**Exercise 21**

**Develop the following:**

**1.** Use the *std::stack* container to create a gaming menu state system. Each state should be encapsulated by a class, with a *State* abstract base class and child state classes such as *Tutorial*, *Info*, *Play*, etc.

**2.** Add member functions and variables and make sure that you virtually override the *Update()* function for each state class.

**3.** Create all states in memory and when changing states, add them to the stack. The top most item will be the active state. This is the state whose *Update()* function is called.

**4.** When exiting a state, pop it off the stack, such that the state below it becomes active again.

**5.** ***Tip***: You will need to control all of these states using some kind of *Menu* class with a main loop within.