

Using Partial Mocks and Advanced Mocking Techniques



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Overview



Advanced techniques:

- Strict mocks and loose mocks
- Throw exceptions from mock objects
- Raise events from mock objects

Partial mocks

- Overview of partial mocks
- Create a partial mock
- Partial mocks and non-deterministic code (e.g. `DateTime.Now`)
- Mocking protected members

An alternative to partial mocks



Raising Events from Mock Objects

```
public class CreditScoreResultEventArgs : EventArgs
{
    public int Score { get; set; }
}
```

```
public interface ICreditScorer
{
    event EventHandler<CreditScoreResultEventArgs> ResultAvailable;

    // etc.
}
```



Raising Events from Mock Objects

```
var mockCreditScorer = new Mock<ICreditScorer>();

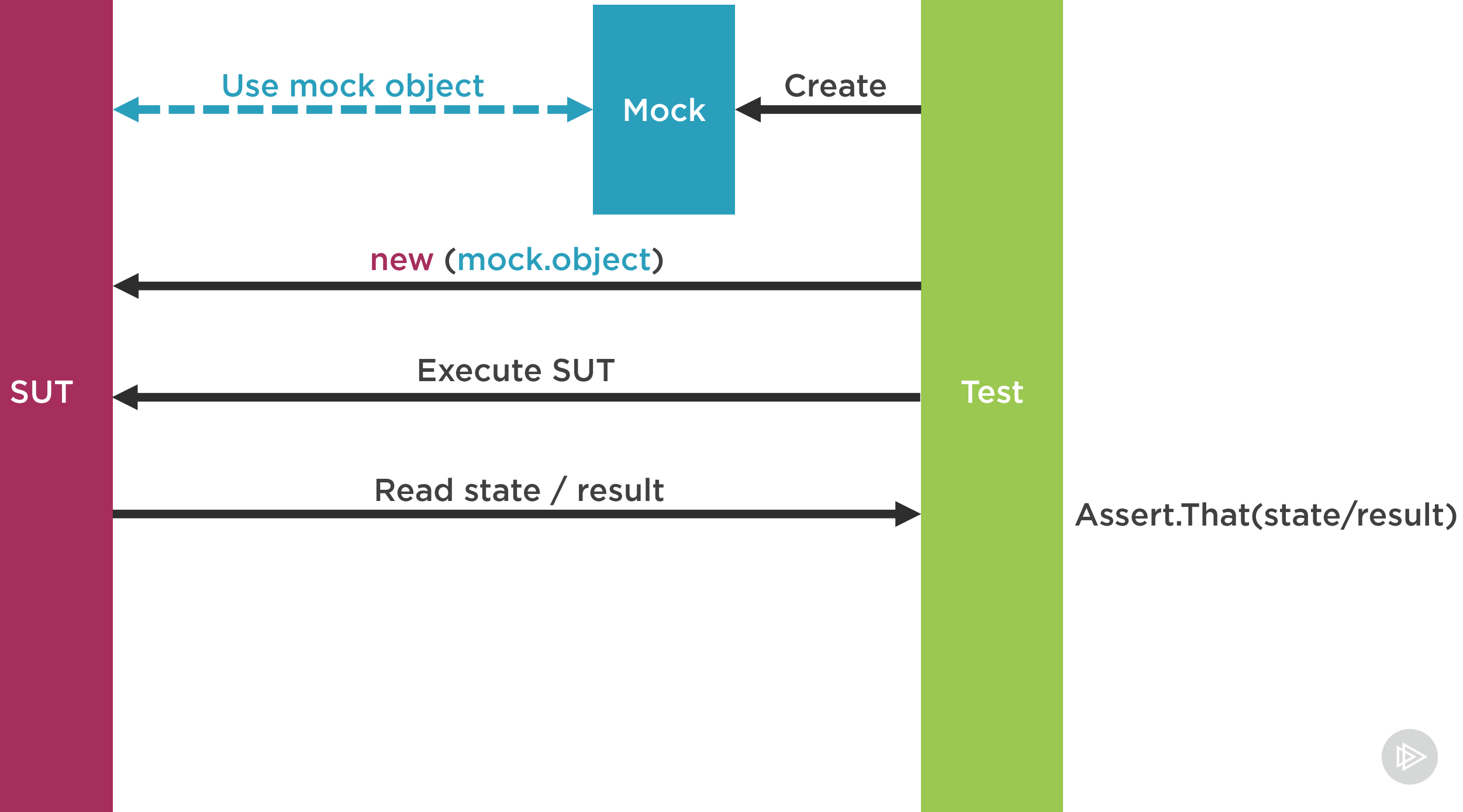
// Manually raise event in test code
mockCreditScorer.Raise(x => x.ResultAvailable += null,
                       new CreditScoreResultEventArgs());

// Automatically when mock method called by SUT
mockCreditScorer.Setup(x => x.CalculateScore(It.IsAny<string>(),
                                             It.IsAny<string>()))
                 .Raises(x => x.ResultAvailable += null,
                       new CreditScoreResultEventArgs());
```



