Programming Assignment 6: Draw Figure Revisit

This programming assignment to design and implement an abstract class Draw in C++. The abstract class Draw contains the following data members and member functions:

```
class Draw {
  public:
      void printBoard() const;
      virtual void drawBoard()=0; // Pure virtual method.

  protected:
      char *name; // Name of the figure.
      int width; // Width of drawing board.
      int height; // Height of drawing board.
      char **board; // Pointer of the drawing board.
};
```

Design and implement three concrete subclasses, **class** Square, **class** Triangle, and **class** Rhombus to inherit abstract **class** Draw. Each concrete class of figure **class** Square, **class** Triangle, and **class** Rhombus contains a private date member side, a constructor method, implement the abstract method drawBoard() in abstract class Draw and override member method printBoard() , for example:

```
public class Square: public Draw {
  public:
      Square(int=0); // Default constructor.
      void printBoard() const; // Print drawing board. Override printBoard in Draw.
      void drawBoard(); // Filling the drawing board. Concrete method.

  private:
      int side; // Side of figure.
}
```

In the constructor method of each concrete class, the parameter is side of the specified figure, you need to set name of the figure, width of drawing board, and height of drawing board and to create memory space for drawing board.

Also, write an application program DrawApp.cpp to input figure: 1: Square, 2: Triangle, 3: Rhombus and side of a figure. Assume side of a figure is a non-negative integer between 3 and 20, including. In the main program， according to the selected figure, create an object of the figure, draw the figure board, and print the figure board. Repeat the above steps until the figure selection is 0.

Use file names **assignment_6_Dxxxxxxx.dev**, **draw.h**, **square.h**, **triangle.h**, **rhombus.h**, **draw.cpp**, **square.cpp**, **triangle.cpp**, **rhombus.cpp**, and **drawApp.cpp** for the project file, header files, and source programs and place them in package **assignment_6_Dxxxxxxx** and compress the directory to generate **assignment_6_Dxxxxxxx.YYY**, where **YYY** is **zip**, **rar**, or **7z** and **Dxxxxxxx** is your student ID. Use file name **report_6_Dxxxxxxx.pdf** for the assignment report. In the assignment report, you must explain the process and experience of programming and development of this assignment. Submit files **assignment_6_Dxxxxxxx.YYY** and **report_6_Dxxxxxxx.pdf** to **iLearn2**. Programming Assignment 6 is due by 23:59 pm, Wednesday, 5/31.

Program execution example: