

**FATIMAH ZINNAT WOMEN**  
**UNIVERSITY**

**“LAB MANUAL”**

**COURSE : PROGRAMMING FUNDAMENTALS LAB**

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**ROLL NO : 2021-BSE-032**

**SECTION : A**

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## LAB #2

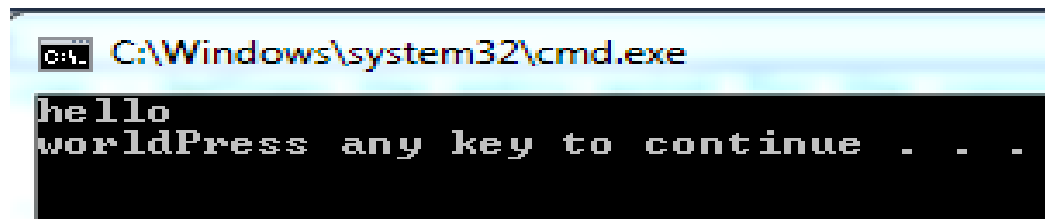
### **PROGRAM 1:**

: Defines the entry point for the console application.

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

```
int _tmain(int argc, _TCHAR* argv[])
{
    cout<<"hello"<<endl<<"world"
    ; system("pause");
    return 0;
}
```

### **OUTPUT:**




### **PROGRAM 2:**

// : Defines the entry point for the console application.

```
#include "stdafx.h"
#include<iostream>
using namespace
std;
int _tmain(int argc, _TCHAR* argv[])
{
    int a;
    int b;
    a=10
    ;
    b=20
    ;
    cout<<"a"<<a<<en
    dl;
    cout<<"b"<<b<<endl
    ; system("pause");
    return 0;
```

```
}
```

### **OUTPUT:**



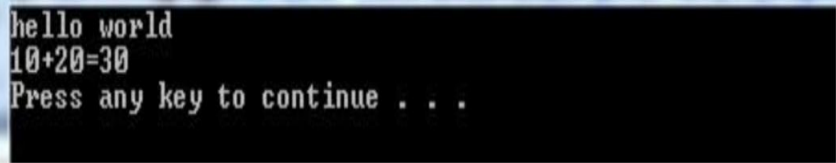
```
a=10
b=20
Press any key to continue . . .
```

### **PROGRAM 3:**

: Defines the entry point for the console application.

```
#include "stdafx.h"
#include<iostream>
using namespace
std;
int _tmain(int argc, _TCHAR* argv[])
{
    cout<<"hello
    world"<<endl; int a;
    int b;
    int c;
    a=10
    ;
    b=20
    ;
    c=a+b;
    cout<<a<<"+"<<b<<"="<<c<<endl;
    system("pause");
    return 0;
}
```

### **OUTPUT:**



```
hello world
10+20=30
Press any key to continue . . .
```

### **PROGRAM 4:**

Defines the entry point for the console application.

```
//
#include "stdafx.h"
```

```

#include<iostream>
using namespace
std;

int _tmain(int argc, _TCHAR* argv[])
{
    cout<<"My name is Tanzeela Asghar
    "<<endl; int x=18;
    cout<<"My age is "<<x<<endl;
    system("pause");
    return 0;
}

```

### **OUTPUT:**

```

My name is Tanzeela Asghar
My age is =18

[Program finished]

```

### **PROGRAM 5:**

Defines the entry point for the console application.

```

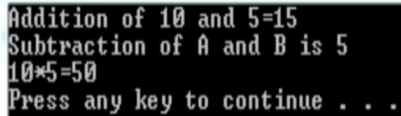
#include "stdafx.h"
#include<iostream>
using namespace
std;

int _tmain(int argc, _TCHAR* argv[])
{
    int A=10;
    int
    B=5;
    int
    x,y,z;
    x=A+B
    ;
    y=A-B;
    z=A*B;
    cout<<"Addition of "<<A<<" and
    "<<B<<="<<x<<endl; cout<<"Subtraction of A
    and B is "<<y<<endl;
    cout<<A<<"*"<<B<<="<<z<<endl;
}

