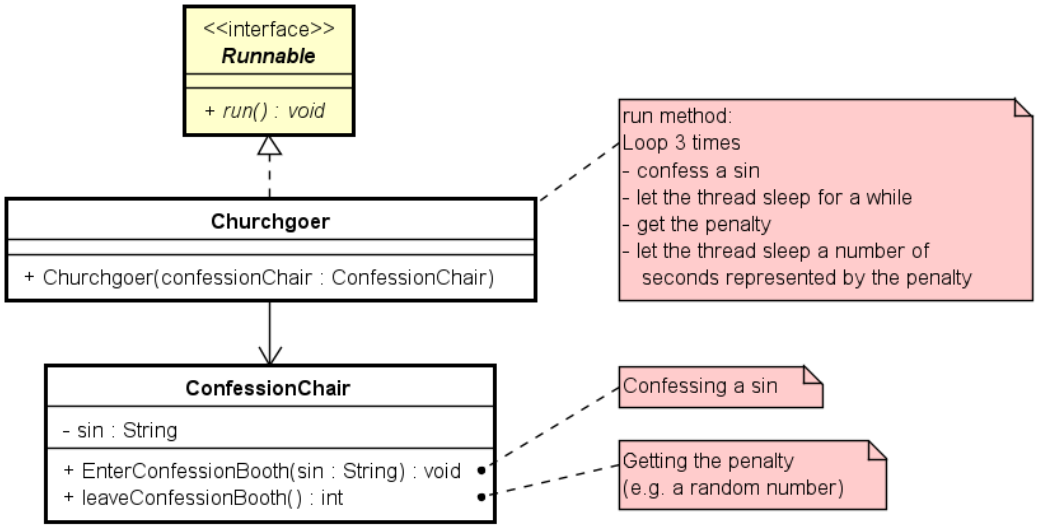
Exercise – Confession Chair

A priest listens to confessions from churchgoers in his confession chair. One churchgoer at a time enters the booth expresses his/her sin and the priest evaluate and gives the penance (how many "Ave Maria" the churchgoer have to say)

Example: A churchgoer expresses his sin: "Father I have sinned – I just kicked a dog". The priest evaluates, and decided that the penalty should be to say 15 Ave Marias.



Part 1

Implement a class `ConfessionChair` as a monitor with the necessary synchronization mechanisms. See class diagram above.

- Method `EnterConfessionBooth`:

  A churchgoer enters the confession booth (when it is available). While expressing his sin, the confession booth is blocked for other churchgoers (until he leaves the confession booth again)

- Method `leaveConfessionBooth`:

  A churchgoer gets the penance (in form of an integer with the number of "Ave Maria" he has to say). When he leaves, the confession booth is now open for another churchgoer.

Part 2

Implement a Runnable class `Churchgoer` to simulates a churchgoer making 3 confessions. After each confession, the churchgoer recites his "Ave Maria" penalty (simulated as the thread sleeping 1 second per "Ave Maria"), and letting other churchgoers use the confession chair. The time between entering and leaving the confession chair could be a fixed number, e.g. 5 seconds.

Part 3

Implement a class with a `main` method to simulate the sins and penance given in the confession chair. Create a number of churchgoers and verify that each churchgoer gets only his/her own penance (that the sin expressed is the same sin being given a penance)