Bahria University,

Karachi Campus

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Discovering Knowledge

COURSE: CSC-113 COMPUTER PROGRAMMING
TERM: SPRING 2020, CLASS: BCE- 2A

Submitted By:

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Submitted To:

Dr.Rizwan Iqbal/ Engr. Sidra Mudassar

Signed **Remarks:** **Score:**

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SNO	DATE	LAB NO	LAB OBJECTIVE	SIGN
		1	PROBLEM SOLVING & INTRODUCTION OF C++	

SNO	DATE	LAB NO	LAB OBJECTIVE	SIGN

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LAB EXPERIMENT NO.

__01__

LIST OF TASKS

TASK NO	OBJECTIVE
1	PROBLEM SOLVING & INTRODUCTION OF C++

Write an Algorithm, Pseudo Code and Draw Flow Chart of the following problems.

Task No. 1: Find whether the sum of two numbers is greater than 50

Solution:

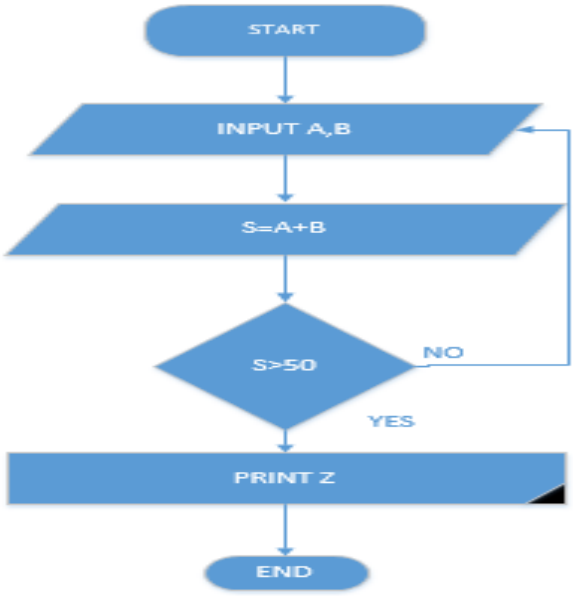
ALGORITHM

- START
- INPUT A, B
- SUM=A+B >50
- PRINT SUM
- END

PSEUDO CODE

- INPUT A, B
- Z→ A+B
- Z>50
- PRINT Z

FLOWCHART



Task No. 2: Find the volume of the rectangular box. Note: volume = *lwh*

Solution:

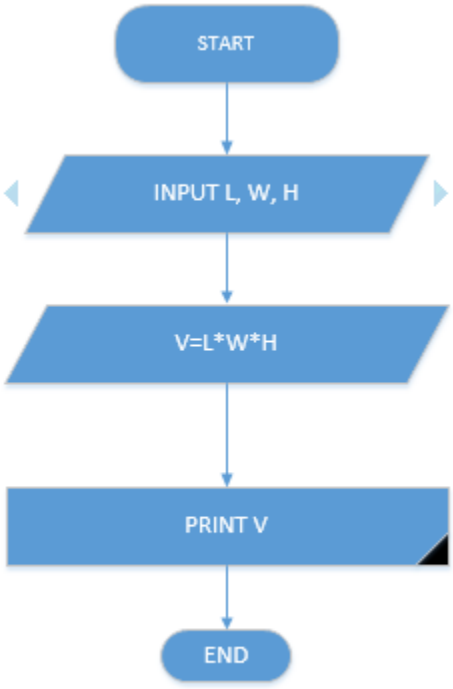
ALGORITHM

- START
- INPUT L, W, H
- VOLUME=L*W*H
- PRINT VOLUME
- END

PSEUDO CODE

- INPUT L, W, H
- V→L*W*H
- PRINT V

FLOW CHART



Task No. 3: Find the value of A such that A = (4x – 3y) / 2z

Solution:

