PRACTICAL NO: 01

Practical Related Questions

/ Write a C++ program to evaluate the following expressions:*

X=(-b-(b2-4ac))/2a

*Name: yash ajay magar */*

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

int main()
{
   // Variable Declaration
   int a, b, c, x;

   cout << "Enter values of a, b and c: " << endl;
   cin >> a >> b >> c;

   x = (-b -(b * b - 4 * a * c)) / 2 * a;

   cout << "\nValue of x: " << x << endl;

   return 0;
}
```

```
Enter values of a, b and c:
12 34 56

Value of x: 8988
```

PRACTICAL NO: 02

Practical Related Questions

/* Write a C++ program to access the global variable using scope resolution operator.

Name: yash ajay magar */

```
#include<iostream>

using namespace std;


int y = 100;


int main()

{

   //Varible declaration

   int y = 10;


   cout << "\nValue of local y: " << y << endl;

   cout << "\nValue of globle y: " << ::y << endl;


   return 0;

}
```

```
Value of local y: 10

Value of globle y: 100
```

/ Format the following statement using manipulators.*

*Name: yash ajay magar */*

```
#include <iostream>

#include <iomanip>

using namespace std;


int main()

{

   int Rate = 412345, period = 35, year = 2024;


   cout << setw(8) << Rate << endl;

   cout << setw(8) << period << endl;

   cout << setw(8) << year << endl;

   return 0;

}
```

```
412345
    35
  2024
```

PRACTICAL NO: 03

Practical Related Questions

/* Calculate average of two numbers using explicit type casting

Name: yash ajay magar */

```
#include <iostream>

using namespace std;


int main()

{

   //Variable Declaration

   int one, two;

   float avg;


   //Reading inputs

   cout << "Enter two numbers: ";

   cin >> one >> two;


   //Performing implicite typecasting

   avg = static_cast<float>(one + two) / 2;


   // Display the result

   cout << "\n-------------------------------------------------------
-----------------" << endl;

   cout << "The two numbers you entered are: " <<
one << " and " << two << endl;

   cout << "There accurate average is: " << avg << endl;

   cout << "-------------------------------------------------------
---------------" << endl;


   return 0;}
```

```
Enter two numbers: 23 56

-------------------------------------------------
The two numbers you entered are: 23 and 56
There accurate average is: 39.5
-------------------------------------------------
```

/ Write a program which display the percentage of students which accept marks of three*

subjects from user.(Show the use of Implicit type casting)

*Name: yash ajay magar */*

```
#include <iostream>

using namespace std;


int main()

{

   // Variable declaration

   int sub1, sub2, sub3, total;


   // Reading the marks

   cout << "\nEnter the marks in three subjects: ";

   cin >> sub1 >> sub2 >> sub3;


   cout << "\nEnter total marks: ";

   cin >> total;


   // Performing implicite typecasting

   float per = ((sub1 + sub2 + sub3) / (float)total) *
100;


   // Printing outputs

   cout << "\n**********************" << endl;

   cout << "You scored: " << per << " %";

   cout << "\n**********************" << endl;


   return 0;
```

```
Enter the marks in three subjects: 30 45 50

Enter total marks: 150

**********************
You scored: 83.3333 %
**********************
```

PRACTICAL NO: 04

Practical Related Questions

/* Define a class Room with data members length, breadth and height. Member function

calculate_area () and calculate_volume(). Calculate the area and volume of room. Define the

member function inside the class.

Name: yash ajay magar */

```
#include <iostream>

using namespace std;


// Class Declaration

class Room

{

public:

   // Required data members

   float lenght, breadth, height;


   // Required member functions

   float calculate_area(float lenght, float breadth)

   {

      return lenght * breadth;

   }

   float calculate_volume(float lenght, float breadth, float height)

   {

      return lenght * breadth * height;

   }

};


int main()

{

   // Object declaration

   Room n1;

   // Variable Declaration

   float a, b, c;


   // Reading values of H, B, L

   cout << "\nEnter the Lenght of Room(in meters): ";

   cin >> a;


   cout << "\nEneter the breadth of Room(in meters): ";

   cin >> b;


   cout << "\nEnter the Height of Room(in meters): ";

   cin >> c;


   // Printing the results

   cout << "\n-----------------------------------------------------" << endl;

   cout << "Area of Room is " << n1.calculate_area(a, b) << " sq meters" << endl;

   cout << "Volume of Room is " << n1.calculate_volume(a, b, c) << " cubic meters";

   cout << "\n-----------------------------------------------------" << endl;


   return 0;

