**OOPS\_TASKS**

**Exercise-1:**

**Code for Package:**

**package** shape;

**class** Square{

**double** side;

**public** Square(**double** side) {

**this**.side=side;

}

**public** **void** printSquare() {

System.***out***.println("This is a square of side-length: "+side);

}

}

**class** Triangle{

**double** side1,side2,side3;

**public** Triangle(**double** side1,**double** side2,**double** side3) {

**this**.side1=side1;

**this**.side2=side2;

**this**.side3=side3;

}

**public** **void** printInfo() {

**if**(side1==side2 && side1==side3)

System.***out***.println("This Triangle is an equilateral Triangle!!");

**if**(side1==side2 || side1==side3 || side2==side3)

System.***out***.println("This Triangle is an isosceles Triangle!!");

**else**

System.***out***.println("This is a Scalene Triangle");

}

}

**class** Circle{

**double** radius;

**double** area;

**public** Circle(**double** radius) {

**this**.radius=radius;

}

**public** **double** areaMeasure() {

area=3.14\*radius\*radius;

**return** area;

}

}

**Code for TestShape Class:**

A computer screen shot of a code

Description automatically generated

**Exercise-2:**

A screenshot of a computer program

Description automatically generated

**Exercise-3:**

**package** shape;

**class** Calculator\_Basic {

// Add method

**public** **void** add(**int** a, **int** b) {

System.***out***.println("Adding int and int: " + a + " + " + b + " = " + (a + b));

}

**public** **void** add(**double** a, **double** b) {

System.***out***.println("Adding double and double: " + a + " + " + b + " = " + (a + b));

}

**public** **void** add(**int** a, **double** b) {

System.***out***.println("Adding int and double: " + a + " + " + b + " = " + (a + b));

}

**public** **void** add(**double** a, **int** b) {

System.***out***.println("Adding double and int: " + a + " + " + b + " = " + (a + b));

}

// Diff method

**public** **void** diff(**int** a, **int** b) {

System.***out***.println("Diff int and int: " + a + " - " + b + " = " + (a - b));

}

**public** **void** diff(**double** a, **double** b) {

System.***out***.println("Diff double and double: " + a + " - " + b + " = " + (a - b));

}

**public** **void** diff(**int** a, **double** b) {

System.***out***.println("Diff int and double: " + a + " - " + b + " = " + (a - b));

}

**public** **void** diff(**double** a, **int** b) {

System.***out***.println("Diff double and int: " + a + " - " + b + " = " + (a - b));

}

// Mul method

**public** **void** mul(**int** a, **int** b) {

System.***out***.println("Mul int and int: " + a + " \* " + b + " = " + (a \* b));

}

**public** **void** mul(**double** a, **double** b) {

System.***out***.println("Mul double and double: " + a + " \* " + b + " = " + (a \* b));

}

**public** **void** mul(**int** a, **double** b) {

System.***out***.println("Mul int and double: " + a + " \* " + b + " = " + (a \* b));

}

**public** **void** mul(**double** a, **int** b) {

System.***out***.println("Mul double and int: " + a + " \* " + b + " = " + (a \* b));

}

// Div method

**public** **void** div(**int** a, **int** b) {

System.***out***.println("Div int and int: " + a + " / " + b + " = " + (a / b));

}

**public** **void** div(**double** a, **double** b) {

System.***out***.println("Div double and double: " + a + " / " + b + " = " + (a / b));

}

**public** **void** div(**int** a, **double** b) {

System.***out***.println("Div int and double: " + a + " / " + b + " = " + (a / b));

}

**public** **void** div(**double** a, **int** b) {

System.***out***.println("Div double and int: " + a + " / " + b + " = " + (a / b));

}

}

**public** **class** BasicCalculators {

**public** **static** **void** main(String[] args) {

// **TODO** Auto-generated method stub

Calculator\_Basic calc = **new** Calculator\_Basic();

// Invoke methods with different types of numbers

calc.add(3, 5);

calc.add(3.0, 5.0);

calc.add(3, 5.0);

calc.add(3.0, 5);

System.***out***.println();

calc.diff(10, 4);

calc.diff(10.0, 4.0);

calc.diff(10, 4.0);

calc.diff(10.0, 4);

System.***out***.println();

calc.mul(2, 3);

calc.mul(2.0, 3.0);

calc.mul(2, 3.0);

calc.mul(2.0, 3);

System.***out***.println();

calc.div(9, 3);

calc.div(9.0, 3.0);

calc.div(9, 3.0);

calc.div(9.0, 3);

}

}

**Exercise-4:**

**package** com.cts.ass;

**class** Vehicles{

**public** Vehicles() {

System.***out***.println("Vehicle is created");

}

**public** **void** horn() {

System.***out***.println("Honkk..Honkk..");

}

**public** **void** breakSignal() {

System.***out***.println("Vehicle stopped!!");

}

}

**class** Truck **extends** Vehicles{

**public** Truck() {

System.***out***.println("Vehicle named Truck is created!!");

}

**public** **void** workProperty() {

System.***out***.println("It used to carry Goods and materials..");

}

}

**class** Bus **extends** Vehicles{

**public** Bus() {

System.***out***.println("Bus is created!!");

}

**public** **void** passengers(**int** num) {

System.***out***.println("This Bus has "+num+" number of passengers!!");

}

}

**class** Car **extends** Vehicles{

**public** Car() {

System.***out***.println("A vehicle named Car is Created!!");

}

**public** Car(**int** pass) {

System.***out***.println(pass+" number of passengers are there!!");

}

**public** **void** nameOfCar(String name) {

System.***out***.println("The Name of the Car is "+name);

}

}

**public** **class** Road {

**public** **static** **void** main(String[] args) {

// **TODO** Auto-generated method stub

Vehicles v1=**new** Vehicles();

v1.horn();

v1.breakSignal();

Truck t1=**new** Truck();

Bus b1=**new** Bus();

b1.horn();

b1.passengers(20);

Car c1=**new** Car();

Car c2=**new** Car(3);

c2.nameOfCar("Mercedez");

c1.nameOfCar("BMW");

}

}