**ECSE 429 – Software Validation – Assignment 2**

**Part 0:**

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**Question 1:**

modify

voteFails

voteFails

introduceInSenate/{isCommonsBill=false}

ctor

withdrawn

withdrawn

inPrepartation

alpha

inPrepartation

firstReading

firstReadingS

withdrawn

withdraw

withdraw

withdrawn

VotePasses

VotePasses

voteFails

withdrawn

voteFails

withdrawn

withdraw

voteFails

voteFails

voteFails

withdraw

withdraw

voteFails

thirdReading

secondReading

withdrawn

withdrawn

withdrawn

withdrawn

committeeConsideration

thirdReadingS

withdrawn

withdrawn

committeeConsiderationS

withdrawn

withdrawn

secondReadingS

withdrawn

VotePasses

VotePasses

VotePasses

VotePasses

withdraw

votePasses   
[getIsCommonsBill()]

withdraw

withdrawn

withdraw

votePasses [getIsCommonsBill()]

royalAssent

actOfParliament

awaitingRoyalAssent

votePasses   
[!getIsCommonsBill()]

firstReading

firstReadingS

votePasses [!getIsCommonsBill()]

awaitingRoyalAssent

**Question 2:**

The sneak paths for the Bill class based on the state machine provided are:

For the state **inPreparation**, the possible inputs that are legal and unspecified for the state are:

* votePasses
* voteFails
* modify
* withdraw
* royalAssent

For the state **firstReading**, the possible inputs that are legal and unspecified for the state are:

* modify
* introduceInHouse
* introduceInSenate
* royalAssent

For the state **secondReading**, the possible inputs that are legal and unspecified for the state are:

* modify
* introduceInHouse
* introduceInSenate
* royalAssent

For the state **committeeConsideration**, the possible inputs that are legal and unspecified for the state are:

* modify
* introduceInHouse
* introduceInSenate
* royalAssent

For the state **thirdReading**, the possible inputs that are legal and unspecified for the state are:

* modify
* introduceInHouse
* introduceInSenate
* royalAssent

For the state **withdraw**, the possible inputs that are legal and unspecified for the state are:

* votePasses
* voteFails
* withdraw
* introduceInHouse
* introduceInSenate
* royalAssent

For the state **firstReadingS**, the possible inputs that are legal and unspecified for the state are:

* modify
* introduceInHouse
* introduceInSenate
* royalAssent

For the state **secondReadingS**, the possible inputs that are legal and unspecified for the state are:

* modify
* introduceInHouse
* introduceInSenate
* royalAssent

For the state **committeeConsiderationS**, the possible inputs that are legal and unspecified for the state are:

* modify
* introduceInHouse
* introduceInSenate
* royalAssent

For the state **thirdReadingS**, the possible inputs that are legal and unspecified for the state are:

* modify
* introduceInHouse
* introduceInSenate
* royalAssent

For the state **awaitingRoyalAssent**, the possible inputs that are legal and unspecified for the state are:

* votePasses
* voteFails
* modify
* withdraw
* introduceInHouse
* introduceInSenate

For the state **awaitingRoyalAssent**, the possible inputs that are legal and unspecified for the state are:

* votePasses
* voteFails
* modify
* withdraw
* introduceInHouse
* introduceInSenate
* royalAssent

Note: Although voteDenied() is a valid method in the code, it was not defined on the state transition diagram and therefore it is treated as an invalid input to the system. As a result, it is not included as a sneak path and thus not used in the sneak path test cases.

