

Problem1

Object-oriented programming is based on three fundamental concepts: **data abstraction**, **inheritance** and **dynamic binding**.

We mainly focus on **data abstraction** in this problem, for we are learning class in c++. Take the braking system of a car for example. When we drive a car, we needn't care about how the braking system manage to slow down the car in detail. We just use it as an abstract tool. We cannot reach the spare parts inside the brake system. This is **data hiding** and **encapsulation**. We can only reach the **interface** of the brake system, and that's the part we really care about. As long as it implement the function we want it to, we don't care about other things. There are many functions that a driver want a car to implement, and we just use the concept **divide-and-conquer**, which means to divide a huge program into small parts. In the case of a car, we may have brake system, accelerate system, horn system, etc. These principles make the car more easy to manipulate.