```

```
    system("pause");  
    return 0;  
}
```

**OUTPUT:**



```
Addition of 10 and 5=15
Subtraction of A and B is 5
10*5=50
Press any key to continue . . .
```

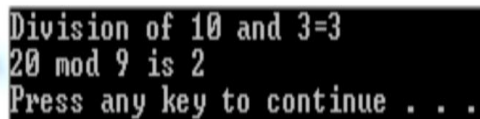
### **PROGRAM 6:**

Defines the entry point for the console application.

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

int _tmain(int argc, _TCHAR* argv[])
{
    float A=10.0;
    float
    B=3.0; int
    C=20; int
    D=9; float
    x;
    int y;
    x=A/B;
    y=C%
    D;
    cout<<"Division of "<<A<<" and
    "<<B<<=" "<<x<<endl; cout<<C<<" mod
    "<<D<<" is "<<y<<endl; system("pause");
    return 0;
}
```

### **OUTPUT:**



```
Division of 10 and 3=3
20 mod 9 is 2
Press any key to continue . . .
```

### **PROGRAM 7:**

Defines the entry point for the console application.

```
#include "stdafx.h"
#include
<iostream> using
```

```
namespace std;
```

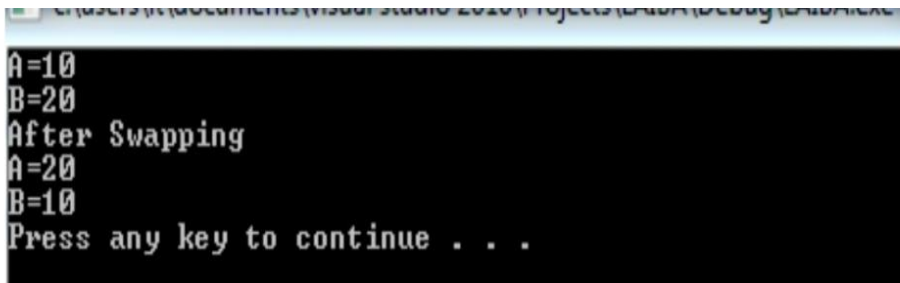
```
int _tmain(int argc, _TCHAR* argv[])
```

```

{
    int A=10, B=20,
    C; C=A;
    A=B
    ;
    B=C
    ;
    cout<<"A=10"<<endl;
    cout<<"B=20"<<endl;
    cout<<"After
    Swapping"<<endl;
    cout<<"A="<<A<<endl;
    cout<<"B="<<B<<endl;
    system("pause");
    return 0;
}

```

### **OUTPUT:**



A screenshot of a terminal window showing the output of a C++ program. The output is as follows:

```

A=10
B=20
After Swapping
A=20
B=10
Press any key to continue . . .

```

## **LAB #3**

### **PROGRAM 1:**

```

#include
"stdafx.h"
#include
<iostream> using
namespace std;

int _tmain(int argc, _TCHAR* argv[])
{
    int a=5;
    cout<<a<<end
    l;

```



```
    cout<<a*4<<e  
    ndl;  
    cout<<a*6<<e  
    ndl;  
    cout<<a*5<<e  
    ndl;  
    system("pause  
"); return 0;  
}
```

**OUTPUT:**



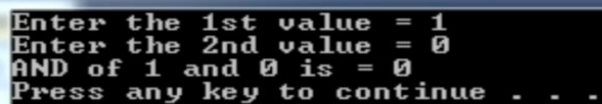
```
5
20
30
25
Press any key to continue . . .
```

## **PROGRAM 2:**

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

int _tmain(int argc, _TCHAR* argv[])
{
    int a,b,c;
    cout<<"Enter the 1st
value = "; cin>>a;
    cout<<"Enter the 2nd
value = "; cin>>b;
    c=a&&b;
    cout<<"AND of 1 and 0 is =
"<<c<<endl; system("pause");
    return 0;
}
```