**Question 3:**

**Test Case # 1 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 1.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 1.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 1.3 | firstReading | voteFails() | - | billStateInHouseOfCommons=null  billState=withdrawn  wasEventProcessed=true | withdrawn |
| 1.4 | withdrawn | modify() | - | billState=inPreparation  wasEventProcessed=true | inPreparation |

**Test Case # 2 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 2.1 | - | Constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 2.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 2.3 | firstReading | withdraw() | - | billStateInHouseOfCommons=null  billState=withdrawn  wasEventProcessed=true | withdrawn |

**Test Case # 3 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 3.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 3.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 3.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 3.4 | secondReading | voteFails() | - | billStateInHouseOfCommons=null  billState=withdrawn  wasEventProcessed=true | withdrawn |

**Test Case # 4 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 4.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 4.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 4.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 4.4 | secondReading | withdraw() | - | billStateInHouseOfCommons=null  billState=withdrawn  wasEventProcessed=true | withdrawn |

**Test Case # 5 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 5.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 5.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 5.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 5.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 5.5 | committeeConsideration | voteFails() | - | billStateInHouseOfCommons=null  billState=withdrawn  wasEventProcessed=true | withdrawn |

**Test Case # 6 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 6.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 6.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 6.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 6.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 6.5 | committeeConsideration | withdraw() | - | billStateInHouseOfCommons=null  billState=withdrawn  wasEventProcessed=true | withdrawn |

**Test Case # 7 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 7.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 7.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 7.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 7.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 7.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 7.6 | thirdReading | voteFails() | - | billStateInHouseOfCommons=null  billState=withdrawn  wasEventProcessed=true | withdrawn |

**Test Case # 8 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 8.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 8.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 8.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 8.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 8.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 8.6 | thirdReading | withdraw() | - | billStateInHouseOfCommons=null  billState=withdrawn  wasEventProcessed=true | withdrawn |

**Test Case # 9 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 9.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 9.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 9.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 9.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 9.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 9.6 | thirdReading | votePasses() | getIsCommonsBill() = false | billStateInHouseOfCommons=null  billState=awaitingRoyalAssent  wasEventProcessed=true | awaitingRoyalAssent |

**Test Case # 10 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 10.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 10.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 10.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 10.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 10.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 10.6 | thirdReading | votePasses() | getIsCommonsBill = true | billStateInHouseOfCommons=null  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |

**Test Case # 11 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 11.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 11.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 11.3 | firstReadingS | voteFails() | - | billStateInSenate=null  billState=withdrawn  wasEventProcessed=true | withdrawn |

**Test Case # 12 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 12.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 12.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 12.3 | firstReadingS | withdraw() | - | billStateInSenate=null  billState=withdrawn  wasEventProcessed=true | withdrawn |

**Test Case # 13 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 13.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 13.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 13.3 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 13.4 | secondReadingS | voteFails() | - | billStateInSenate=null  billState=withdrawn  wasEventProcessed=true | withdrawn |

**Test Case # 14 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 14.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 14.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 14.3 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 14.4 | secondReadingS | withdraw() | - | billStateInSenate=null  billState=withdrawn  wasEventProcessed=true | withdrawn |

**Test Case # 15 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 15.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 15.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 15.3 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 15.4 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 15.5 | committeeConsiderationS | voteFails() | - | billStateInSenate=null  billState=withdrawn  wasEventProcessed=true | withdrawn |

**Test Case # 16 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 16.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 16.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 16.3 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 16.4 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 16.5 | committeeConsiderationS | withdraw() | - | billStateInSenate=null  billState=withdrawn  wasEventProcessed=true | withdrawn |

**Test Case # 17 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 17.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 17.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 17.3 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 17.4 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 17.5 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  isCommonsBill=true  wasEventProcessed=true | thirdReadingS |
| 17.6 | thirdReadingS | voteFails() | - | billStateInSenate=null  billState=withdrawn  wasEventProcessed=true | withdrawn |

**Test Case # 18 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 18.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 18.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 18.3 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 18.4 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 18.5 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  isCommonsBill=true  wasEventProcessed=true | thirdReadingS |
| 18.6 | thirdReadingS | withdraw() | - | billStateInSenate=null  billState=withdrawn  wasEventProcessed=true | withdrawn |

**Test Case # 19 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 19.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 19.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 19.3 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 19.4 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 19.5 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  wasEventProcessed=true | thirdReadingS |
| 19.6 | thirdReadingS | votePasses() | getIsCommonsBill() =true | billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=true | awaitingRoyalAssent |
| 19.7 | awaitingRoyalAssent | royalAssent() | - | billState=actOfParliament  wasEventProcessed=true | actOfParliament |

