## Objectives

After performing this lab, students shall be able to:

* Aggregation
* Single level public/private/protected inheritance
* Multilevel public inheritance

**Aggregation:**

The aggregation relationship is used to represent the ownership or a whole/part relationship between classes. The aggregate object has one or more parts which may be shared with other objects of the same class or other classes. The objects that make up the parts are created and destroyed independently of the aggregate object.

**TASK 1🡪(Aggregation)**

Create classes as mentioned below.

class Tyre

{

private:

int\* width;

int\* aspect\_ratio;

int\* diameter;

public:

//Constructors, Getters and Destructor

void PrintTyre();

};

class Car

{

private:

int\* model;

char\* company;

Tyre\* t1;

public:

//Constructors, Destructor

void PrintCar();

};

main() should contains following lines, You can add more code, but these lines should be included.

tyre tNew(12, 10, 13);

car cNew(2016,"Honda",tNew);

**TASK 2🡪(Inheritance):**

Write a class LocalPhone that contains an attribute phone to a local telephone number.

The class contains member functions to input and display phone number. Write a child class NatPhone for national phone numbers that inherits LocalPhone class. It additionally contains an attribute to store city code. It also contains member functions to input and show the city code.

Write another class IntPhone for international phone numbers that inherits NatPhone class. It additionally contains an attribute to store country code. It also contains member functions to input and show the country code.

**TASK 3🡪(Multi-level Inheritance):**

Create another class employee2 from class EMPLOYEE given below. This new class should add a type double data item called compensation, and also a string type called time to indicate whether the employee is paid hourly, weekly, or monthly, with member functions input and display. For simplicity you can change the manager, scientist, and laborer classes so they are derived from employee2 and employee classes.

#include<iostream>

using namespace std;

class EMPLOYEE

{

protected:

string name;

unsigned long number;

public:

void getdata();

void putdata();

};