- Solution

This lesson explains the solutions for the exercises in the previous lesson.

Solution

Exercise Solution

```
#include <iostream>

class Widget{
  public:
    Widget(): width(640), height(480), frame(false), visible(true) {}

    Widget(int w): width(w), height(getHeight(w)), frame(false), visible(true){}

    Widget(int w, int h): width(w), height(h), frame(false), visible(true){}

    void show(){ std::cout << std::boolalpha << width << "x" << height
                           << ", frame: " << frame << ", visible: " << visible
                           << std::endl;
     }
  private:
    int getHeight(int w){ return w*3/4; }
    int width;
    int height;
    bool frame;
    bool visible;
};

int main(){

  std::cout << std::endl;

  Widget wVGA;
  Widget wSVGA(800);
  Widget wHD(1280, 720);

  wVGA.show();
  wSVGA.show();
  wHD.show();
  WHD.show();

  std::cout << std::endl;


}
```

Explanation

- The trick was to figure out the correct values for initializing the `Widget` class’s attributes outside the constructors.

- In line 5 of the **Exercise** code, we can see the default values of all the attributes. Hence, we’ll assign these to them outside the constructor.

- Another thing to notice is that `frame` and `visible` are always initialized to `false` and `true`, respectively. We should simply omit them from the constructors.

- The attributes that can vary based on the arguments are `weight` and `height`. Therefore, we’ve left them as they were in the parameterized constructors.

Next, we will discuss **constructor delegation**.