HP\.vscode\extensions\ms-vscode.cpptools-1.17.5-win32-x64\debugAdap
ters\bin\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-pnjesai3.uin' '--stdout=Microsoft-MIEngine-Ou
t-rdhzmijo.11n' '--stderr=Microsoft-MIEngine-Error-yhmwz52g.jfe' '--pid=Microsoft-MIEngine-Pid-jo5422ip.ic1' '-
-dbgExe=C:\MinGW\bin\gdb.exe' '--interpreter=mi'
2 4 6 8 10 12 14 16 18 20
PS D:\Prasad\Cpp_prgm\Assi_04>
```

4.WAP for printing all odd numbers from 1 to 20.

Code:--

```
#include<iostream>
using namespace std;
void printOddNo()
{
for(int i=1; i<=20; i++)
{
if(i%2!=0)
cout<<i<<" ";
}
}
int main()
{
printOddNo();
return 0;
}
```

Output:--

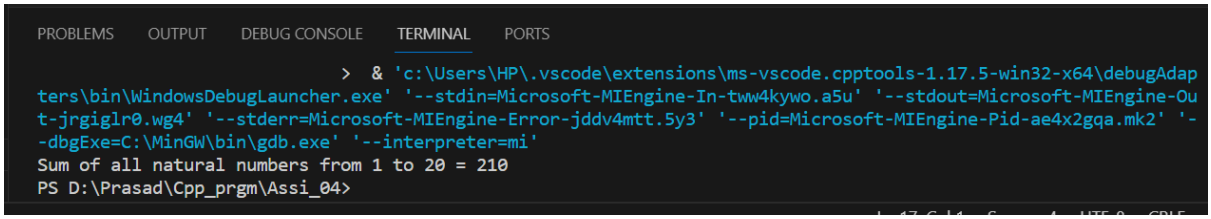
```
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS

PS D:\Prasad\Cpp_prgm\Assi_04>  & 'c:\Users\HP\.vscode\extensions\ms-vscode.cpptools-1.17.5-win32-x64\debugAdap
ters\bin\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-5m510x2w.oje' '--stdout=Microsoft-MIEngine-Ou
t-odu3zyc2.3um' '--stderr=Microsoft-MIEngine-Error-1twz2131.tpn' '--pid=Microsoft-MIEngine-Pid-bsowmvwy.uq2' '-
-dbgExe=C:\MinGW\bin\gdb.exe' '--interpreter=mi'
1 3 5 7 9 11 13 15 17 19
PS D:\Prasad\Cpp_prgm\Assi_04>
```

5.WAP for adding all numbers from 1 to 20.

Code:--

```
#include<iostream>
using namespace std;
void addNumbers()
{
int sum = 0;
for(int i=1; i<=20; i++)
{
sum = sum + i;
}
cout<<"Sum of all natural numbers from 1 to 20 = "<<sum;
}
int main()
{
addNumbers();
return 0;
}
```

Output:--

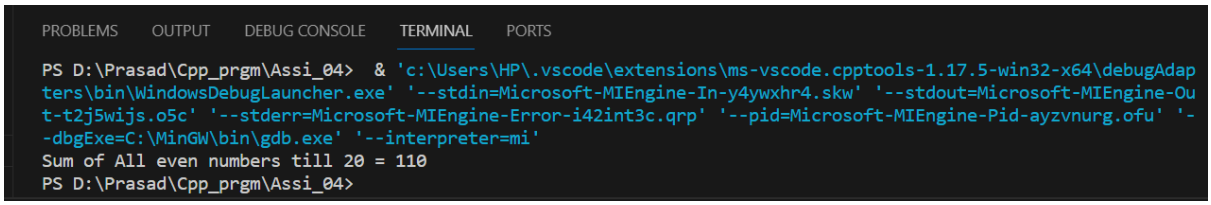


6.WAP for finding sum of all even numbers till 20.

Code:--