## **OUTPUT:**



```
Enter the 1st value = 1
Enter the 2nd value = 0
AND of 1 and 0 is = 0
Press any key to continue . . .
```

## **PROGRAM 3:**

```
#include
"stdafx.h"
#include
```

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

```
int _tmain(int argc, _TCHAR* argv[])  
{  
    cout<<"A B  X"<<endl;
```

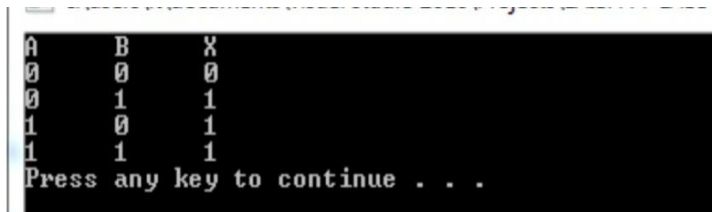
```

        cout<<"0 0  "<<(0||0)<<endl;
        cout<<"0 1  "<<(0||1)<<endl;
        cout<<"1 0  "<<(1||0)<<endl;
        cout<<"1 1  "<<(1||1)<<endl;

        system("pause");
        return 0;
}

```

### **OUTPUT:**



```

A    B    X
0    0    0
0    1    1
1    0    1
1    1    1
Press any key to continue . . .

```

### **PROGRAM 4:**

```

#include
"stdafx.h"
#include
<iostream> using
namespace std;

int _tmain(int argc, _TCHAR* argv[])
{
    int S1, S2, S3, S4, S5, totalmarks,
    percent; cout<<"Enter the
    Marks:"<<endl; cout<<"1st Subject
    = ";
    cin>>S1;
    cout<<"2nd Subject
    = "; cin>>S2;
    cout<<"3rd Subject
    = "; cin>>S3;
    cout<<"4th Subject
    = "; cin>>S4;

```

```
cout<<"5th Subject = ";
cin>>S5;
totalmarks=S1+S2+S3+S4
+S5;
cout<<"Total Marks = 500"<<endl;
cout<<"Marks Obtained =
"<<totalmarks<<endl;
percent=(totalmarks*100)/500;
cout<<"Percentage =
"<<percent<<"%"<<endl;

system("pause"); return 0;
```

}

## **OUTPUT:**

```
Enter the Marks:
1st Subject = 88
2nd Subject = 79
3rd Subject = 84
4th Subject = 89
5th Subject = 90
Total Marks = 500
Marks Obtained = 430
Percentage = 86%
Press any key to continue . . .
```

## **PROGRAM 5:**

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

int _tmain(int argc, _TCHAR* argv[])
{
    float C,F;
    cout<<"Enter the temperature in
    Fahrenhite = "; cin>>F;
    C=(F-32.0)/1.8;
    cout<<"Temperature in Celcius is
    "<<C<<endl; system("pause");
    return 0;
}
```

## **OUTPUT:**

```
Enter the temperature in Fahrenhite = 87
Temperature in Celcius is 30.5556
Press any key to continue . . .
```

## **PROGRAM 6:**

```
#include
"stdafx.h"
```

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

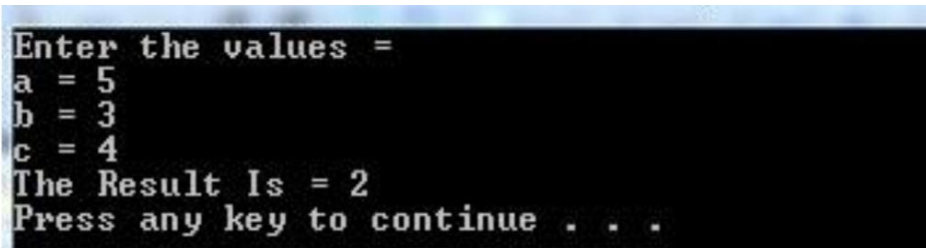
```
int _tmain(int argc, _TCHAR* argv[])
```

```

{
    int a,b,c,x;
    cout<<"Enter the values =
    "<<endl; cout<<"a = ";
    cin>>a;
    cout<<"b =
    "; cin>>b;
    cout<<"c =
    "; cin>>c;
    x=((-b)+(b*b)+(4*a*c))/(2*a*c);
    cout<<"The Result Is =
    "<<x<<endl; system("pause");
    return 0;
}

```

### **OUTPUT:**



```

Enter the values =
a = 5
b = 3
c = 4
The Result Is = 2
Press any key to continue . . .

```

### **PROGRAM 7:**

```

#include
"stdafx.h"
#include
<iostream> using
namespace std;

int _tmain(int argc, _TCHAR* argv[])
{
    int num, sum;
    cout<<"Enter the four digit number
    = "; cin>>num;
    int digit1, digit2, digit3,
    digit4; digit1= num%10;
    num=num/10;
    digit2=

```



```
num%10;  
num=num/10;  
digit3=  
num%10;  
num=num/10;  
digit4=  
num%10;  
num=num/10;
```

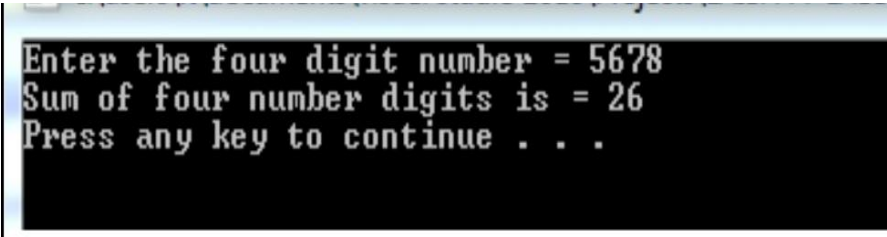
```

sum= digit1+digit2+digit3+digit4;

cout<<"Sum of four number digits is = "<<sum<<endl;
system("pause");
return 0;
}

```

### **OUTPUT:**



```

Enter the four digit number = 5678
Sum of four number digits is = 26
Press any key to continue . . .

```

## **LAB #4**

### **PROGRAM 1;**

```

#include
"stdafx.h"
#include
<iostream> using
namespace std;

int _tmain(int argc, _TCHAR* argv[])
{
cout<<"use of if else
statement"<<endl; int a,b;
cout<<"enter 1st number
?"<<endl; cin>>a;
cout<<"enter second
number?"<<endl; cin>>b;
if(a>b)
{cout<<a<<" is greater than
"<<b<<endl; } else
cout<<b<<" is greater than "<<a<<endl;
system("pause");
return 0;
}

```

**OUTPUT:**

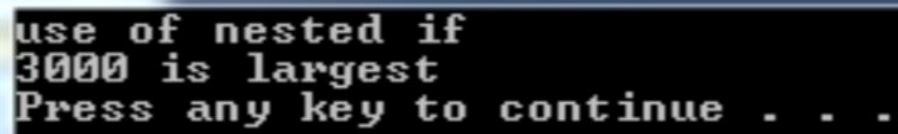
```
use of if else statement
enter 1st number ?
4
enter second number?
7
7 is greater than 4
Press any key to continue . . .
```

## **PROGRAM 2:**

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

int _tmain(int argc, _TCHAR* argv[])
{
    cout<<"use of nested
    if"<<endl; int
    a=100,b=200,c=3000;
    if(a>b)
    {
        if(a>c)
        cout<<a<<" is largest
        "<<endl;PUT else if (c>b)
        cout<<c<<" is largest"<<endl;
    }
    else
    {
        if (b>c)
        cout<<b<<" is
        largest"<<endl; else
        cout<<c<<" is largest"<<endl;
    }
    system("paus
    e"); return 0;
}
```

