**TASK-13**

**EXPLANATION:**

In Physics, an object that is in motion is said to have kinetic energy. The following formula can be used to determine a moving objects kinetic energy:

**K.E = ½ mv2**

The variables in the formula are as follows: KE is the kinetic energy, m is the object’s mass in kilogram, and v is the object velocity, in meters per second.

Write a function named kineticEnergy that accepts an object’s mass (in kilogram) and velocity (in meter per seconds) as arguments. The function should return the amount of kinetic energy that the object has. Demonstrate the function by calling it in a program that ask the user to enter values for mass and velocity.

**INPUT:**

#include <iostream>

#include <cmath>

#include "abdullah"

using namespace std ;

double kineticEnergy ( double , double ) ;

int main ()

{

bool flag = true ;

while ( flag )

{

double mass , velocity ;

cout << "Please enter mass of body ( in Kg ) : " ;

while ( ! ( cin >> mass ) || mass < 1 )

{

cin\_clear () ;

cout << "Please enter mass of body ( in Kg ) : " ;

}

cout << "Please enter velocity of body ( in m/sec ) : " ;

while ( ! ( cin >> velocity ) || velocity < 1 )

{

cin\_clear () ;

cout << "Please enter velocity of body ( in m/sec ) : " ;

}

system("cls") ;

cout << "The kinetic energy of the body is : " << kineticEnergy ( mass , velocity ) << " Joule." ;

flag = continuationLoop() ;

}

}

double kineticEnergy ( double mass , double velocity )

{

double kinetic\_energy = mass \* pow ( velocity , 2 ) / 2 ;

return kinetic\_energy ;

}

**OUTPUT:**