```
#include<iostream>
using namespace std;
void addEvenNumbers()
{
int sum = 0;
for(int i=1; i<=20; i++)
{
if(i%2==0)
sum = sum + i;
}
cout<<"Sum of All even numbers till 20 = "<<sum;
}
int main()
{
addEvenNumbers();
return 0;
}
```

Output:--

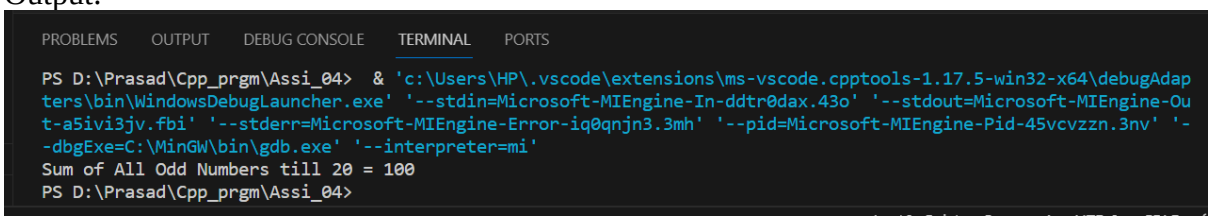


7.WAP for finding sum of all odd numbers till 20.

Code:--

```
#include<iostream>
using namespace std;
void addOddNumbers()
{
int sum = 0;
for(int i=1; i<=20; i++)
{
if(i%2!=0)
sum = sum + i;
}
cout<<"Sum of All Odd Numbers till 20 = "<<sum;
}
int main()
{
addOddNumbers();
return 0;
}
```

Output:--



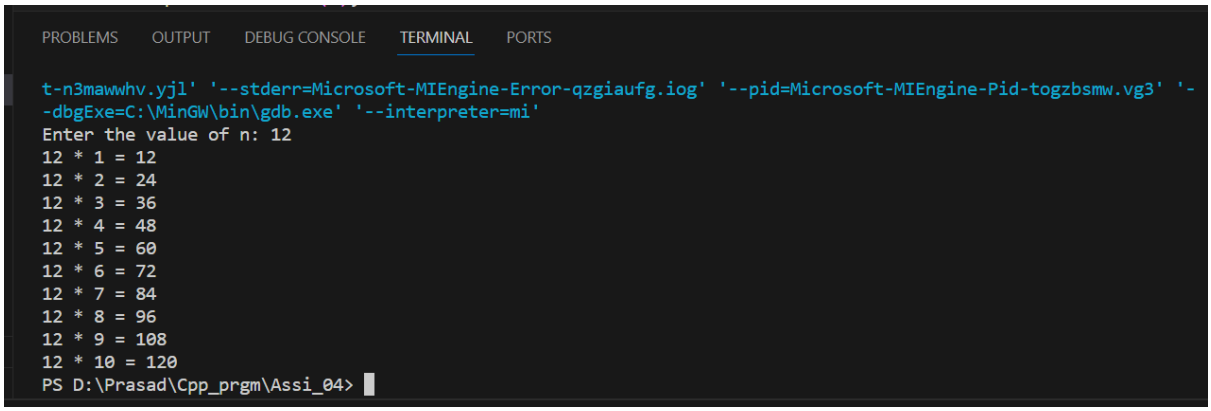
8.WAP for printing multiplication table of a number. For eg. Display should be " 2 X 1 = 2".

Code:--

```
#include<iostream>
using namespace std;
void multiplicationTable(int n)
{
for(int i=1; i<=10; i++)
{
cout<<n<<" * "<<i<<" = "<<(n*i)<<endl;
}
}
int main()
```

```
{
int n;
cout<<"Enter the value of n: ";
cin>>n;
multiplicationTable(n);
return 0;
}
```

Output:--

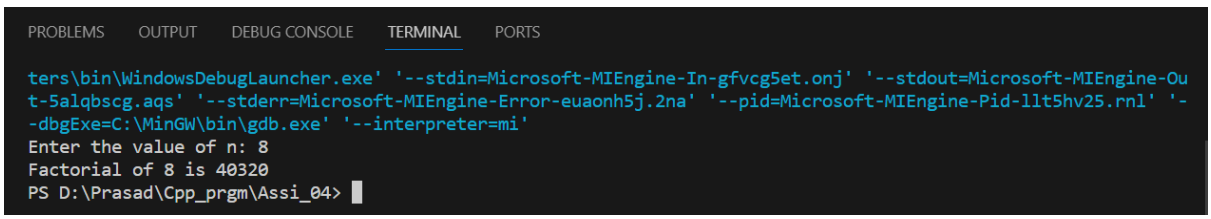


9.WAP to calculate factorial of a number.

Code:--