**Test Case # 20 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 20.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 20.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 20.3 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 20.4 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 20.5 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  wasEventProcessed=true | thirdReadingS |
| 20.6 | thirdReadingS | votePasses() | getIsCommonsBill() =false | billStateInSenate=null  billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |

**Test Case # 21 - Conformance Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 21.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 21.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 21.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 21.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 21.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 21.6 | thirdReading | votePasses() | getIsCommonsBill = true | billStateInHouseOfCommons=null  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 21.7 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 21.8 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 21.9 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  wasEventProcessed=true | thirdReadingS |
| 21.10 | thirdReadingS | votePasses() | getIsCommonsBill() =true | billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=true | awaitingRoyalAssent |
| 21.11 | awaitingRoyalAssent | royalAssent() | - | billState=actOfParliament  wasEventProcessed=true | actOfParliament |

**Test Case # 22 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 22.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 22.2 | inPreparation | votePasses() | - | Ignored  (isCommonBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null) | inPreparation |

**Test Case # 23 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 23.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 23.2 | inPreparation | voteFails() | - | ignored  (isCommonBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null) | inPreparation |

**Test Case # 24 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 24.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 24.2 | inPreparation | modify() | - | ignored  (isCommonBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null) | inPreparation |

**Test Case # 25 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 25.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 25.2 | inPreparation | withdraw() | - | ignored  (isCommonBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null  wasEventProcessed=false) | inPreparation |

**Test Case # 26 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 26.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 26.2 | inPreparation | royalAssent() | - | ignored  (isCommonBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null  wasEventProcessed=false) | inPreparation |

**Test Case # 27 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 27.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 27.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 27.3 | firstReading | modify() | - | ignored  (billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=false) | firstReading |

**Test Case # 28 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 28.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 28.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 28.3 | firstReading | introduceInHouse() | - | ignored  (billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=false) | firstReading |

**Test Case # 29 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 29.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 29.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 29.3 | firstReading | introduceInSenate() | - | ignored  (billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=false) | firstReading |

**Test Case # 30 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 30.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 30.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 30.3 | firstReading | royalAssent() | - | ignored  (billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=false) | firstReading |

**Test Case # 31 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 31.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 31.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 31.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 31.4 | secondReading | modify() | - | Ignored  (billStateInHouseOfCommons=secondReading  wasEventProcessed=false) | secondReading |

**Test Case # 32 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 32.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 32.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 32.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 32.4 | secondReading | introduceInHouse() | - | Ignored  (billStateInHouseOfCommons=secondReading  wasEventProcessed=false) | secondReading |

**Test Case # 33 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 33.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 33.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 33.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 33.4 | secondReading | introduceInSenate() | - | Ignored  (billStateInHouseOfCommons=secondReading  wasEventProcessed=false) | secondReading |

**Test Case # 34 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 34.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 34.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 34.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 34.4 | secondReading | royalAssent() | - | Ignored  (billStateInHouseOfCommons=secondReading  wasEventProcessed=false) | secondReading |

**Test Case # 35 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 35.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 35.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 35.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 35.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 35.5 | committeeConsideration | modify() | - | Ignored  (billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=false) | committeeConsideration |

**Test Case # 36 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 36.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 36.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 36.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 36.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 36.5 | committeeConsideration | introduceInHouse() | - | Ignored  (billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=false) | committeeConsideration |

**Test Case # 37 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 37.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 37.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 37.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 37.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 37.5 | committeeConsideration | introduceInSenate() | - | Ignored  (billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=false) | committeeConsideration |

**Test Case # 38 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 38.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 38.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 38.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 38.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 38.5 | committeeConsideration | royalAssent() | - | Ignored  (billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=false) | committeeConsideration |

**Test Case # 39 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 39.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 39.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 39.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 39.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 39.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 39.6 | thirdReading | modify() | - | Ignored  (billStateInHouseOfCommons=thirdReading  wasEventProcessed=false) | thirdReading |

