

# Assignment 1

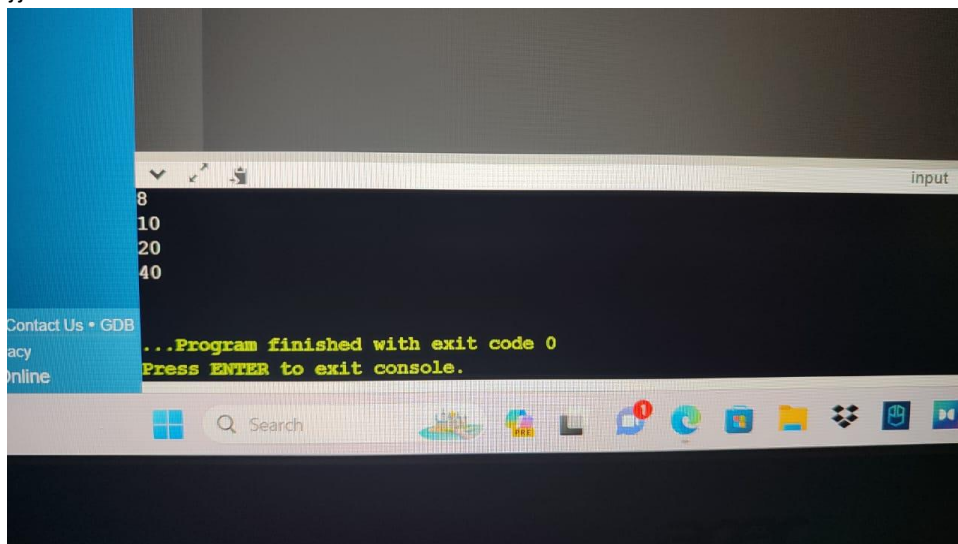
Name: Syed Muhammad Hassaan

Sec: A

Roll no: 460991

## Task 1:

1. `#include <iostream>`
2. `using namespace std;`
3. `int main(){`
4. `int count, num;`
5. `cout<<"Please Enter a Number to Check Factors: ";`
6. `cin>>num;`
7. `for(count=1; count<=num; count++){`
8. `if(num%count==0){`
9. `cout<<count<<endl;`
10. `continue;`
11. `}`
12. `}}`



13.

## Task 2:

1: write the output of the following:

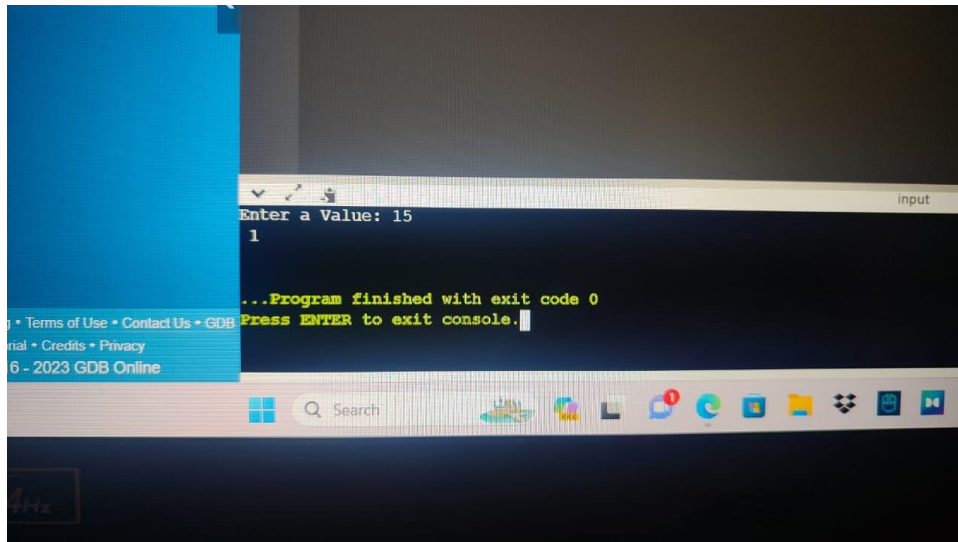
The answer is:

x is 5 and y is 10

## Task 3:

1. #include <iostream>

```
2. using namespace std;
3. int main(){
4.     int num;
5.     bool flag;
6.     cout<<"Enter a Value: ";
7.     cin>>num;
8.     if(num>10 && num<=20){
9.         cout<<" 1 "<<endl;
10.    }
11.    else{
12.        cout<<" 0 "<<endl;
13.    }}
```



14.