```
#include<iostream>
using namespace std;
void fact(int n)
{
int fact = 1;
for(int i=1; i<=n; i++)
{
fact = fact * i;
}
cout<<"Factorial of "<<n<<" is "<<fact;
}
int main()
{
int n;
cout<<"Enter the value of n: ";
cin>>n;
fact(n);
return 0;
}
```

Output:--

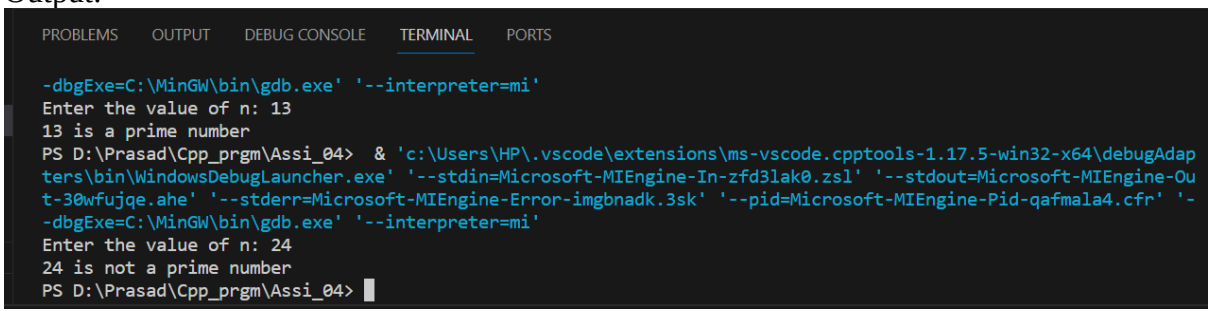


10.WAP to check whether a number is prime or not.

Code:--

```
#include<iostream>
using namespace std;
void checkPrime(int n)
{
bool flag = true;
if (n == 0 || n == 1)
{
flag = false;
}
for (int i = 2; i <= n/2; ++i)
{
if (n % i == 0) {
flag = false;
break;
}
}
if (flag)
cout << n << " is a prime number";
else
cout << n << " is not a prime number";
}
int main()
{
int n;
cout<<"Enter the value of n: ";
cin>>n;
checkPrime(n);
return 0;
}
```

Output:--



11.WAP to print all digits of a number and their sum.

Code:--

```
#include<iostream>
using namespace std;
void digitAndSum(int n)
```

```
{
int sum=0;
while(n!=0)
{
int last_digit = n%10;
cout<<last_digit<<endl;
n = n/10;
sum = sum + last_digit;
}
cout<<"Sum of digits = "<<sum;
}
int main()
{
int n;
cout<<"Enter a number: ";
cin>>n;
digitAndSum(n);
return 0;
}
```

Output:--

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

-dbgExe=C:\MinGW\bin\gdb.exe' '--interpreter=mi'
Enter a number: 240902
2
0
9
0
4
2
Sum of digits = 17
PS D:\Prasad\Cpp_prgm\Assi_04>
```

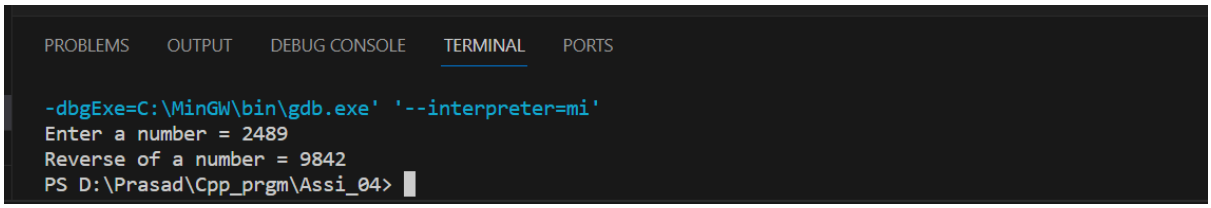
12.WAP to print reverse of a number.