**Test Case # 40 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 40.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 40.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 40.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 40.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 40.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 40.6 | thirdReading | introduceInHouse() | - | Ignored  (billStateInHouseOfCommons=thirdReading  wasEventProcessed=false) | thirdReading |

**Test Case # 41 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 41.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 41.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 41.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 41.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 41.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 41.6 | thirdReading | introduceInSenate() | - | Ignored  (billStateInHouseOfCommons=thirdReading  wasEventProcessed=false) | thirdReading |

**Test Case # 42 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 42.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 42.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 42.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 42.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 42.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 42.6 | thirdReading | royalAssent() | - | Ignored  (billStateInHouseOfCommons=thirdReading  wasEventProcessed=false) | thirdReading |

**Test Case # 43 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 43.1 | - | Constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 43.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 43.3 | firstReading | withdraw() | - | billStateInHouseOfCommons=null  billState=withdrawn  wasEventProcessed=true | withdrawn |
| 43.4 | withdrawn | votePasses() | - | Ignored  (billStateInHouseOfCommons=null  billState=withdrawn  wasEventProcessed=false) | withdrawn |

**Test Case # 44 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 44.1 | - | Constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 44.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 44.3 | firstReading | withdraw() | - | billStateInHouseOfCommons=null  billState=withdrawn  wasEventProcessed=true | withdrawn |
| 44.4 | withdrawn | voteFails() | - | Ignored  (billStateInHouseOfCommons=null  billState=withdrawn  wasEventProcessed=false) | withdrawn |

**Test Case # 45 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 45.1 | - | Constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 45.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 45.3 | firstReading | withdraw() | - | billStateInHouseOfCommons=null  billState=withdrawn  wasEventProcessed=true | withdrawn |
| 45.4 | withdrawn | withdraw() | - | Ignored  (billStateInHouseOfCommons=null  billState=withdrawn  wasEventProcessed=false) | withdrawn |

**Test Case # 46 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 46.1 | - | Constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 46.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 46.3 | firstReading | withdraw() | - | billStateInHouseOfCommons=null  billState=withdrawn  wasEventProcessed=true | withdrawn |
| 46.4 | withdrawn | introduceInHouse() | - | Ignored  (billStateInHouseOfCommons=null  billState=withdrawn  wasEventProcessed=false) | withdrawn |

**Test Case # 47 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 47.1 | - | Constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 47.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 47.3 | firstReading | withdraw() | - | billStateInHouseOfCommons=null  billState=withdrawn  wasEventProcessed=true | withdrawn |
| 47.4 | withdrawn | introduceInSenate() | - | Ignored  (billStateInHouseOfCommons=null  billState=withdrawn  wasEventProcessed=false) | withdrawn |

**Test Case # 48 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 48.1 | - | Constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 48.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 48.3 | firstReading | withdraw() | - | billStateInHouseOfCommons=null  billState=withdrawn  wasEventProcessed=true | withdrawn |
| 48.4 | withdrawn | royalAssent() | - | Ignored  (billStateInHouseOfCommons=null  billState=withdrawn  wasEventProcessed=false) | withdrawn |

**Test Case # 49 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 49.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 49.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 49.3 | firstReadingS | modify() | - | Ignored  (isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=false) | firstReadingS |

**Test Case # 50 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 50.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 50.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 50.3 | firstReadingS | introduceInHouse() | - | Ignored  (isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=false) | firstReadingS |

**Test Case # 51 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 51.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 51.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 51.3 | firstReadingS | introduceInSenate() | - | Ignored  (isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=false) | firstReadingS |

**Test Case # 52 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 52.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 52.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 52.3 | firstReadingS | royalAssent() | - | Ignored  (isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=false) | firstReadingS |

**Test Case # 53 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 53.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 53.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 53.3 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 53.4 | secondReadingS | modify() | - | Ignored  (billStateInSenate=secondReadingS  wasEventProcessed=false) | secondReadingS |