## Task 4:

1. `#include <iostream>`

2. `using namespace std;`

3. `int main(){`

4. `int N, i, j;`

5. `bool flag=false;`

6. `cout<<"Enter a Number to Check: ";`

7. `cin>>N;`

8. `i=N;`

9. `while(i>1){`

10. `j=i-1;`

11. `flag=false;`

12. `while(j>1){`

13. `if(i%j==0){`

14. `flag=false;`

15. `break;`

16. `}`

17. `else if(i%j==1){`

18. `flag=true;`

19. `}`

20. `j--;`

21. `}`

22.

23.

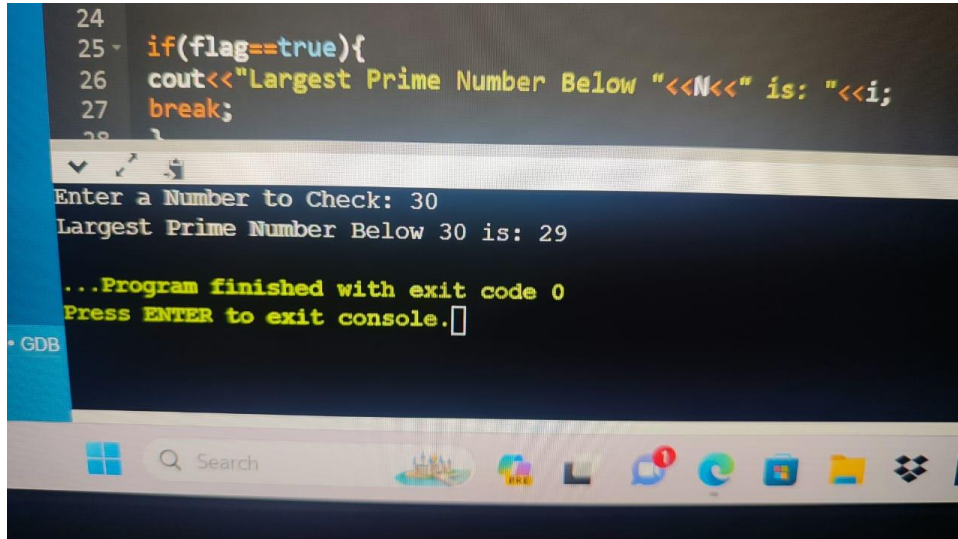
24. `if(flag==true){`

25. `cout<<"Largest Prime Number Below "<<N<<" is: "<<i;`

```

26. break;
27. }
28. i--;
29. }
30. }

```



```

24
25 if(flag==true){
26 cout<<"Largest Prime Number Below "<<N<<" is: "<<i;
27 break;
28 }

```

Enter a Number to Check: 30  
Largest Prime Number Below 30 is: 29  
...Program finished with exit code 0  
Press ENTER to exit console.

31.

