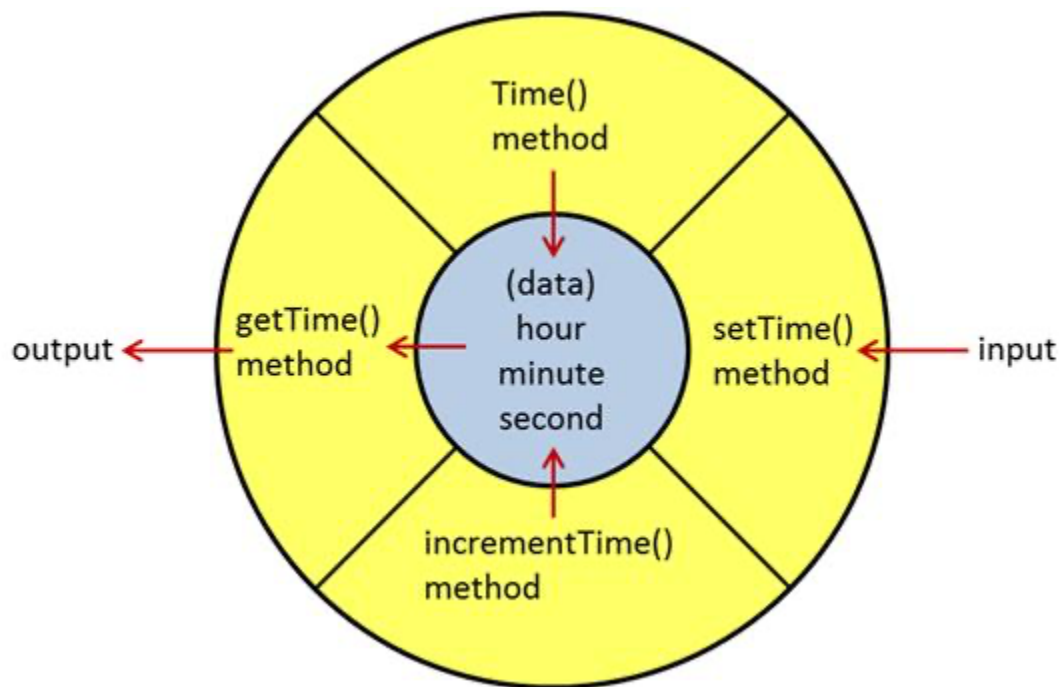


HOMEWORK 2: Polymorphism and Encapsulation

1. Create a program which uses a class shape with functions to find area of multiple shapes and display the name of the shape and other essential component of the class. Create derived classes curvedShape and angleShape and use them to derive rectangle, triangle, circle, ellipse and trapezoid classes, each **having overridden functions** area and display. In addition, modify your code to use virtual functions to perform same area calculation using **virtual functions**.
2. Considering the illustration given below, write a program where the data member-data (marked with blue) is protected and all functions marked in yellow are public.



3. Consider the following class declaration:

```
class RiskyTime
{
    public:
        int hour;
        int minute;
        int second;
        void setTime (int newHour, int newMinute, int newSecond);
        void getTime (int& currHour, int& currMinute, int& currSecond);
        void incrementTime();
};
```

Explain if this class is secure. If not, identify the security risks.