Code:--

```
#include<iostream>
using namespace std;
void reverseNumber(int n)
{
int rev=0;
while(n!=0)
{
int last_digit = n % 10;
rev = rev*10 + last_digit;
n = n/10;
}
cout<<"Reverse of a number = "<<rev;
}
```

```
int main()
{
int n;
cout<<"Enter a number = ";
cin>>n;
reverseNumber(n);
return 0;
}
```

Output:--

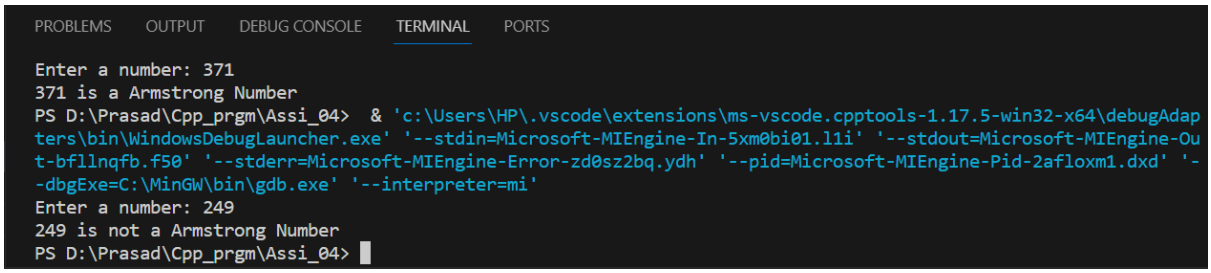


13.WAP to check whether the number is Armstrong or not.

Code:--

```
#include<iostream>
using namespace std;
void checkArmstrong(int n)
{
int temp, sum=0;
temp = n;
while(n!=0)
{
int r = n % 10;
sum = sum + (r*r*r);
n = n/10;
}
if(temp == sum)
cout<<temp<<" is a Armstrong Number";
else
cout<<temp<<" is not a Armstrong Number";
}
int main()
{
int n;
cout<<"Enter a number: ";
cin>>n;
checkArmstrong(n);
return 0;
}
```

Output:--

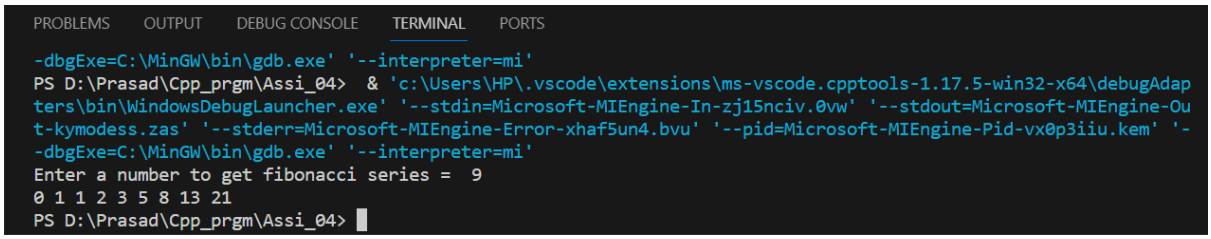


14.WAP to print the Fibonacci series in a given range.

Code:--

```
#include<iostream>
using namespace std;
void printFibonacciSeries(int n)
{
int n1 = 0;
int n2 = 1;
cout<<n1<< " " << n2;
for (int i = 2; i < n; i++)
{
int sum = n1 + n2;
cout<<" " <<sum;
n1 = n2;
n2 = sum;
}
}
int main()
{
int count;
cout<<"Enter a number to get fibonacci series =  ";
cin>>count;
printFibonacciSeries(count);
return 0;
}
```

Output:--



15.WAP to check whether the number entered is palindrome or not.
Code:--

```
#include<iostream>
using namespace std;
void checkPalindrome(int n)
{
int rev=0;
int original = n;
while(n!=0)
{
int last_digit = n % 10;
rev = rev*10 + last_digit;
n = n/10;
}
if(rev == original)
cout<<"is a Palindrome Number";
else
cout<<"is Not a Palindrome Number";
}
int main()
{
int n;
cout<<"Enter a number: ";
cin>>n;
checkPalindrome(n);
return 0;
}
```

Output:--