# **Lab 2\_1 Assignment**

**Important: Make sure you include the 3 header lines described below in all your programs; otherwise, you will lose points.**

**// Program Name:** program name here **// Name:** your name here **// Purpose:** A sentence that describes what this program is doing.

1. Write a Java project called **Lab2\_1A** that calculates the surface area of a cube.

* You will need 2 double variables named **side** and **surfaceArea**.
* Set **side** equal to 10.
* Calculate **surfaceArea** using this formula: side2 \* 6 (Hint – Math.pow(x,2) will compute x2)
* Print **surfaceArea** and **side** on separate lines with labels.

1. Write a Java project called **Lab2\_1B** that will compute cost of renting video games. Our pretend rental store rents both old and new games, but the old ones cost less.

* Declare 3 double variables for the 1) number of old games, 2) the number of new games, and 3) the total cost. (Remember to follow the Java rules when you name your variables.)
* Set the old games variable equal to 4 and the new games variable equal to 2.
* The rental cost for each old game is 2.50 and the rental cost for each new game is 5.00.
* Calculate the total rental cost.
* Print all 3 variables (each on their own line) with labels.

1. Write a Java project named **Lab2\_1C** that will calculate the kinetic energy from mass and velocity.

* Declare 3 double variables to represent the mass, velocity and kinetic energy.
* Set the mass equal to 25
* Set the velocity equal to 40
* Calculate kinetic energy using the formula: 0.5 \* mass \* velocity2
* Print all 3 variables (each on their own line) with labels.

1. Write a Java project named **Lab2\_1D** that will calculate the amount of interest owed on a monthly payment of a loan.

* Add the statements **import java.util.\*;** and **import java.io.\*;** at the top of your program, after your comments and before the line **public class Lab2\_1C**
* Inside your main method do the following:
  + Add the statement **Scanner keyboard = new Scanner(System.in);**  as the first statement.
  + Declare 3 double variables: **interestRate**, **loanBalance**, **monthlyInterestAmt**
  + Add these statements:

**System.out.println("Enter the interest rate and loan balance");**

**interestRate = keyboard.nextDouble();**

**loanBalance = keyboard.nextDouble();**

* + Calculate **monthlyInterestAmt** using this formula:

*loanBalance \* (interestRate/1200)*

* + Print **monthlyInterestAmt** with a label.