**Classes and objects:**

Class members:

* State/data/variables
* Behavior/methods/code/work

Example: class car – physical-tangible, mobile phone, classroom, computer, dress

* **State:** brand, type, color, price, year, engine, howMany
* **Behavior:** drive(), sit(), playMusic(), openDoor(), repair()

Example: class learnJava – virtual-intangible, goMovie, love,

* **State:** noOfPrograms, code, classes, topicsLearned, simpleOrAdvanced
* **Behavior:** doProgramming(), checkProgram(), learingJavaQuicker(), doTest(), getScore()

class car{

static String brand, color;

float price, engine;

int year;

car(){

}

void drive(){

int whichGear=1;

}

}

Variable types:

* Class variables – created inside a class, but outside all the methods (STATIC)
* Instance variables - created inside a class, but outside all the methods
* Local variables – variables created and used inside a method

Methods and constructors:

Constructors are methods with:

* The same name as the class name
* No return type –void/int/char/string
* Can’t be called anywhere, it is called only when we create object of the class

Encapsulation:

**Classwork:**

1. Program to get two integer numbers and show addition, subtraction, multiplication, division and remainder (%) result.

Example: 7 % 2 = 1, 3 times and remainder = 1

23 % 10 = 3

23 % 50 = 23

23 % 17 = 1 time (Quotient), remainder = 6

23 % 50 = 23

23 % 100 = 23

2. Program to read number of days, and say how many years, weeks and days in it.

Example: input = 400 is 1 year, 35/7 = 5 weeks and 0 days

input = 450 is 1 year, 85/7 = 12 weeks, 1 day

3. Program to find the perimeter and area of a rectangle. Input is the height of the rectangle.

Perimeter = 2 x (height + length)

Area = height x length