**OUTPUT:**

A screenshot of a terminal window with a black background and white text. The text is displayed in three lines: 'use of nested if', '3000 is largest', and 'Press any key to continue . . .'.

```
use of nested if
3000 is largest
Press any key to continue . . .
```

**PROGRAM 3:**

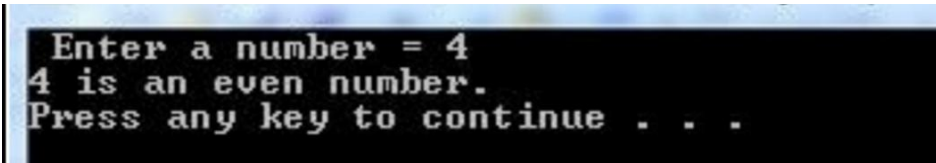
```

#include
"stdafx.h"
#include
<iostream> using
namespace std;

int _tmain(int argc, _TCHAR* argv[])
{
int x;
cout<<" Enter a number
= "; cin>>x;
if (x%2==0)
    cout<<x<<" is an even number."<<endl;
else
    cout<<x<<" is an odd number. "<<endl;
system("paus
e"); return 0;
}

```

### **OUTPUT:**



```

Enter a number = 4
4 is an even number.
Press any key to continue . . .

```

### **PROGRAM 4:**

```

#include
"stdafx.h"
#include
<iostream> using
namespace std;

int _tmain(int argc, _TCHAR* argv[])
{
int a, b, c;
cout<<"Enter 1st value =
"; cin>>a;
cout<<"Enter 2nd value

```

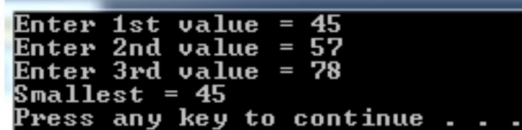
```
= "; cin>>b;  
cout<<"Enter 3rd value =  
"; cin>>c;  
if (a<c)  
{  
if (a<b)  
cout<<"Smallest = "<<a<<endl;
```

```

else if (c<b)
cout<<"Smallest = "<<c<<endl;
}
else
{
if (b<c)
cout<<"Smallest = 
"<<b<<endl; else
cout<<"Smallest = "<<c<<endl;
}
system("paus
e"); return 0;
}

```

### **OUTPUT:**



```

Enter 1st value = 45
Enter 2nd value = 57
Enter 3rd value = 78
Smallest = 45
Press any key to continue . . .

```

### **PROGRAM 5:**

```

#include
"stdafx.h"
#include
<iostream> using
namespace std;

int _tmain(int argc, _TCHAR* argv[])
{
int a, b, c, d;
cout<<"Enter 1st value = 
"; cin>>a;
cout<<"Enter 2nd value 
= "; cin>>b;
cout<<"Enter 3rd value = 
"; cin>>c;
cout<<"Enter 4th value = 
"; cin>>d;
if ((a>b)&&(a>c)&&(a>d))

```



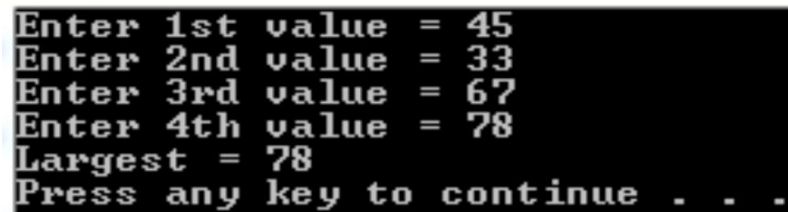
```
    cout<<"Largest =  
    "<<a<<endl;  
else if ((b>a)&&(b>c)&&(b>d))  
    cout<<"Largest =  
    "<<b<<endl;  
else if ((c>a)&&(c>b)&&(c>d))
```

```

        cout<<"Largest =
"<<c<<endl; else
        cout<<"Largest = "<<d<<endl;
system("pause");
return 0;
}

```

### **OUTPUT:**



```

Enter 1st value = 45
Enter 2nd value = 33
Enter 3rd value = 67
Enter 4th value = 78
Largest = 78
Press any key to continue . . .