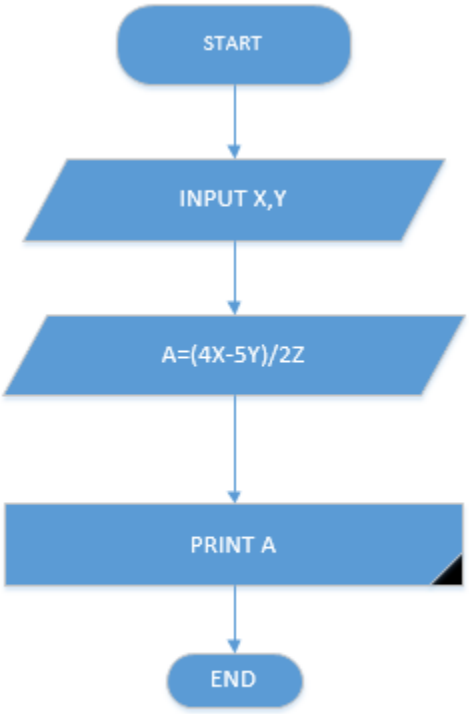
ALGORITHM

- START
- INPUT X,Y
- A=(4x-3y)/2z
- PRINT Z
- END

PSEUDO CODE

- INPUT X, Y
- A→(4X-3Y)/2Z
- PRINT A

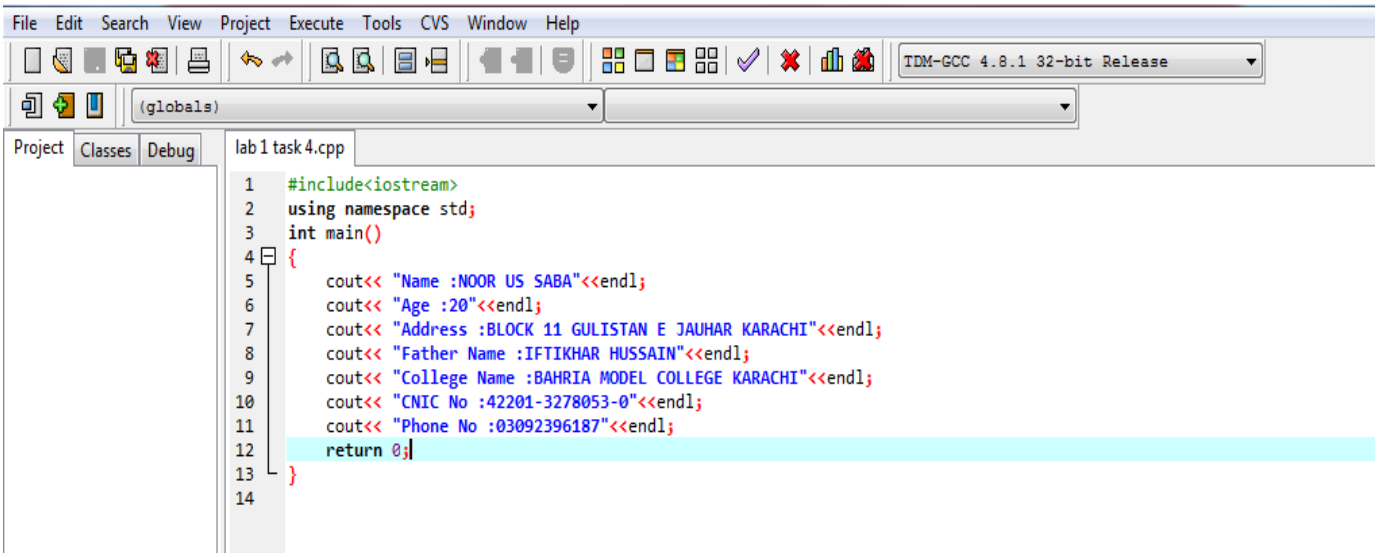
FLOW CHART



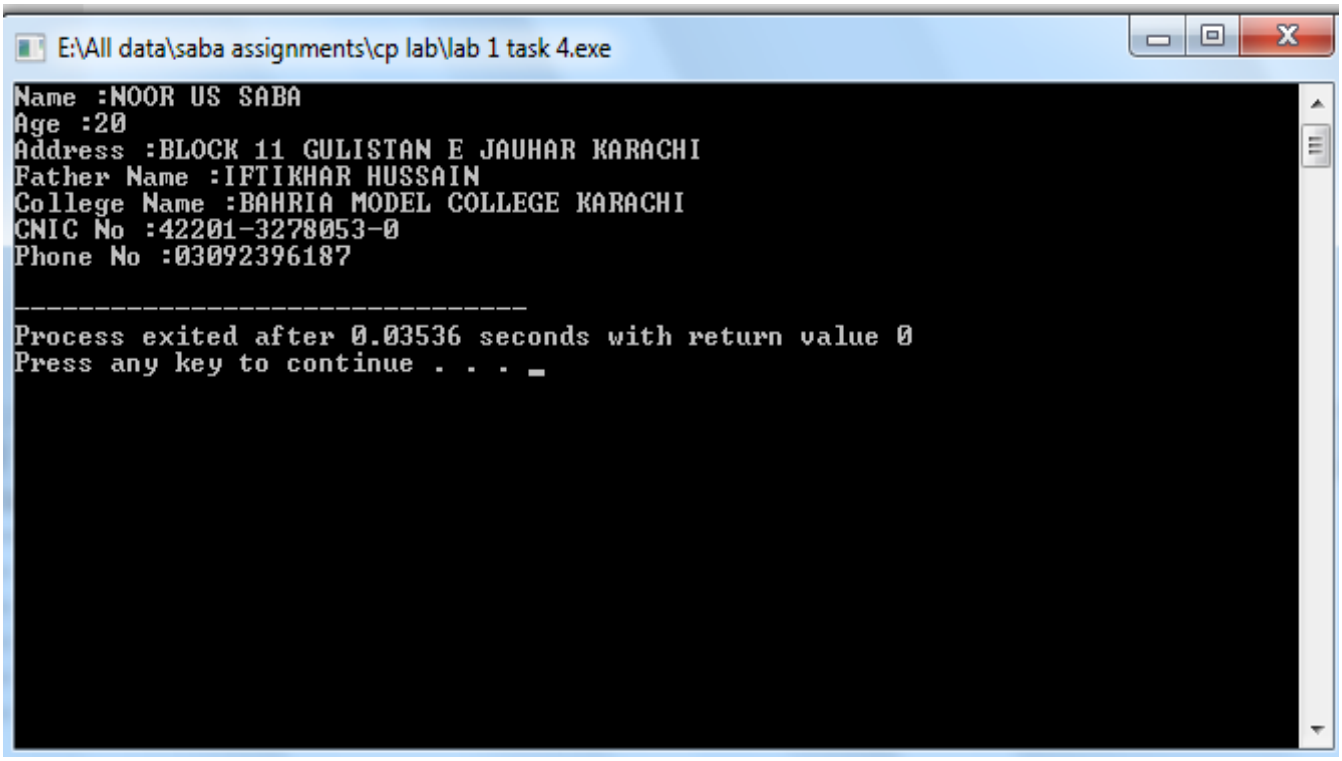
Task No. 4: Write a program to display your personal information. (Name, age, address, father's name, college name, NIC, phone number etc.)

