1   >>Start. Show current status (no artists, no performances)
2   No artists registered.
3   No performances scheduled.
4
5   >>Register first artist
6   @Artist object created with name The Jesus And Mary Chain
7   Registered artists:
8   The Jesus And Mary Chain
9   No performances scheduled.
10
11   >>Register second artist
12   @Artist object created with name Milk and Honey Festival
13   Registered artists:
14   The Jesus And Mary Chain
15   Milk and Honey Festival
16   No performances scheduled.
17
18   >>Schedule performance for second artist
19   @Performance object created with artist Milk and Honey Festival at
     2019-03-04T21:30 with duration 149
20   Registered artists:
21   The Jesus And Mary Chain
22   Milk and Honey Festival
23   Scheduled performances:
24   Milk and Honey Festival, 2019-03-04T21:30, 149
25
26   >>Schedule second performance for second artist BEFORE first
27   >>performance, so should be listed after the first.
28   @Performance object created with artist The Jesus And Mary Chain at
     2019-03-08T19:00 with duration 120
29   Registered artists:
30   The Jesus And Mary Chain
31   Milk and Honey Festival
32   Scheduled performances:
33   Milk and Honey Festival, 2019-03-04T21:30, 149
34   The Jesus And Mary Chain, 2019-03-08T19:00, 120
35
36   >>Create performance that starts and finishes within the
37   >>same hour of day. Note the artist has not been registered
38   >>yet, but nor is the performance being scheduled.
39   @Artist object created with name Halestorm
40   @Performance object created with artist Halestorm at 2019-03-13T15:00 with
     duration 59
41   Registered artists:
42   The Jesus And Mary Chain
43   Milk and Honey Festival

44 Scheduled performances:
45   Milk and Honey Festival, 2019-03-04T21:30, 149
46   The Jesus And Mary Chain, 2019-03-08T19:00, 120
47
48 >>Schedule previously-created performance for unregistered artist (no change)
49 Artist has not been registered.
50 Registered artists:
51   The Jesus And Mary Chain
52   Milk and Honey Festival
53 Scheduled performances:
54   Milk and Honey Festival, 2019-03-04T21:30, 149
55   The Jesus And Mary Chain, 2019-03-08T19:00, 120
56
57 >>Register third artist and schedule performance (this time successfully)
58 Registered artists:
59   The Jesus And Mary Chain
60   Milk and Honey Festival
61   Halestorm
62 Scheduled performances:
63   Milk and Honey Festival, 2019-03-04T21:30, 149
64   The Jesus And Mary Chain, 2019-03-08T19:00, 120
65   Halestorm, 2019-03-13T15:00, 59
66
67 >>Try to add overlapping performance (nothing should change)
68 @Artist object created with name Me First And The Gimme Gimmes
69 @Performance object created with artist Me First And The Gimme Gimmes at
    2019-03-04T21:00 with duration 150
70 Invalid performance time. Performances may not be overlap nor go past midnight.
71 Registered artists:
72   The Jesus And Mary Chain
73   Milk and Honey Festival
74   Halestorm
75   Me First And The Gimme Gimmes
76 Scheduled performances:
77   Milk and Honey Festival, 2019-03-04T21:30, 149
78   The Jesus And Mary Chain, 2019-03-08T19:00, 120
79   Halestorm, 2019-03-13T15:00, 59
80
81 >>Try to create performance that finishes after midnight (nothing should change)
82 @Artist object created with name Jay Rock
83 @Performance object created with artist Jay Rock at 2019-03-23T21:30 with duration
    150
84 Invalid performance time. Performances may not be overlap nor go past midnight.
85 Registered artists:
86   The Jesus And Mary Chain
87   Milk and Honey Festival

```
88              Halestorm
89              Me First And The Gimme Gimmes
90              Jay Rock
91      Scheduled performances:
92              Milk and Honey Festival, 2019-03-04T21:30, 149
93              The Jesus And Mary Chain, 2019-03-08T19:00, 120
94              Halestorm, 2019-03-13T15:00, 59
```

One artist object is created for every artist registered as can be seen on line 6, 12, 39 (artist is registered later) 68 and 82. It can also be seen on line 61 that the previously created artist object is registered (without a new object being created). This reiterates that only one artist object is created for every artist registered. The total number of artist objects created is 5, this is the same number as the number of registered artists.

Similarly, only one performance object is created for every performance scheduled as can be seen on line 19, 28, and 40 (performance is scheduled later). There are also two performance objects that are created on 69 and 83. These are created so that we are actually able to check the times on them to see if they overlap with another performance or if they go past midnight. Since these actually do, they are not scheduled and they are counted as errors. The total number of performance objects created with no errors is 3, which is the same number of scheduled performances.

There is also one theatre object created at the very start of the program.

I chose to use a theatre class because this was the obvious thing to do. The artist and performance classes create the objects that the theatre class uses to achieve the functionality that is required. With every performance and artist object created, we needed to store them somewhere as well as being able to register the artist and schedule the performance. This is the main function of the theatre class. I wanted the creation of the object and the registration/scheduling of the object to be separate as some of the testing requires to create the object without actually registering/scheduling it.

This also future proofs the system. If later down the road we wanted to handle multiple theatres, it will be much easier with a theatre class that can create multiple theatre objects.

The second class I chose to use is a time class. This is a class of static methods that handles all the conversions from the string format of time that is inputted into the system into a format that is more useful for us. I chose to use this class as it significantly increases the readability of the program as compared to when these methods were put in the theatre class. This also helps us to achieve abstraction as everything to do with time goes in the time class which makes sense from a good design point of view.