```

### **PROGRAM 6:**

```

#include
"stdafx.h"
#include
<iostream> using
namespace std;

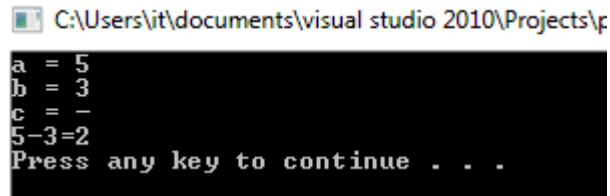
int _tmain(int argc, _TCHAR* argv[])
{
    int a,
    b;
    char
    c;
    cout<<"a =
"; cin>>a;
    cout<<"b =
"; cin>>b;
    cout<<"c =
"; cin>>c;
    if (c=='+')
        cout<<a<<"+"<<b<<"="<<(a+b)<<
endl; else if (c=='-')
        cout<<a<<"-"<<b<<"="<<(a-b)<<e

```

```
endl; else if (c=='*')
    cout<<a<<"*"<<b<<"="<<(a*b)<
<endl; else if (c=='/')
    cout<<a<<"/"<<b<<"="<<(a/b)<<endl;
else
    cout<<" Invalid "<<endl;
system
("pause");
return 0;
```

```
}
```

## **OUTPUT:**



```
C:\Users\it\documents\visual studio 2010\Projects\p
a = 5
b = 3
c = -
5-3=2
Press any key to continue . . .
```

## **PROGRAM 7:**

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

int _tmain(int argc, _TCHAR* argv[])
{
    int a, b, c, sum;
    cout<<"Enter the values =
    "<<endl; cout<<"a = ";
    cin>>a;
    cout<<"b =
    "; cin>>b;
    cout<<"c =
    "; cin>>c;
    sum=a+b+
    c; if
    (sum==180
    )
        cout<<"Valid"<<endl;
    else
        cout<<"Invalid"<<endl;
    system
    ("pause");
    return 0;
}
```

C:\Users\it\documents\visual studio 2010\Projec

```
Enter the values =  
a = 78  
b = 46  
c = 45  
Invalid  
Press any key to continue . . .
```

**OUTPUT:**

**PROGRAM 8:**

```

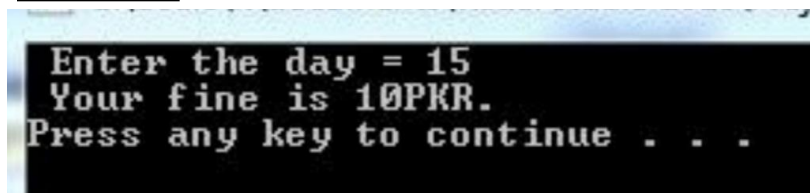
#include
"stdafx.h"
#include
<iostream> using
namespace std;

int _tmain(int argc, _TCHAR* argv[])
{
    int days;
    cout<<" Enter the day
    = "; cin>>days;
    if ((days>=1)|| (days<=7))
        cout<<" Your fine is
    10PKR."<<endl; else if
    ((days>=8)|| (days<=14))
        cout<<" Your fine is
    20PKR."<<endl; else if
    ((days>=15)|| (days<=31))
        cout<<" Your fine is 50PKR."<<endl;
    else
        cout<<" Your membership is cancelled."<<endl;

    system
    ("pause");
    return 0;
}

```

### **OUTPUT:**



**LAB #5**

### **PROGRAM 1:**