Solution:

CODING:



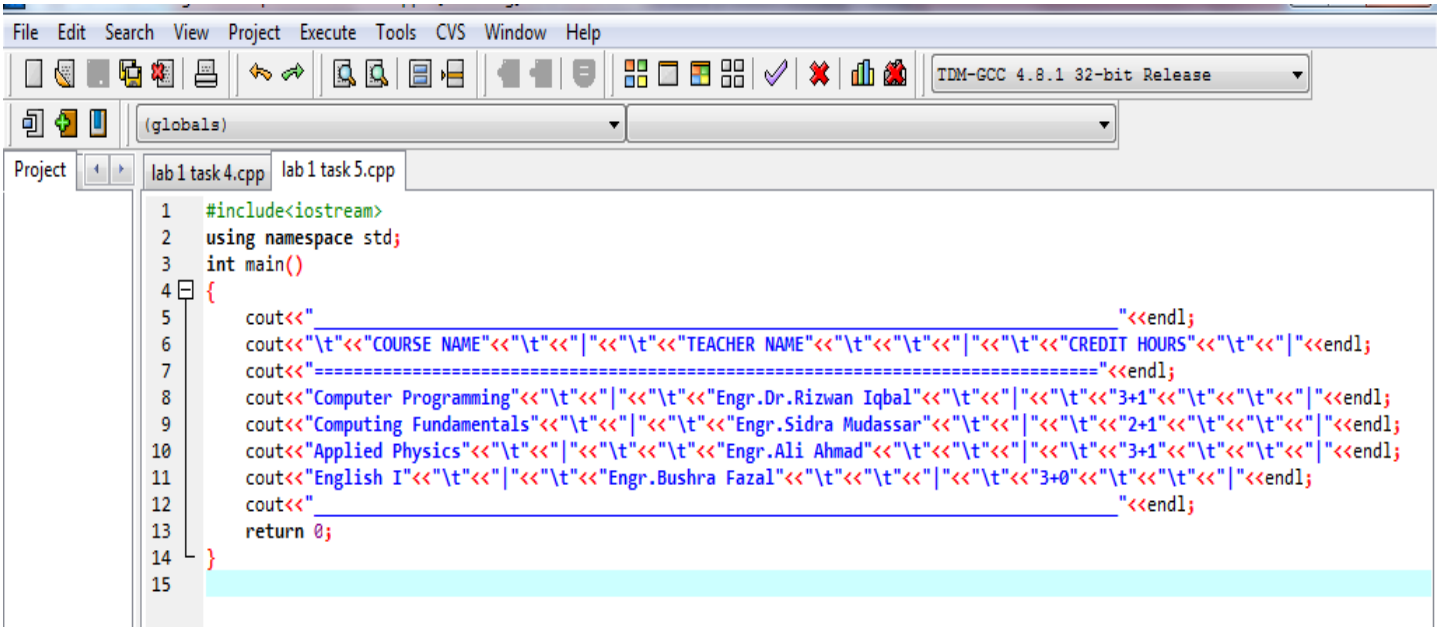
PREVIEW:



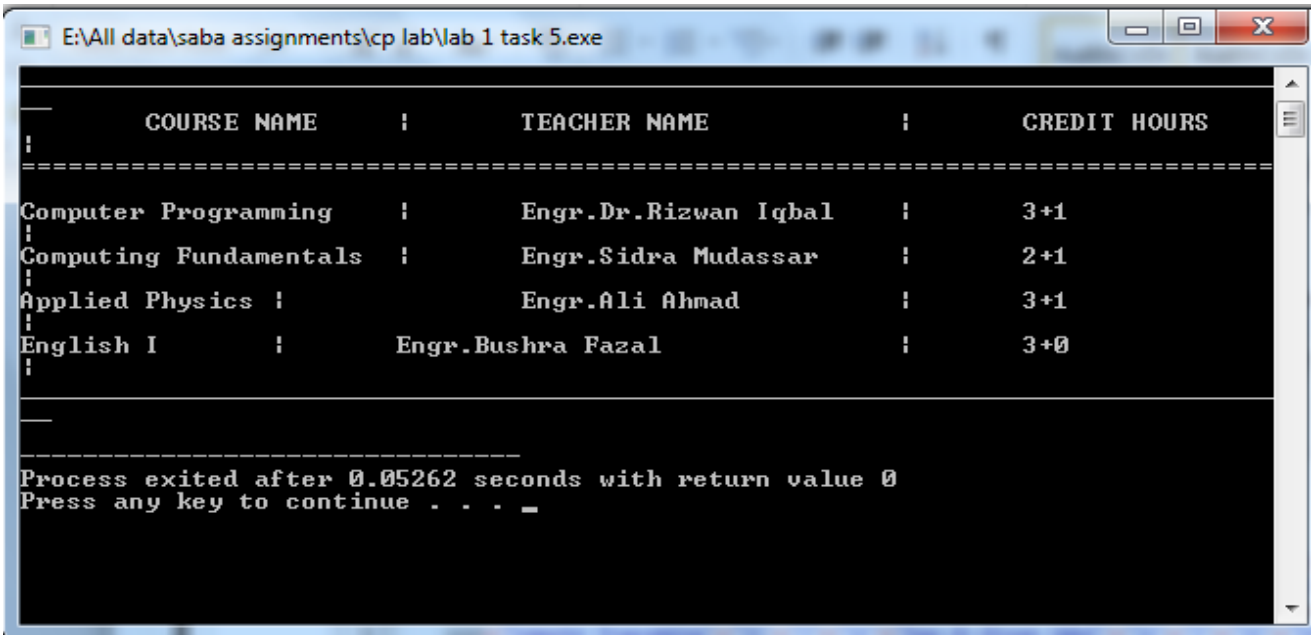
Task No. 5:Write a program to display your semester courses along with teacher name and credit hour.

Solution:

CODING:



PREVIEW:



Task No. 6: Write a program that prints a mosque:

Solution:

CODING:

[*] 11.cpp

```
#include<iostream>
using namespace std;
main()
{
     cout<<" ^                ^                ^"<<endl;
     cout<<"/|\\              /|\\              /|\\"<<endl;
     cout<<"((&))          .((^)).          ((&))"<<endl;
     cout<<"|.|          ((((^))))           |.|"<<endl;
     cout<<"|.|        (((((^)))))           |.|"<<endl;
     cout<<"|.|      ((((((^))))))           |.|"<<endl;
     cout<<"|.|        (((((^)))))           |.|"<<endl;
     cout<<"|.|          ((((^))))           |.|"<<endl;
     cout<<"{.....................................}"<<endl;
     cout<<"'|'''''''''''''''''''''''''''''''''''|'"<<endl;
     cout<<"|                    _                |"<<endl;
     cout<<"|                  _{#}_              |"<<endl;
     cout<<"|    ____        {######}      ____   |"<<endl;
     cout<<"|   |###|      {########}     |###|  |"<<endl;
     cout<<"|   |###|      {########}     |###|  |"<<endl;
     cout<<"|   =====      {########}     =====  |"<<endl;
     cout<<"|              {########}             |"<<endl;
     cout<<"|              {########}             |"<<endl;
     cout<<"|             _{########}_            |"<<endl;
     cout<<"-------------------------------------"<<endl;


}
```

PREVIEW:

```
C:\Users\92308\Documents\11.exe
 ^                ^                ^
/|\              /|\              /|\
((&))          .((^)).          ((&))
|.|          ((((^))))           |.|
|.|        (((((^)))))           |.|
|.|      ((((((^))))))           |.|
|.|        (((((^)))))           |.|
|.|          ((((^))))           |.|
{.....................................}
'|'''''''''''''''''''''''''''''''''''|'
|                    _                |
|                  _{#}_              |
|    ____        {######}      ____   |
|   |###|      {########}     |###|  |
|   |###|      {########}     |###|  |
|   =====      {########}     =====  |
|              {########}             |
|              {########}             |
|             _{########}_            |
-------------------------------------

--------------------------------
Process exited after 0.1215 seconds with return value 0
Press any key to continue . . .
```

Task No. 1: Write a C++ program that finds the (add, sub, divide, multiple) two integers. The two integers should be taken as input from the user. At the end, display the numbers that are input by the user and their sum with proper cout statements.