## Task 5:

```

1. #include <iostream>
2. #include <string>
3. using namespace std;
4. int main(){
5. int i, length, j, length1;
6. string letter, letter1;
7. char temp;
8. bool flag=false;
9. cout<<"Enter String 1: ";
10. cin>>letter;
11. cout<<"Enter String 2: ";
12. cin>>letter1;
13. length=letter.length();
14. length1=letter1.length();
15. if(length1==length){
16.
17. for(i=0; i<letter.length(); i++){
18. if(letter[i]==letter1[i]){
19. flag=true;

```

```

20. continue;
21. }
22. else{
23. flag=false;
24. cout<<"Both Strings are Not the Same!"<<endl;
25. break;
26. }
27. }
28. if(flag==true){
29. cout<<"Strings are Same, Updating String!"<<endl;
30. length=length-1;
31. for(i=0; i<=length/2; i++){
32. temp=letter[i];
33. letter[i]=letter[length-i];
34. letter[length-i]=temp;
35. }
36.
37. cout<<"Updated String 1: "<<letter;
38. }
39. }
40. else{
41. cout<<"Both Strings are not Equal!";
42. }
43. }

```

```

34 letter[length-i]=temp;
35 }
36
37 cout<<"Updated String 1: "<<letter;}}
38
Enter String 1: pakistan
Enter String 2: pakistan
Strings are Same, Updating String!
Updated String 1: natsikap
...Program finished with exit code 0
Press ENTER to exit console.

```

44.

## Task 6:

1. #include <iostream>
2. using namespace std;
3. int main(){

```

4. int dividend=0, divisor=1, remainder, quotient, result, count;
5. while(divisor>dividend){
6. cout<<"Dividend Must be Greater than the Divisor!"<<endl;
7. cout<<"Enter the Dividend: ";
8. cin>>dividend;
9. cout<<"Enter the Divisor: ";
10. cin>>divisor;
11. }
12. for(count=1; count<=dividend; count++){
13. remainder=dividend%divisor;
14. result=(divisor*count)+remainder;
15. if(result==dividend){
16. quotient=count;
17. break;
18. }
19. }
20. cout<<dividend<<" / "<<divisor<<" = "<<quotient<<endl;
21. if(remainder>0)
22. {
23. cout<<"The Remainder is: "<<remainder;
24. }
25. return 0;
26. }

```

```

22 {
23 cout<<"The Remainder is: "<<remainder;
24 }
25 return 0;
26 }

```

input

Dividend Must be Greater than the Divisor!

Enter the Dividend: 20

Enter the Divisor: 3

20 / 3 = 6

The Remainder is: 2

...Program finished with exit code 0

Press ENTER to exit console.

27.

## Task 7:

```

1. #include <iostream>
2. #include <string>
3. using namespace std;
4. int main(){

```

```

5. string letter, uletter;
6. int len, count, count2;
7. cout<<"Please Enter a Word: ";
8. cin>>letter;
9. uletter=letter;
10. for(count=0; count<letter.length(); count++){
11. tolower(letter[count]);
12. for(count2=count+1; count2<=letter.length(); count2++ ){
13. if(letter[count]==letter[count2]){
14. letter[count]=' ';
15. letter[count2]=' ';
16.
17. }
18. }
19. }
20. uletter="";
21. for(count=0; count<letter.length(); count++){
22. if(isspace(letter[count])){
23. continue;
24. }
25. else{
26. uletter += letter[count];
27. }
28. }
29. cout<<"New Word is: "<<uletter<<endl;
30. }

```

```

23. continue;
24. }
25. else{
26. uletter += letter[count];
27. }
28. }
29. cout<<"New Word is: "<<uletter<<endl;
30. }

```

Please Enter a Word: Hassaan  
New Word is: Han

...Program finished with exit code 0  
Press ENTER to exit console.

31.

## Task 8:

1. #include <iostream>

```

2. using namespace std;
3. int main(){
4.   int array[5]={1, 2, 3, 4, 5};
5.   int array2[5];
6.   int count, num=2, count2=5;
7.   for(count=0; count<5; count++){
8.
9.     array2[count]=array[count];
10.  }
11.
12.  while(num!= -1){
13.    cout<<"Enter Input into Array, Enter -1 to Quit!"<<endl;
14.    cin>>num;
15.    if(num== -1){
16.      break;
17.    }
18.    else{
19.
20.      array2[count2]=num;
21.      count2++;
22.    }
23.  }
24.
25.  for(count=0; count<=count2-1; count++){
26.
27.    cout<<array2[count]<<" ";
28.  }
29. }