```

#include

```

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

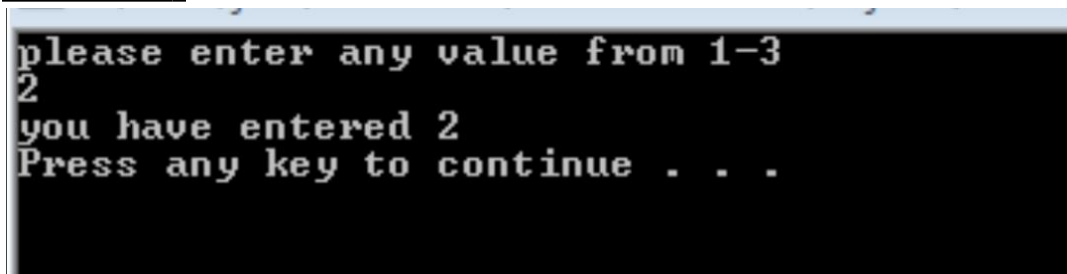
int _tmain(int argc, _TCHAR* argv[])
{
    int a;
    cout<<"please enter any value from 1-3 "<<endl;
```

```

cin>>a
;
switch(
a)
{
case 1:
cout<<"you have entered
1"<<endl; break;
case 2:
cout<<"you have entered
2"<<endl; break;
case 3:
cout<<"you have entered
3"<<endl; break;
default :
cout<<"you have entered other number from 1-3"<<endl;
}
system("pause");
return 0;
}

```

### **OUTPUT:**



```

please enter any value from 1-3
2
you have entered 2
Press any key to continue . . .

```

### **PROGRAM 2:**

```

#include
"stdafx.h"
#include
<iostream> using
namespace std;

int _tmain(int argc, _TCHAR* argv[])
{
int a,

```



```
b;  
char  
c;  
cout<<"Enter 1st value  
= "; cin>>a;  
cout<<"Enter 2nd value  
= "; cin>>b;  
cout<<"Enter operator = ";
```

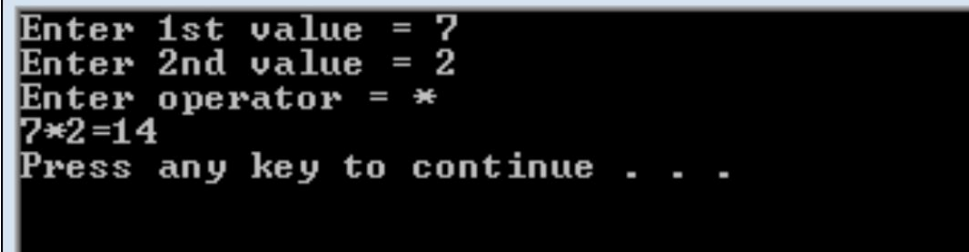
```

cin>>c;
switch (c)
{
case '+':
    cout<<a<<"+"<<b<<"="<<(a+b)<<
    <endl; break;
case '-':
    cout<<a<<"-"<<b<<"="<<(a-b)<<
    endl; break;
case '*':
    cout<<a<<"*"<<b<<"="<<(a*b)<<
    <endl; break;
case '/':
    cout<<a<<"/"<<b<<"="<<(a/b)<<
    endl; break;

default:
    cout<<"Invalid"<<endl;
}
system("pause");
return 0;
}

```

### **OUTPUT:**



```

Enter 1st value = 7
Enter 2nd value = 2
Enter operator = *
7*2=14
Press any key to continue . . .