**Test Case # 54 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 54.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 54.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 54.3 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 54.4 | secondReadingS | introduceInHouse() | - | Ignored  (billStateInSenate=secondReadingS  wasEventProcessed=false) | secondReadingS |

**Test Case # 55 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 55.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 55.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 55.3 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 55.4 | secondReadingS | introduceInSenate() | - | Ignored  (billStateInSenate=secondReadingS  wasEventProcessed=false) | secondReadingS |

**Test Case # 56 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 56.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 56.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 56.3 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 56.4 | secondReadingS | royalAssent() | - | Ignored  (billStateInSenate=secondReadingS  wasEventProcessed=false) | secondReadingS |

**Test Case # 57 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 57.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 57.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 57.3 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 57.4 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 57.5 | committeeConsiderationS | modify() | - | Ignored  (billStateInSenate=committeeConsiderationS  wasEventProcessed=false) | committeeConsiderationS |

**Test Case # 58 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 58.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 58.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 58.3 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 58.4 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 58.5 | committeeConsiderationS | introduceInHouse() | - | Ignored  (billStateInSenate=committeeConsiderationS  wasEventProcessed=false) | committeeConsiderationS |

**Test Case # 59 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 59.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 59.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 59.3 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 59.4 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 59.5 | committeeConsiderationS | introduceInSenate() | - | Ignored  (billStateInSenate=committeeConsiderationS  wasEventProcessed=false) | committeeConsiderationS |

**Test Case # 60 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 60.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 60.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 60.3 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 60.4 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 60.5 | committeeConsiderationS | royalAssent() | - | Ignored  (billStateInSenate=committeeConsiderationS  wasEventProcessed=false) | committeeConsiderationS |

**Test Case # 61 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 61.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 61.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 61.3 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 61.4 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 61.5 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  wasEventProcessed=true | thirdReadingS |
| 61.6 | thirdReadingS | modify() | - | Ignored  (billStateInSenate=thirdReadingS  wasEventProcessed=false) | thirdReadingS |

**Test Case # 62 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 62.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 62.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 62.3 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 62.4 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 62.5 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  wasEventProcessed=true | thirdReadingS |
| 62.6 | thirdReadingS | introduceInHouse() | - | Ignored  (billStateInSenate=thirdReadingS  wasEventProcessed=false) | thirdReadingS |

**Test Case # 63 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 63.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 63.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 63.3 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 63.4 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 63.5 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  wasEventProcessed=true | thirdReadingS |
| 63.6 | thirdReadingS | introduceInSenate() | - | Ignored  (billStateInSenate=thirdReadingS  wasEventProcessed=false) | thirdReadingS |

**Test Case # 64 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 64.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 64.2 | inPreparation | introduceInSenate() | - | isCommonsBill=false  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 64.3 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 64.4 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 64.5 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  wasEventProcessed=true | thirdReadingS |
| 64.6 | thirdReadingS | royalAssent() | - | Ignored  (billStateInSenate=thirdReadingS  wasEventProcessed=false) | thirdReadingS |

**Test Case # 65 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 65.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 65.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 65.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 65.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 65.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 65.6 | thirdReading | votePasses() | getIsCommonsBill = true | billStateInHouseOfCommons=null  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 65.7 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 65.8 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 65.9 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  wasEventProcessed=true | thirdReadingS |
| 65.10 | thirdReadingS | votePasses() | getIsCommonsBill() = true | billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=true | awaitingRoyalAssent |
| 65.11 | awaitingRoyalAssent | modify() | - | Ignored  (billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=false) | awaitingRoyalAssent |

**Test Case # 66 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 66.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 66.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 66.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 66.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 66.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 66.6 | thirdReading | votePasses() | getIsCommonsBill = true | billStateInHouseOfCommons=null  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 66.7 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 66.8 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 66.9 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  wasEventProcessed=true | thirdReadingS |
| 66.10 | thirdReadingS | votePasses() | getIsCommonsBill() = true | billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=true | awaitingRoyalAssent |
| 66.11 | awaitingRoyalAssent | voteFails() | - | Ignored  (billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=false) | awaitingRoyalAssent |