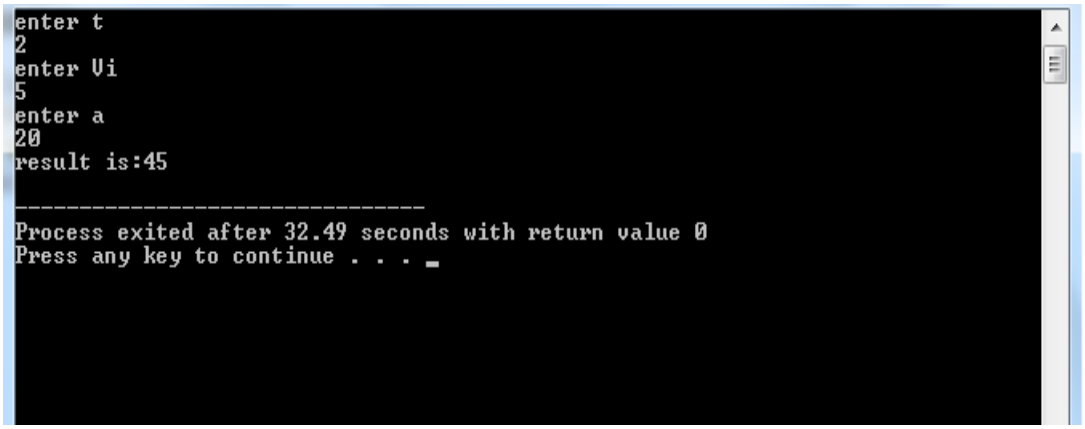
```
int main()
{
    int num1;
    int num2;
    int res;
    cout<<"enter no 1"<<endl;
    cin>>num1;
    cout<<"enter no 2"<<endl;
    cin>>num2;
    res = num1+num2;
    cout<<"result is:"<<res<<endl;
    res=num1-num2;
    cout<<"result is:"<<res<<endl;
    res=num1*num2;
    cout<<"result is:"<<res<<endl;
    res=num1/num2;
    cout<<"result is:"<<res<<endl;
    return 0;
}
```

```
enter no 1
10
enter no 2
5
result is:15
result is:5
result is:50
result is:2

--------------------------------
Process exited after 7.69 seconds with return value 0
Press any key to continue . . .
```

Task No. 2: Write a program and print the output of first equation of the motion. For values take input from user.

```cpp
using namespace std;
int main()
{
    int t;
    int Vi;
    int a;
    int Vf;
    cout<<"enter t"<<endl;
    cin>>t;
    cout<<"enter Vi"<<endl;
    cin>>Vi;
    cout<<"enter a"<<endl;
    cin>>a;
    Vf=Vi+a*t;
    cout<<"result is:"<<Vf<<endl;
    return 0;
}
```



Task No. 3: Write a program that prompt user to input course name, obtained marks and total marks. Calculate the percentage using this formula

marks percentage = marks obtained / total * 100

and display the results.

```cpp
using namespace std;
int main()
{
    char course_name[50]; int obtained_marks ,total_marks ,percentage;
    cout<<"Enter Course Name:";
    cin>>course_name;
    cout<<"Obtained Marks:";
    cin >>obtained_marks;
    cout<<"Total Marks:";
    cin>>total_marks;
    percentage=obtained_marks*100/total_marks;
    cout<<"In "<<"<"<<course_name<<">"<<"You have secured "<<percentage<<"%"<<endl;
    return 0;
}
```

```
Enter Course Name: Fundaments_Programming
Obtained Marks: 93
Total Marks: 100
In <Fundaments_Programming>You have secured 93%

--------------------------------
Process exited after 25.18 seconds with return value 0
Press any key to continue . . .
```

Task No. 4: Write a program that finds the value of X by using given formula. Take value of a and b from user.

X= (a + b)2 – 2ab

```cpp
#include<iostream>
using namespace std;
int main()
{
    int a;
    int b;
    int X;
    cout<<"enter value a"<<endl;
    cin>>a;
    cout<<"enter value b"<<endl;
    cin>>b;
    X=(a+b)*2-2*a*b;
    cout<<"result is:"<<X<<endl;
    return 0;
}
```

```
enter value a
7
enter value b
6
result is:-58

--------------------------------
Process exited after 2.363 seconds with return value 0
Press any key to continue . . .
```

Task No. 5: Display the following results and take value of a, b, c, d, e, and f from user.

(((b + 3) *(4 a c)) / d) * (((a * c) + (b * d)) * f)

```cpp
#include<iostream>
using namespace std;
int main()
{
    int a,b,c,d,e,f,G;
    cout<<"enter a"<<endl;
    cin>>a;
    cout<<"enter b"<<endl;
    cin>>b;
    cout<<"enter c"<<endl;
    cin>>c;
    cout<<"enter d"<<endl;
    cin>>d;
    cout<<"enter e"<<endl;
    cin>>e;
    cout<<"enter f"<<endl;
    cin>>f;
    G=(((b+3)*(4*a*c)/d)*((a*c)+(b*d))*f);
    cout<<"result is:"<<G<<endl;
    return 0;
}
```

```
2
enter b
3
enter c
4
enter d
5
enter e
6
enter f
7
result is:6118

--------------------------------
Process exited after 8.434 seconds with return value 0
Press any key to continue . . .
```

Task No. 6: Calculate the quadratic equation by using three user given integer variables.

```cpp
#include<iostream>

#include <cmath>>
using namespace std;
int main()
{
    double a,b,c;
    cout<<"Enter the coefficients starting with a then b then c"<<endl;
    cin>>a>>b>>c;
    if(a==0.0){
        cout<<"UNDEFINED"<<endl;
        return 1;
    }
    double x1,x2;
    x1=(-b-sqrt((b*b)-4*a*c))/(2*a);
    x2=(-b-sqrt((b*b)-4*a*c))/(2*a);

    cout<<endl<<"the roots are x1="<<x1<<"and x2="<<x2<<endl;


    return 0;
}
```

```
Enter the coefficients starting with a then b then c
3
-6
3

the roots are x1=1and x2=1

--------------------------------
Process exited after 9.161 seconds with return value 0
Press any key to continue . . .
```

```
Enter the coefficients starting with a then b then c
3
5
2

the roots are x1=-1and x2=-1

--------------------------------
Process exited after 5.824 seconds with return value 0
Press any key to continue . . .
```

Task No. 7: Write a program and print the output of second equation of the motion. For values take input from user.