```

### **PROGRAM 3:**

```

#include
"stdafx.h"
#include
<iostream> using
namespace std;

int _tmain(int argc, _TCHAR* argv[])
{

```

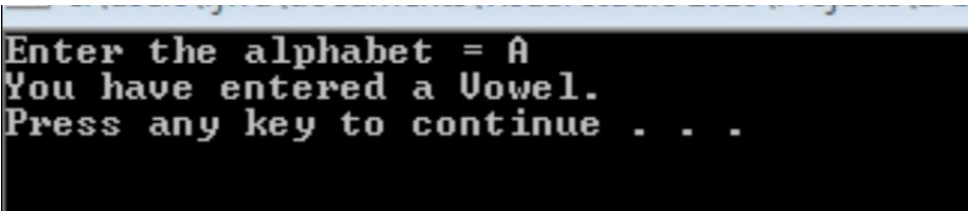
```
char x;  
cout<<"Enter the alphabet  
= "; cin>>x;
```

```

switch (x)
{
case'a':
case'A':
case'e':
case'E':
case'i':
case'I':
case'o':
case'O':
case'u':
case'U':
    cout<<"You have entered a
    Vowel."<<endl; break;
default:
    cout<<"You have entered a Constant."<<endl;
}
system("pause");
return 0;
}

```

### **OUTPUT:**



```

Enter the alphabet = A
You have entered a Vowel.
Press any key to continue . . .

```

### **PROGRAM 4:**

```

#include
"stdafx.h"
#include
<iostream> using
namespace std;

int _tmain(int argc, _TCHAR* argv[])
{
cout<<"use of while
loop"<<endl; int i=0;

```

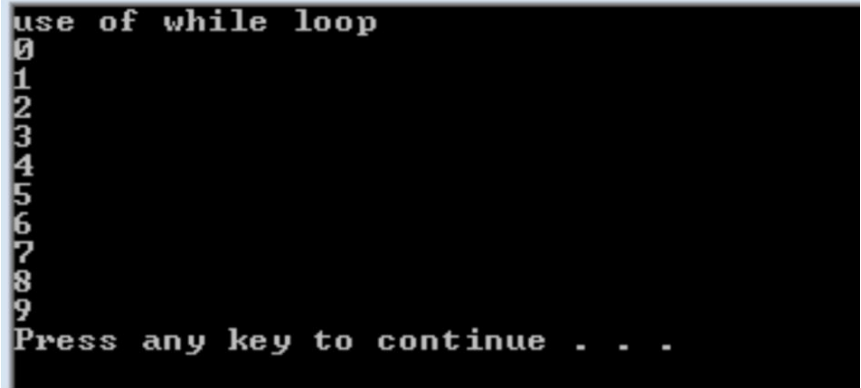
```
while(i<10)
{
cout<<i<<endl;
```

```

i++; // i=i+1
}
system("pause");
return 0;
}

```

### **OUTPUT:**



```

use of while loop
0
1
2
3
4
5
6
7
8
9
Press any key to continue . . .

```

### **PROGRAM 5:**

```

#include
"stdafx.h"
#include
<iostream> using
namespace std;

int _tmain(int argc, _TCHAR* argv[])
{
cout<<"use of do
while"<<endl; int i=20;
do
{
cout<<i<<endl;
i--;
}
while(i>0);
system("paus
e"); return 0;
}

```

### **OUTPUT:**

```
use of do while
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
Press any key to continue . . .
```

### **PROGRAM 6:**

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

int _tmain(int argc, _TCHAR* argv[])
{
int x=2;
while(x<=1
0)
{
    cout<<x<<en
    dl; x+=2;
}
system("paus
e"); return 0;
}
```

### **OUTPUT:**

```
2
4
6
8
10
Press any key to continue . . .
```

### **PROGRAM 7:**

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

int _tmain(int argc, _TCHAR* argv[])
{
int x;
cout<<"Enter the value of x
= "; cin>>x;
int
y=1;
do
{
cout<<x<<"*"<<y<<"="<<(x*y)<
<endl; y++;
}
while(y<=12);
system("paus
e"); return 0;
}
```

### **OUTPUT:**



Enter the value of x = 3

3\*1=3

3\*2=6

3\*3=9

3\*4=12

3\*5=15

3\*6=18

3\*7=21

3\*8=24

3\*9=27

3\*10=30

3\*11=33

3\*12=36

Press any key to continue . . .