**Test Case # 67 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 67.1 | - | Constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 67.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 67.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 67.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 67.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 67.6 | thirdReading | votePasses() | getIsCommonsBill = true | billStateInHouseOfCommons=null  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 67.7 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 67.8 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 67.9 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  wasEventProcessed=true | thirdReadingS |
| 67.10 | thirdReadingS | votePasses() | getIsCommonsBill() = true | billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=true | awaitingRoyalAssent |
| 67.11 | awaitingRoyalAssent | votePasses() | - | Ignored  (billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=false) | awaitingRoyalAssent |

**Test Case # 68 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 68.1 | - | Constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 68.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 68.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 68.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 68.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 68.6 | thirdReading | votePasses() | getIsCommonsBill = true | billStateInHouseOfCommons=null  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 68.7 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 68.8 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 68.9 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  wasEventProcessed=true | thirdReadingS |
| 68.10 | thirdReadingS | votePasses() | getIsCommonsBill() = true | billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=true | awaitingRoyalAssent |
| 68.11 | awaitingRoyalAssent | introduceInHouse() | - | Ignored  (billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=false) | awaitingRoyalAssent |

**Test Case # 69 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 69.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 69.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 69.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 69.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 69.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 69.6 | thirdReading | votePasses() | getIsCommonsBill = true | billStateInHouseOfCommons=null  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 69.7 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 69.8 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 69.9 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  wasEventProcessed=true | thirdReadingS |
| 69.10 | thirdReadingS | votePasses() | getIsCommonsBill() = true | billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=true | awaitingRoyalAssent |
| 69.11 | awaitingRoyalAssent | introduceToSenate() | - | Ignored  (billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=false) | awaitingRoyalAssent |

**Test Case # 70 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 70.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 70.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 70.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 70.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 70.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 70.6 | thirdReading | votePasses() | getIsCommonsBill = true | billStateInHouseOfCommons=null  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 70.7 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 70.8 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 70.9 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  wasEventProcessed=true | thirdReadingS |
| 70.10 | thirdReadingS | votePasses() | getIsCommonsBill() = true | billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=true | awaitingRoyalAssent |
| 70.11 | awaitingRoyalAssent | withdraw() | - | Ignored  (billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=false) | awaitingRoyalAssent |

**Test Case # 71 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 71.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 71.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 71.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 71.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 71.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 71.6 | thirdReading | votePasses() | getIsCommonsBill = true | billStateInHouseOfCommons=null  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 71.7 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 71.8 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 71.9 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  wasEventProcessed=true | thirdReadingS |
| 71.10 | thirdReadingS | votePasses() | getIsCommonsBill() =true | billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=true | awaitingRoyalAssent |
| 71.11 | awaitingRoyalAssent | royalAssent() | - | billState=actOfParliament  wasEventProcessed=true | actOfParliament |
| 71.12 | actOfParliament | modify() | - | Ignored  (billState=actOfParliament  wasEventProcessed=false) | actOfParliament |

**Test Case # 72 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 72.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 72.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 72.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 72.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 72.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 72.6 | thirdReading | votePasses() | getIsCommonsBill = true | billStateInHouseOfCommons=null  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 72.7 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 72.8 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 72.9 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  wasEventProcessed=true | thirdReadingS |
| 72.10 | thirdReadingS | votePasses() | getIsCommonsBill() =true | billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=true | awaitingRoyalAssent |
| 72.11 | awaitingRoyalAssent | royalAssent() | - | billState=actOfParliament  wasEventProcessed=true | actOfParliament |
| 72.12 | actOfParliament | votePasses() | - | Ignored  (billState=actOfParliament  wasEventProcessed=false) | actOfParliament |

