1. Implement a base class **shape** that has a variable **L** as **double**. Derive two classes **Square** and **Circle** from **Shape**. Add to **Shape** class a function **getdata()** to reads **L**, and a function **displayarea()** to compute and display area of the figure (square or circle). Make **displayarea()** as **virtual function** and redefine this function in the derived classes to suit their requirement.

2. Implement a base class **Point** that has two variables **x** and **y** as **int**. Derive three classes **Ratio, Complex and Point_2D** from **Point**. Add to **Point** class a function **getdata()** to read **x** and **y**, and a **pure virtual** function **display()**. Redefine this function in the derived classes to suit their requirement such that this function displays:

   i. **x+i y** format in **Complex** class.

   ii. $\frac{x}{y}$ format in **Ratio** class.

   iii. **(x, y)** format in **Point_2D** class.

3. Implement a base class **BaseS** that has a variable **L** as double and a function **getl()** to read **L**. Derive a class **Rectangle** from **BaseS** that has a variable **W** as double

and a function **getw()** to read **W**. Derive a class **Parallelogram** from **Rectangle** that has a variable **H** as double, a function **geth()** to read **H**, and a function **volume ()** that returns the volume of parallelogram (volume = **L* W * H**). **(Make BaseS class as virtual class)**