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[CPSC 230]

Chapter 4- lab assignment

Note: Submit your assignment in the inbox (chapter 4 assignment). If the assignment includes writing a program code, then copy the codes and the outputs

Part 2 assignment,

## 1. Write a function "find_Kin_energy" to find the Kinetic energy = .5*mass*velocity^2 .

```
double find_Kin_energy() {

          double mass, velocity; //create variables mass, velocity of type double

          cout << "Enter the mass of the object: "; //ask user input
          cin >> mass; //assign user input
          cout << "Enter the velocity of the object: "; //ask user input
          cin >> velocity; //assign user input

          return (1.0 / 2.0) * (mass * (velocity * velocity)); //kin_Energy
equation

     }
```

## 2. Write a function to compute the distance between two points (x1, y1) and (x2, y2)

```
double getDistance() {

     double x1, x2, y1, y2; //declare vars
     double distance; //declare vars

     cout<<"What is x1: "; //ask user input
     cin>>x1; //assign user input
     cout<<"What is x2: "; //ask user input
     cin>>x2; //assign user input
     cout<<"What is y1: "; //ask user input
     cin>>y1; //assign user input
     cout<<"What is y2: "; //ask user input
     cin>>y2; //assign user input

     distance = sqrt(((pow(x2-x1),2)) - (pow((y2-y1),2))); //calculate distance

     return distance; //display distance
     }
```

## 3. Write a function to compute greatest common divisor GCD(number1,number2), then compute the least common denominator, lcd(number1,number), where lcd(a,b)= a* b/ GCD(a,b) where a and b are two integer numbers

```
//CPSC 230 RAVI PATEL GCD & LCD Calculator
#include <iostream>

int gcd(int,int);

using namespace std;

int main() {

int num1, num2, cf, product, LCD;

cout << "Enter a number to use in Euclidean algorithm: ";
cin >> num1;
cout << "Enter another number to use in Euclidean algorithm: ";
cin >> num2;

cf = gcd(num1, num2); //calculate common factor

if (cf) {

     product = num1 * num2; //calculate product of num1 and num2
     LCD = product / cf; //calculate lowest common denominator
     cout << "\nThe Greatest Common Divisor of " << num1 << " and " << num2 << "
is: " << cf << endl;
     cout << "The Least Common Denominator of " << num1 << " and " << num2 << "
is: " << LCD << endl;

     }

else

     cout << "\nPlease try different numbers.\n";

}

int gcd(int u, int v) {

return (v != 0) ? gcd(v, u % v) : u;

}

//SAMPLE OUTPUT:
//Enter a number to use in Euclidean algorithm: 2
//Enter another number to use in Euclidean algorithm: 3
//
//The Greatest Common Divisor of 2 and 3 is: 1
//The Least Common Denominator of 2 and 3 is: 6
```