```

```

30.
    212
Enter Input into Array, Enter -1 to Quit!
43
Enter Input into Array, Enter -1 to Quit!
12
Enter Input into Array, Enter -1 to Quit!
52
Enter Input into Array, Enter -1 to Quit!
6
Enter Input into Array, Enter -1 to Quit!
2
Enter Input into Array, Enter -1 to Quit!
6
Enter Input into Array, Enter -1 to Quit!
1329
Enter Input into Array, Enter -1 to Quit!
-1
1 2 3 4 5 212 43 12 52 6 2 6 1329
-----

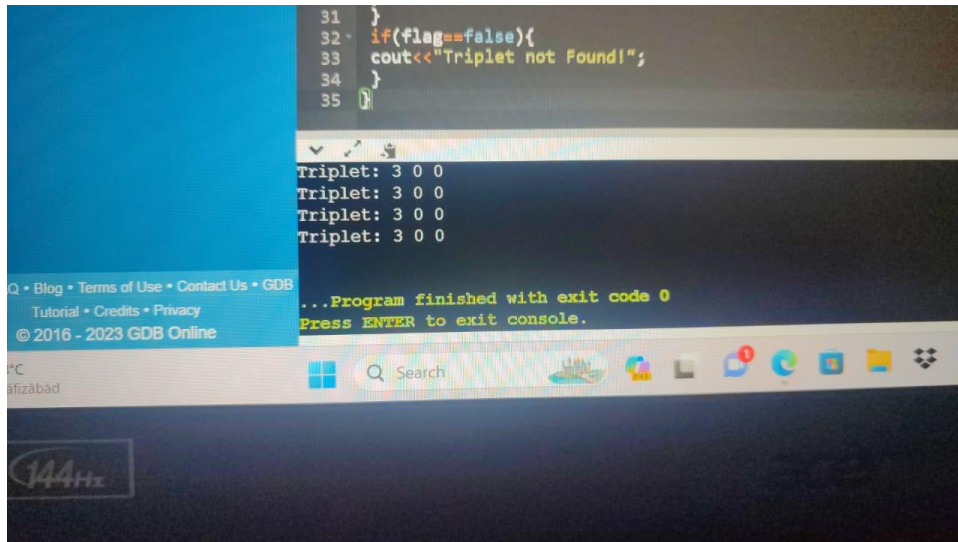
```

## Task 9:



# 1. #include <iostream>

```
2. using namespace std;
3. int main(){
4. int arr[10];
5. int X, inp=0, size, i=0;
6. bool flag=false;
7. while(inp != -1){
8. cout<<"Enter a Value for Array, Press -1 to Quit!";
9. cin>>inp;
10. if(inp==-1){
11.
12. break;
13. }
14. else{
15. arr[i]=inp;
16. i++;
17. }
18. }
19. cout<<"Enter Number for Which Triplet is Required: ";
20. cin>>X;
21. size=sizeof(arr)/sizeof(arr[0]);
22. for (i = 0; i < size - 2; ++i) {
23. for (int j = i + 1; j < size - 1; ++j) {
24. for (int k = j + 1; k < size; ++k) {
25. if (arr[i] + arr[j] + arr[k] == X) {
26. cout << "Triplet: " << arr[i] << " " << arr[j] << " " << arr[k] << endl;
27. flag=true;
28. }
29. }
30. }
31. }
32. if(flag==false){
33. cout<<"Triplet not Found!";
34. }
35. }
```



The screenshot shows a web-based IDE interface. The top part is a code editor with C++ code. The bottom part is a console window showing the program's output. The code defines a function to find a triplet in an array. The console shows four iterations of the program, each printing 'Triplet: 3 0 0'. The program ends with 'Program finished with exit code 0' and 'Press ENTER to exit console.' The interface includes a sidebar with links like 'Blog', 'Terms of Use', and 'Contact Us', and a Windows taskbar at the bottom.

```
31 }
32 if(flag==false){
33     cout<<"Triplet not Found!";
34 }
35 }
```