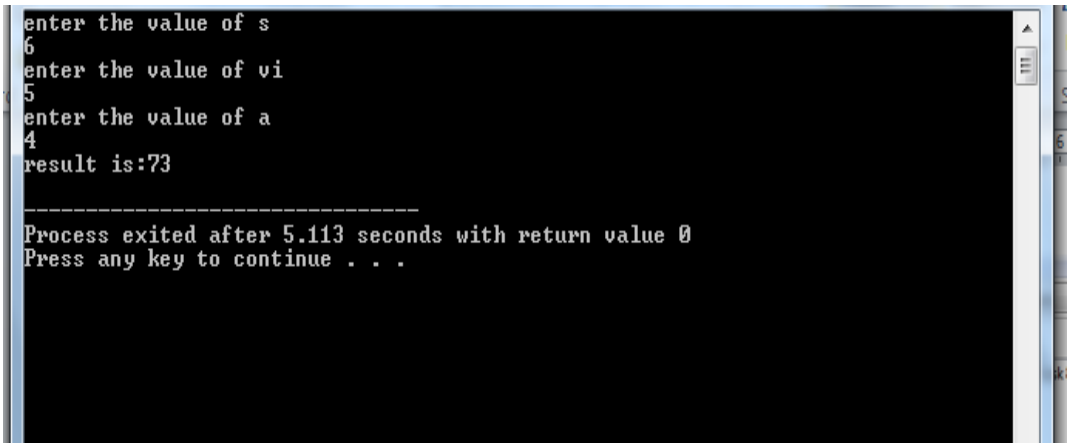
```cpp
#include <iostream>
using namespace std;
int main()
{
    int t;
    int vi;
    int a;
    int s;
    cout<<"enter the value of t"<<endl;
    cin>>t;
    cout<<"enter the value of vi"<<endl;
    cin>>vi;
    cout<<"enter the value of a"<<endl;
    cin>>a;
    s=(vi*t)+1/2*a*t*t;
    cout<<"result is:"<<s<<endl;
    return 0;
}
```

```
enter the value of t
9
enter the value of vi
8
enter the value of a
7
result is:72

--------------------------------
Process exited after 3.011 seconds with return value 0
Press any key to continue . . .
```

Task No. 8: Write a program and print the output of third equation of the motion. For values take input from user.

```cpp
#include <iostream>
using namespace std;
int main()
{
    int s;
    int vi;
    int a;
    int vf;
    cout<<"enter the value of s"<<endl;
    cin>>s;
    cout<<"enter the value of vi"<<endl;
    cin>>vi;
    cout<<"enter the value of a"<<endl;
    cin>>a;
    vf=vi*vi+2*a*s;
    cout<<"result is:"<<vf<<endl;
    return 0;
}
```



COMPUTER PROGRAMMING LAB 3

Bahria University,

Karachi Campus

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Discovering Knowledge

COURSE: CSC -113 Computing Programming lab
TERM: SPRING 2020, CLASS: BCE- 2A

NAME = MUHAMMMAD UMAIR **ENROLMENT NO: (02-132192-004)**

Submitted By:

Eng sidra Mudassar
Submitted To:

COMPUTER PROGRAMMING LAB 3

Task lab 3:

1. **Make a logic to recognize if the number is even or odd?**
2. **Write a program that inputs a character as input and tells whether the entered character is a vowel or not.**
3. **In a pass/fail course, a student passes if the marks are greater than or equal to 70 and fails if the marks are lower. Write a C++ program that accepts marks and prints the message "A passing grade" or "A failing Grade", as appropriate.**
4. **Write a C++ Program that read three input from user and returns the smallest one**
5. **Create a C++ program that takes the length and breadth of a shape as input. Using If-Else structure find out whether the shape is a rectangle or a square. (Hint: if the length and breadth of the shape are equal, it's a square. Otherwise it is a rectangle.)**
6. **Make a calculator by using switch case.**
7. **A senior salesperson is paid $400 a week; and a junior salesperson is paid $275 a week. Write a C++ program that accepts as input the salesperson's status in the character variable status. If status equals 's', the senior salesperson's salary should be displayed; otherwise, the junior person's salary should be output.**

TASK:

```
#include<iostream>
using namespace std;
int main()
{
    int length;
    int breadth;
    cout<<"enter values"<<endl;
    cin>>length>>breadth;

    if (length==breadth){

    cout<<"shape is square";
}
    else
    cout<<"shape is rectangle";
    return 0;
```

```
enter values
5
4
shape is rectangle
--------------------------------
Process exited after 113.6 seconds with return value 0
Press any key to continue . . .
```