**Test Case # 73 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 73.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 73.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 73.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 73.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 73.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 73.6 | thirdReading | votePasses() | getIsCommonsBill = true | billStateInHouseOfCommons=null  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 73.7 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 73.8 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 73.9 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  wasEventProcessed=true | thirdReadingS |
| 73.10 | thirdReadingS | votePasses() | getIsCommonsBill() =true | billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=true | awaitingRoyalAssent |
| 73.11 | awaitingRoyalAssent | royalAssent() | - | billState=actOfParliament  wasEventProcessed=true | actOfParliament |
| 73.12 | actOfParliament | voteFails() | - | Ignored  (billState=actOfParliament  wasEventProcessed=false) | actOfParliament |

**Test Case # 74 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 74.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 74.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 74.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 74.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 74.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 74.6 | thirdReading | votePasses() | getIsCommonsBill = true | billStateInHouseOfCommons=null  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 74.7 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 74.8 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 74.9 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  wasEventProcessed=true | thirdReadingS |
| 74.10 | thirdReadingS | votePasses() | getIsCommonsBill() =true | billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=true | awaitingRoyalAssent |
| 74.11 | awaitingRoyalAssent | royalAssent() | - | billState=actOfParliament  wasEventProcessed=true | actOfParliament |
| 74.12 | actOfParliament | introduceInHouse() | - | Ignored  (billState=actOfParliament  wasEventProcessed=false) | actOfParliament |

**Test Case # 75 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 75.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 75.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 75.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 75.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 75.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 75.6 | thirdReading | votePasses() | getIsCommonsBill = true | billStateInHouseOfCommons=null  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 75.7 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 75.8 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 75.9 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  wasEventProcessed=true | thirdReadingS |
| 75.10 | thirdReadingS | votePasses() | getIsCommonsBill() =true | billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=true | awaitingRoyalAssent |
| 75.11 | awaitingRoyalAssent | royalAssent() | - | billState=actOfParliament  wasEventProcessed=true | actOfParliament |
| 75.12 | actOfParliament | introduceToSenate() | - | Ignored  (billState=actOfParliament  wasEventProcessed=false) | actOfParliament |

**Test Case # 76 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 76.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 76.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 76.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 76.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 76.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 76.6 | thirdReading | votePasses() | getIsCommonsBill = true | billStateInHouseOfCommons=null  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 76.7 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 76.8 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 76.9 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  wasEventProcessed=true | thirdReadingS |
| 76.10 | thirdReadingS | votePasses() | getIsCommonsBill() =true | billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=true | awaitingRoyalAssent |
| 76.11 | awaitingRoyalAssent | royalAssent() | - | billState=actOfParliament  wasEventProcessed=true | actOfParliament |
| 76.12 | actOfParliament | withdraw() | - | Ignored  (billState=actOfParliament  wasEventProcessed=false) | actOfParliament |

**Test Case # 77 - Sneak Path Test - Objects Needed: billState, billStateInHouse, billStateInSenate, isCommonsBill**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Start State** | **Event** | **Condition** | **Reaction** | **New State** |
| 77.1 | - | constructor | - | isCommonsBill=true  billState=inPreparation  billStateInHouseOfCommons=null  billStateInSenate=null | inPreparation |
| 77.2 | inPreparation | introduceInHouse() | - | billState=inHouseOfCommons  billStateInHouseOfCommons=firstReading  wasEventProcessed=true | firstReading |
| 77.3 | firstReading | votePasses() | - | billStateInHouseOfCommons=secondReading  wasEventProcessed=true | secondReading |
| 77.4 | secondReading | votePasses() | - | billStateInHouseOfCommons=committeeConsideration  wasEventProcessed=true | committeeConsideration |
| 77.5 | committeeConsideration | votePasses() | - | billStateInHouseOfCommons=thirdReading  wasEventProcessed=true | thirdReading |
| 77.6 | thirdReading | votePasses() | getIsCommonsBill = true | billStateInHouseOfCommons=null  billState=inSenate  billStateInSenate=firstReadingS  wasEventProcessed=true | firstReadingS |
| 77.7 | firstReadingS | votePasses() | - | billStateInSenate=secondReadingS  wasEventProcessed=true | secondReadingS |
| 77.8 | secondReadingS | votePasses() | - | billStateInSenate=committeeConsiderationS  wasEventProcessed=true | committeeConsiderationS |
| 77.9 | committeeConsiderationS | votePasses() | - | billStateInSenate=thirdReadingS  wasEventProcessed=true | thirdReadingS |
| 77.10 | thirdReadingS | votePasses() | getIsCommonsBill() =true | billStateInSenate=null  billState=awaitingRoyalAssent  wasEventProcessed=true | awaitingRoyalAssent |
| 77.11 | awaitingRoyalAssent | royalAssent() | - | billState=actOfParliament  wasEventProcessed=true | actOfParliament |
| 77.12 | actOfParliament | royalAssent() | - | Ignored  (billState=actOfParliament  wasEventProcessed=false) | actOfParliament |