Triplet: 3 0 0  
Triplet: 3 0 0  
Triplet: 3 0 0  
Triplet: 3 0 0

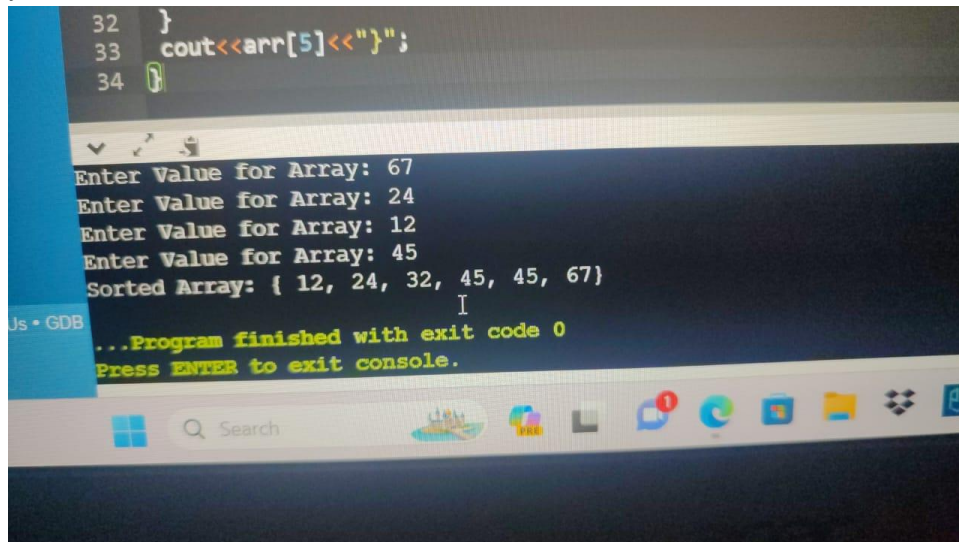
...Program finished with exit code 0  
Press ENTER to exit console.

36.

## Task 10:

1. `#include<iostream>`
2. `using namespace std;`
3. `int main(){`
4. `int arr[6];`
5. `bool sort=false;`
6. `int i,temp;`
7. `for(i=0; i<6; i++){`
8. `cout<<"Enter Value for Array: ";`
9. `cin>>arr[i];`
10. `}`
11. `while(sort==false){`
12. `for(i=0; i<6; i++){`
13. `if(arr[i]>arr[i+1]){`
14. `temp=arr[i];`
15. `arr[i]=arr[i+1];`
16. `arr[i+1]=temp;`
17. `}`
18. `}`
19. `for(i=0; i<6; i++){`
20. `if(arr[i]>arr[i+1]){`
21. `sort=false;`
22. `break;`
23. `}`
24. `else{`
25. `sort=true;`
26. `}`

```
27. }
28. }
29. cout<<"Sorted Array: { ";
30. for(i=0; i<5; i++){
31. cout<<arr[i]<<" ";
32. }
33. cout<<arr[5]<<"}";
34. }
```



The screenshot shows a C++ program being executed in a debugger (GDB). The program prompts the user to enter values for an array of size 6. The user enters 67, 24, 12, 45, 45, and 67. The program then displays the sorted array: { 12, 24, 32, 45, 45, 67}. The program finishes with exit code 0. The debugger window shows the source code with line numbers 32, 33, and 34. The console output shows the prompts and the sorted array. The taskbar at the bottom shows various application icons.

```
32 }
33 cout<<arr[5]<<"}";
34 }
```

Enter Value for Array: 67  
Enter Value for Array: 24  
Enter Value for Array: 12  
Enter Value for Array: 45  
Sorted Array: { 12, 24, 32, 45, 45, 67}  
...Program finished with exit code 0  
Press ENTER to exit console.

35.