**Question 1:** Implement in C++ a program that will instantiate two automobile objects, allowing them to change it’s speed and direction. Both automobile objects, their class declarations to say, auto1 and auto2, should have different characteristics. For example, auto1 could have air conditioner and auto2 could have no air conditioner, auto1 could be red color and auto2 could be blue. Please limit common features to minimum required, 6 at max, such as number of wheels, steering wheel and headlights. Differentiating characteristics should be, 2 or 3 at the max.

**Answer**:-

class Parent {

int speed;

String direction;

public Parent(int speed, String direction) {

this.speed = speed;

this.direction = direction;

}

}

class Auto1 extends Parent {

boolean ac;

String color;

public Auto1(int speed, String direction, boolean ac, String color) {

super(speed, direction);

this.ac = ac;

this.color = color;

}

@Override

public String toString() {

return "Auto1 Ac=" + ac + ", color=" + color + ", speed=" + speed

+ ", direction=" + direction;

}

}

class Auto2 extends Parent {

int numberOfWheel;

public Auto2(int speed, String direction, int numberOfWheel) {

super(speed, direction);

this.numberOfWheel = numberOfWheel;

}

@Override

public String toString() {

return "Auto2 Number Of Wheel=" + numberOfWheel + ", speed=" + speed

+ ", direction=" + direction;

}

}

public class Demo {

public static void main(String args[]) {

Auto1 obj1 = new Auto1(100, "North", true, "Red");

Auto2 obj2 = new Auto2(100, "East", 4);

System.out.println(obj1.toString());

System.out.print(obj2.toString());

}

}

**Question 2:**  Describe what is UML?

**Answer**: - Unified Modeling language diagram is designed to let developers and customer view a software system from a different perspective and in varying degrees of abstraction.

**Question 3:** Describe what is Software Engineering?

**Answer**: - Software engineering is the application of systematic, disciplined, quantifiable approach to the development, operation, and maintenance of software that is the application of engineering to software.