TASK:

MUHAMMAD UMAIR **02-132192-004**

COMPUTER PROGRAMMING LAB 3

```cpp
#include<iostream>
using namespace std;
int main()
{
    int n;
    cout<<"enter numbers"<<endl;
    cin>>n;
    if (n%2==0){
    cout<<"even";
}
    else
    cout<<"odd";
    return 0;
}
```

```
enter numbers
20
even
--------------------------------
Process exited after 4.719 seconds with return value 0
Press any key to continue . . .
```

TASK:

```cpp
#include<iostream>
using namespace std;
int main()
{
    int a;
    int b;
    int c;
    cout<<"enter three numbers"<<endl;
    cin>>a>>b;
    cin>>c;
    if (a<b && a<c){
    cout<<"a is smallest";
}
else if(b<a && b<c){
cout<<"b is smlllest";}
    else
    cout<<"c is  smallest";
    return 0;
}
```

```
enter three numbers
2
5
4
a is smallest
--------------------------------
Process exited after 8.55 seconds with return value 0
Press any key to continue . . .
```

TASK:

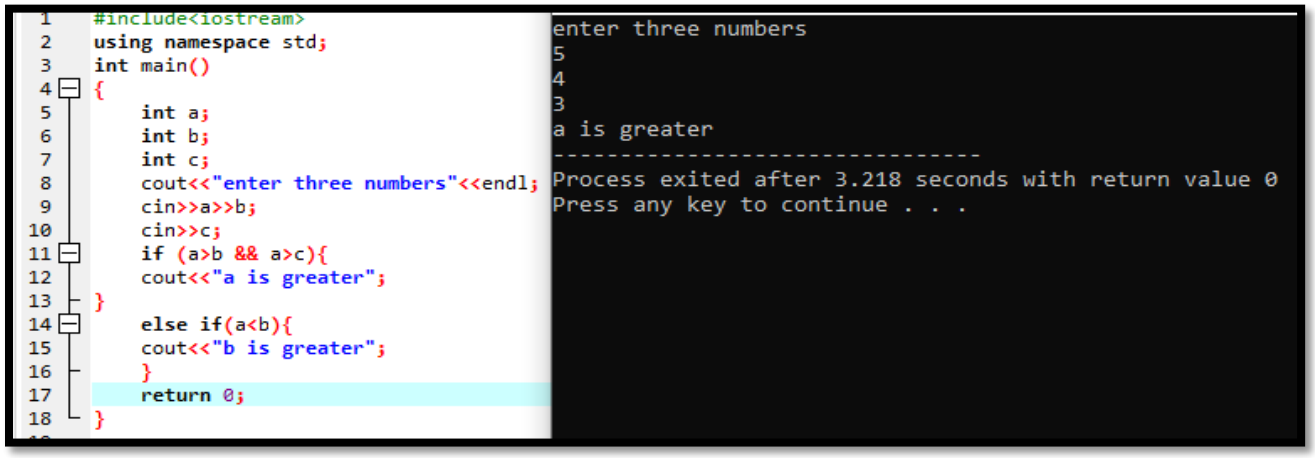
```cpp
#include<iostream>
using namespace std;
int main()
{
    char A;
    cout<<"enter letter"<<endl;
    cin>>A;
    if (A=='a' || A=='e' || A=='i' || A=='o' || A=='u'){
    cout<<"vowel";
}
    else
    cout<<"not vowel";
    return 0;
}
```

```
C:\Users\muham\OneDrive\Desktop\h1.exe
enter letter
e
vowel
--------------------------------
Process exited after 9.893 seconds with return value 0
Press any key to continue . . .
```

MUHAMMAD UMAIR **02-132192-004**

COMPUTER PROGRAMMING LAB 3

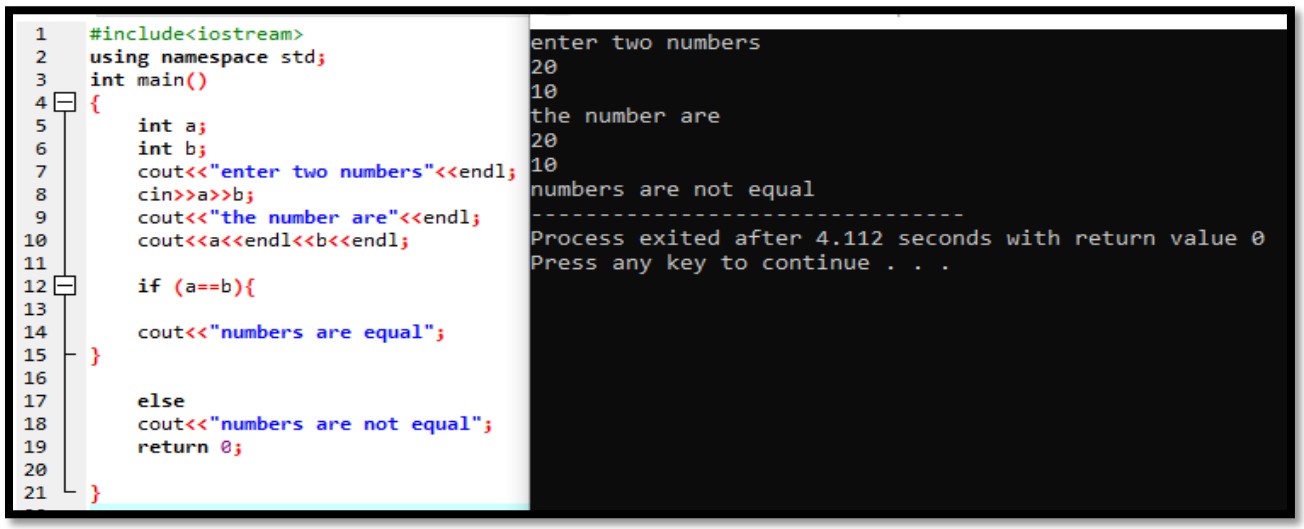
TASK:



```
#include<iostream>
using namespace std;
int main()
{
    int a;
    int b;
    int c;
    cout<<"enter three numbers"<<endl;
    cin>>a>>b;
    cin>>c;
    if (a>b && a>c){
    cout<<"a is greater";
}
    else if(a<b){
    cout<<"b is greater";
    }
    return 0;
}
```

```
enter three numbers
5
4
3
a is greater
--------------------------------
Process exited after 3.218 seconds with return value 0
Press any key to continue . . .
```