}
```

```
Enter the Lenght of Room(in meters): 45

Eneter the breadth of Room(in meters): 50

Enter the Height of Room(in meters): 20

-----------------------------------------------------
Area of Room is 2250 sq meters
Volume of Room is 45000 cubic meters
-----------------------------------------------------
```

PRACTICAL NO: 05

Practical Related Questions

/* Write a program to find area of circle such that the class circle must have three functions

namely:

a)read() to accept the radius from user.

b)compute() for calculating the area

c)display() for displaying the result.(Use Scope resolution operator)

Name: yash ajay magar */

```
#include <iostream>

using namespace std;


// Declaring pi as a constant

const float pi = 3.14159265359;


// Class Declaration

class circle

{

private:

   float radius, area;


public:

   void read(float r);

   float compute();

   void display();

};


int main()

{

   // Obeject declaration

   circle c1;

   // Variable delcaration

   float radius;


   // Reading radius

   cout << "\nEnter the radius(in meters): ";

   cin >> radius;


   // Function calling

   c1.read(radius);

   c1.compute();

   c1.display();


   return 0;

}


void circle::read(float r)

{

   radius = r;

}


float circle::compute()

{

   area = radius * radius * pi;

   return area;

}


void circle::display()

{

   cout << "\n----------------------------------------" <<
endl;

   cout << "Area of the circle is " << area << " sq
meters";

   cout << "\n----------------------------------------" <<
endl;
```

```
}
   Enter the radius(in meters): 30

   -----------------------------------------
   Area of the circle is 2827.43 sq meters
   -----------------------------------------
```

/* Define a class complex with data members real and imaginary, member function read()

and write(). Write a program to perform the addition of two complex number and display the

result.

Name: Srushti Sidram salunke */

```
#include <iostream>

using namespace std;


class Complex {
   int real, imag;

public:
   void read();
   void write();
   void add(Complex, Complex);
};


void Complex::read() {
   cout << "Enter real part: ";
   cin >> real;
   cout << "Enter imaginary part: ";
   cin >> imag;
}


void Complex::add(Complex c1, Complex c2) {
   real = c1.real + c2.real;
   imag = c1.imag + c2.imag;
}


void Complex::write() {
   cout << "\nSum = " << real << " + " << imag << "i" << endl;
}


// Main function
int main() {
   Complex c1, c2, result;

   cout << "\nEnter first complex number:" << endl;
   c1.read();

   cout << "\nEnter second complex number:" << endl;
   c2.read();

   result.add(c1, c2);

   result.write();      //Display result

   return 0;
}
```

```
Enter first complex number:
Enter real part: 34
Enter imaginary part: 43

Enter second complex number:
Enter real part: 23
Enter imaginary part: 32

Sum = 57 + 75i
```

PRACTICAL NO: 06

Practical Related Questions

/* Write a C++ program to calculate area of Rectangle using Inline function.

Name: yash ajay magar */

```
#include <iostream>

using namespace std;


class rectangle

{

private:

   float lenght, breadth, area;


public:

   void read()

   {

      cout << "\nEnter Length and breadth of rectangle(in meters): ";

      cin >> lenght >> breadth;

   }

   inline float Area()

   {

      area = lenght * breadth;

   }

   void display()

   {

      cout << "\n----------------------------------------" << endl;

      cout << "Area of the rectangle is " << area << "sq meters";

      cout << "\n----------------------------------------" << endl;

   }

};

int main()

{

   // Object declaration

   rectangle s1;


   // Function calling

   s1.read();

   s1.Area();

   s1.display();


   return 0;

}
```

```
Enter Length and breadth of rectangle(in meters): 24 27

----------------------------------------
Area of the rectangle is 648sq meters
----------------------------------------
```

PRACTICAL NO: 07

Practical Related Questions

/* WAP to declare a class calculation. Display addition, subtraction, multiplication, division of

two numbers. Use friend function.

Name: yash ajay magar */

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

class calculation
{
   // Varible declaration
   int a, b;

public:
   void getdata()
   {
      cout << "\nEnter two numbers: ";
      cin >> a >> b;
   }
   friend void operations(calculation c);
};

// For calculating and to display outputs
void operations(calculation c)
{
   // For decorating output
   cout << setw(60) << setfill('*') << "" << endl;
   cout << "Addition is: " << c.a + c.b << endl;
   cout << "Substration is: " << c.a - c.b << endl;
   cout << "Multiplication is: " << c.a * c.b << endl;
   if (c.a == 0)
   {
      cout << "Dividing to '0' is not allowed in maths" << endl;
   }
   else
   {
      cout << "Division is: " << c.a / c.b << endl;
   }
   cout << setw(60) << setfill('*') << "" << endl;
}

int main()
{
   // Object creation
   calculation o1;

   // Function calling
   o1.getdata();
   operations(o1);

   return 0;
}
```

```
Enter two numbers: 0 23
************************************************************
Addition is: 23
Substration is: -23
Multiplication is: 0
Dividing to '0' is not allowed in maths.
************************************************************
```