Partial Mocks





new Mock<Interface>
new Mock<Class>

Mock

Create

new (mock.object)

SUT

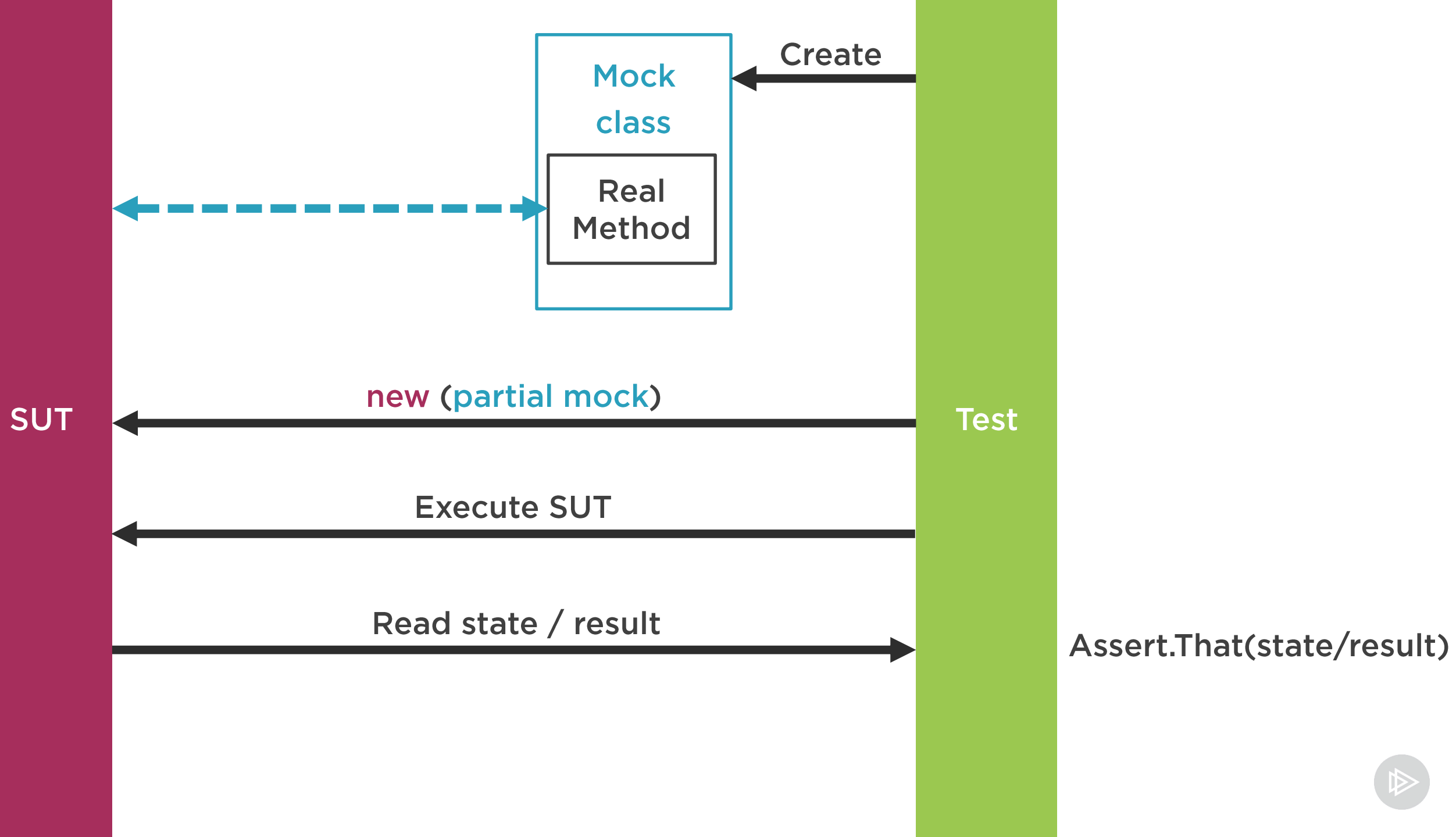
Execute SUT

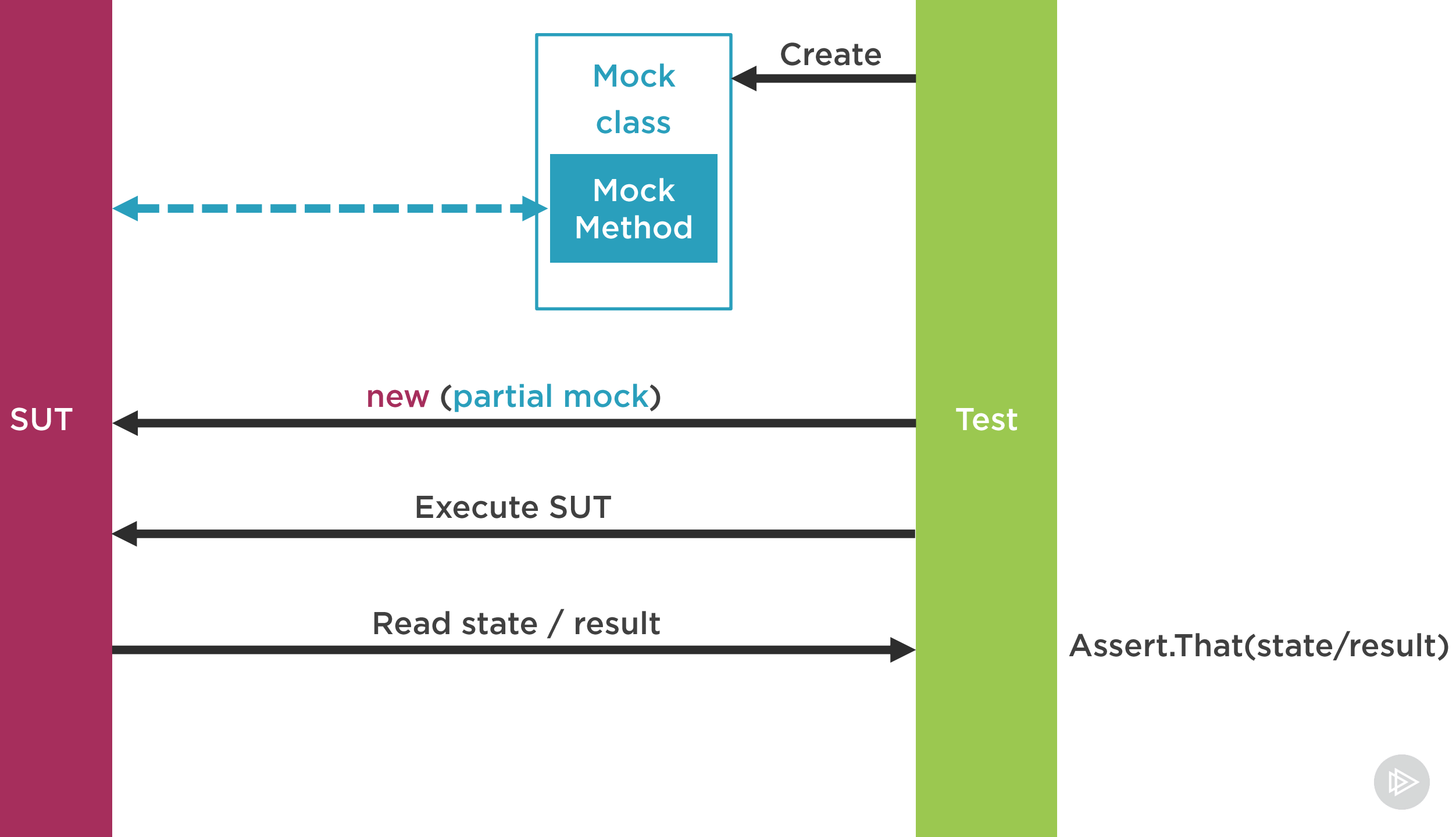
Test

Read state / result

Assert.That(state/result)







SUT

Hard to test
File IO, etc.
DateTime.Now

Mock
class

Real
Method

Mock
Method

Create

Test

`new (partial mock)`

Execute SUT

Read state / result

`Assert.That(state/result)`



Summary



`MockBehavior.Strict`

`.Throws<InvalidOperationException>()`

`mockCreditScorer.Raise(...)`

`.Setup(...).Raises(...)`

Overview of partial mocks

`new Mock<IdentityVerifierServiceGateway>`

Refactored `DateTime.Now` code

`.Protected().Setup<bool>("CallService")`

`.Protected().As<T>`

An alternative to partial mocks