TASK:



```
#include<iostream>
using namespace std;
int main()
{
    int a;
    int b;
    cout<<"enter two numbers"<<endl;
    cin>>a>>b;
    cout<<"the number are"<<endl;
    cout<<a<<endl<<b<<endl;

    if (a==b){

    cout<<"numbers are equal";
}

    else
    cout<<"numbers are not equal";
    return 0;

}
```

```
enter two numbers
20
10
the number are
20
10
numbers are not equal
--------------------------------
Process exited after 4.112 seconds with return value 0
Press any key to continue . . .
```

TASK:

COMPUTER PROGRAMMING LAB 3

```cpp
#include<iostream>

using namespace std;
int main()
{
    int num1;
    int num2;
    cout<<"enter 2 integers and i will tell you the relationship they satisfy"<<endl;
       cin>>num1>>num2;
       if(num1==num2){
         cout<<num1<<"is equal to"<<num2<<endl;
    }
       else if(num1 != num2){
         cout<<num1<<"is not equal"<<num2<<endl;
    }
       else if(num1<num2){
         cout<<num1<<"is less than"<<num2<<endl;
    }
       else if(num1>num2){
         cout<<num1<<"is greater than"<<num2<<endl;
    }
       else if(num1<=num2){
         cout<<num1<<"is less than or equal to"<<num2<<endl;
    }
       else if(num1>=num2){
         cout<<num1<<"is greater than or equal to"<<num2<<endl;
    }
     return 0;
}
```

```
enter 2 integers and i will tell you the relationship they satisfy
2
10
2is not equal10

------------------------------
Process exited after 21.62 seconds with return value 0
Press any key to continue . . .
```

TASK:

```cpp
#include<iostream>
#include<math.h>

using namespace std;
int main()
{
    int marks;
    cout<<"enter value of marks"<<endl;
    cin>>marks;
    if (marks>50){


    cout<<"pass";
}


    else
    cout<<"fail";
}
```

```
enter value of marks
69
pass
--------------------------------
Process exited after 9.16 seconds with return value 0
Press any key to continue . . .
```

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COMPUTER PROGRAMMING LAB 3

TASK:

```cpp
#include <iostream>
using namespace std;
int main() {
char op;
int a;
int b;
cout<<"ENTER THE VALUE OF A"<<endl;
cin>>a;
cout<<"ENTER THE VALUE OF B"<<endl;
cin>>b;
cout<<"WHICH OPERATION YOU WANT TO PERFORM"<<endl;
cin>>op;
cout<<"the result is:"<<endl;
switch(op)
{
case '+':
    cout<< a+b;
    break;
case '-':
    cout<< a-b;
    break;
case '*':
    cout<< a*b;
    break;
case '/':
    cout<< a/b;
    break;
default:
    cout<<"invalid operator";
}
   return 0;
}
```

```
ENTER THE VALUE OF A
20
ENTER THE VALUE OF B
10
WHICH OPERATION YOU WANT TO PERFORM
50
the result is:
invalid operator
--------------------------------
Process exited after 39.88 seconds with return value 0
Press any key to continue . . .
```

TASK:

```cpp
#include<iostream>
using namespace std;
int main(){
char status;
int senior=400;
int junior=275;
cout<<"s is for senior person salary\n";
cout<<"j is for junior person salary\n";
cout<<"enter status:";
cin>>status;
if(status=='s'){
cout<<"senior person salary is $"<<senior<<endl;}
else
cout<<"junior person salary is $"<<junior<<endl;
return 0;
}
```

```
s is for senior person salary
j is for junior person salary
enter status:s
senior person salary is $400

------------------------------
Process exited after 15.87 seconds with return value 0
Press any key to continue . . .
```

MUHAMMAD UMAIR **02-132192-004**