C++ assignment 1.2

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1. WAP for printing all natural numbers till 20.

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

```
PS E:\Assignments\code\c++as1.2\output> & .\'1.exe'
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Focus folder in explorer (ctrl + click)
PS E:\Assignments\code\c++as1.2\output>
```

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

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

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```
1.2\output'
PS E:\Assignments\code\c++as1.2\output> & .\'2.exe'
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
PS E:\Assignments\code\c++as1.2\output>
```

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

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

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```
2
4
6
8
10
12
14
16
18
20
PS E:\Assignments\code\c++as1.2\output>
```

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

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

```
1
3
5
7
9
11
13
15
17
19
PS E:\Assignments\code\c++as1.2\output>
```

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

```
#include <iostream>
```

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```
using namespace std;
int main() {
int i, sum = 0;
for (i = 1; i <= 20; ++i) {
sum += i;
}
cout << "Sum = " << sum;
return 0;
}
```

```
PS E:\Assignments\code\c++as1.2\output> & .\'5.exe'
Sum = 210
PS E:\Assignments\code\c++as1.2\output>
```

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

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

```
PS E:\Assignments\code\c++as1.2\output> & .\'6.exe'
Sum = 110
PS E:\Assignments\code\c++as1.2\output>
```

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

```
#include <iostream>
using namespace std;
int main() {
int i, sum = 0;
for (i = 1; i <= 20; i++) {
if (i % 2 != 0)
{
sum = sum+i;
}
```

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

```
PS E:\Assignments\code\c++as1.2\output> & .\'7.exe'
Sum = 100
PS E:\Assignments\code\c++as1.2\output>
```

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

```
#include<iostream>
using namespace std;
int main()
{
int n;
cout << "Enter a positive integer: ";
cin >> n;
for (int i = 1; i <= 10; ++i)
{
cout << n << " * " << i << " = " << n * i << endl;
}
return 0;
}
```

```
PS E:\Assignments\code\c++as1.2\output> & .\'8.exe'
Enter a positive integer: 7
7 * 1 = 7
7 * 2 = 14
7 * 3 = 21
7 * 4 = 28
7 * 5 = 35
7 * 6 = 42
7 * 7 = 49
7 * 8 = 56
7 * 9 = 63
7 * 10 = 70
PS E:\Assignments\code\c++as1.2\output>
```

9. WAP to calculate factorial of a number.

```
#include <iostream>
using namespace std;
int main() {
int n;
long factorial = 1.0;
```

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```
cout << "Enter a positive integer: ";
cin >> n;
if (n < 0)
cout << "Error! Factorial of a negative number doesn't exist.";
else {
for(int i = 1; i <= n; ++i) {
factorial *= i;
}
cout << "Factorial of " << n << " = " << factorial;
}
return 0;
}
```

```
PS E:\Assignments\code\c++as1.2\output> & .\'9.exe'
Enter a positive integer: 3
Factorial of 3 = 6
PS E:\Assignments\code\c++as1.2\output>
```

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

```
#include <iostream>
using namespace std;
int main()
{
int n, i, c = 0;
cout << "Enter any number n: ";
cin>>n;
for (i = 1; i <= n; i++)
{
if (n % i == 0)
{
c++;
}
}
if (c == 2)
{
cout << "n is a Prime number" << endl;
}
else
{
cout << "n is not a Prime number" << endl;
}
return 0;
}
```

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```
PS E:\Assignments\code\c++as1.2\output> & .\'10.exe'
Enter any number n: 7
n is a Prime number
PS E:\Assignments\code\c++as1.2\output>
```

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

```
#include<iostream>
using namespace std;
int main()
{
int val, num, sum = 0;
cout << "Enter the number : ";
cin >> val;
num = val;
while (num != 0)
{
sum = sum + num % 10;
num = num / 10;
}
cout << "The sum of the digits of "
<< val << " is " << sum;
}
```

```
PS E:\Assignments\code\c++as1.2\output> & .\'11.exe'
Enter the number : 15
The sum of the digits of 15 is 6
PS E:\Assignments\code\c++as1.2\output>
```

12WAP to print reverse of a number

```
#include <iostream>
using namespace std;
int main() {
int n, reversed_number = 0, remainder;
cout << "Enter an integer: ";
cin >> n;
while(n != 0) {
remainder = n % 10;
reversed_number = reversed_number * 10 + remainder;
n /= 10;
}
cout << "Reversed Number = " << reversed_number;
return 0;
}
```

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```
ments\code\c++as1.2\output'
PS E:\Assignments\code\c++as1.2\output> & .\'12.exe'
Enter an integer: 1923
Reversed Number = 3291
PS E:\Assignments\code\c++as1.2\output>
```

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

```
#include <cmath>
#include <iostream>
using namespace std ;
int main () {
int num , originalNum , remainder , n = 0 , result =
0 , power ;
cout << "Enter an integer: " ;
cin >> num ;
originalNum = num ;
while ( originalNum != 0 ) {
originalNum /= 10 ;
++ n ;
}
originalNum = num ;
while ( originalNum != 0 ) {
remainder = originalNum % 10 ;
power = round ( pow ( remainder , n ));
result += power ;
originalNum /= 10 ;
}
if ( result == num )
cout << num << " is an Armstrong number." ;
else
cout << num << " is not an Armstrong number." ;
return 0 ;
}
```

```
PS E:\Assignments\code\c++as1.2\output> & .\'13.exe'
Enter an integer: 1923
1923 is not an Armstrong number.
PS E:\Assignments\code\c++as1.2\output>
```

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

```
#include <iostream>
using namespace std ;
int main () {
int n, t1 = 0 , t2 = 1 , nextTerm = 0 ;
cout << "Enter the number of terms: " ;
```

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```
cin >> n;
cout << "Fibonacci Series: " ;
for ( int i = 1 ; i <= n; ++ i) {
// Prints the first two terms.
if (i == 1 ) {
cout << t1 << ", " ;
continue ;
}
if (i == 2 ) {
cout << t2 << ", " ;
continue ;
}
nextTerm = t1 + t2;
t1 = t2;
t2 = nextTerm;
cout << nextTerm << ", " ;
}
return 0 ;
}
```

```
PS E:\Assignments\code\c++as1.2\output> & .\'14.exe'
Enter the number of terms: 17
Fibonacci Series: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55
, 89, 144, 233, 377, 610, 987,
PS E:\Assignments\code\c++as1.2\output>
```

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

```
#include <iostream>
using namespace std ;
int main ()
{
string str , temp ;
int i = 0 , j ;
cout << "Enter a string to check for Palindrome: " ;
cin >> str ;
temp = str ;
j = str . length () - 1 ;
//Reversing the temp string.
while ( i < j )
{
swap ( str [ i ], str [ j ]);
i ++ ;
j -- ;
}
if ( temp == str )
{
cout << "The string is a palindrome." << endl ;
```

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```
}
else
{
cout << "The string is not a palindrome." << endl ;
}
return 0 ;
}
```

```
PS E:\Assignments\code\c++as1.2\output> & .\'15.exe'
Enter a string to check for Palindrome: health is wea
lth
The string is not a palindrome.
```