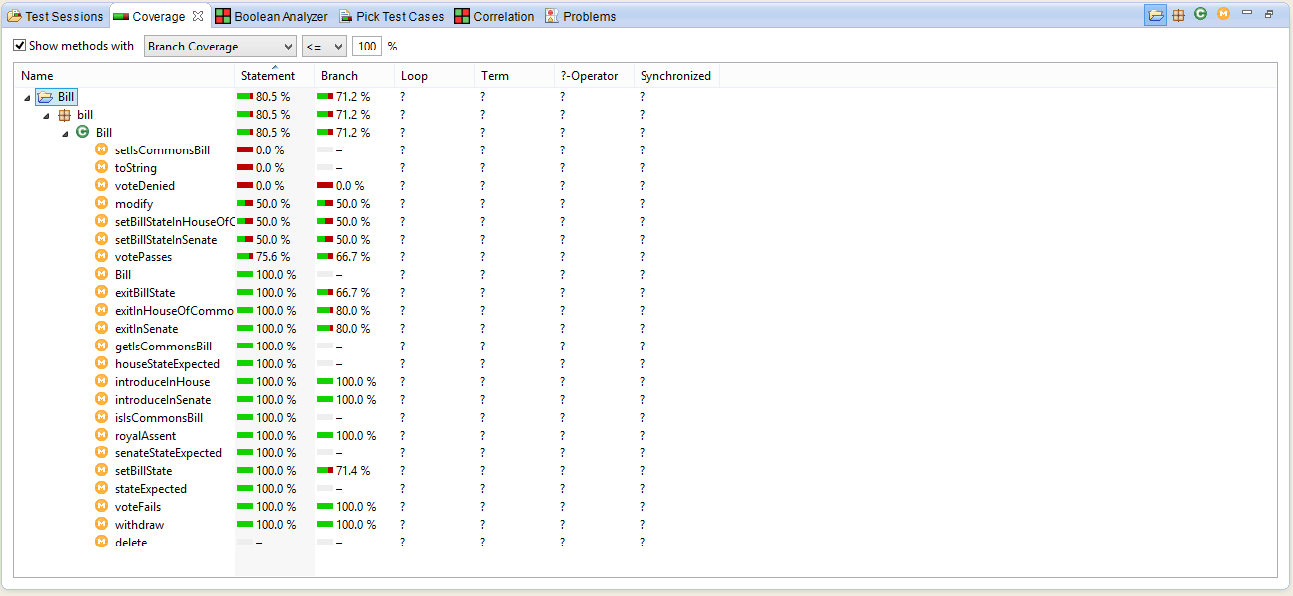
**Question 4:**

See source code

**Question 5:**

1. Failed – because voteFails leads to a different state (secondReading) than expected
2. Passed
3. Failed – because voteFails leads to a different state (secondReading) than expected
4. Passed
5. Failed – because voteFails leads to a different state (secondReading) than expected
6. Passed
7. Failed – because voteFails leads to a different state (secondReading) than expected
8. Passed
9. Failed – because voteFails leads to a different state (secondReading) than expected
10. Passed
11. Passed
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66. Passed
67. Passed
68. Passed
69. Passed
70. Passed
71. Passed
72. Passed
73. Passed
74. Passed
75. Passed
76. Passed

Branch coverage:

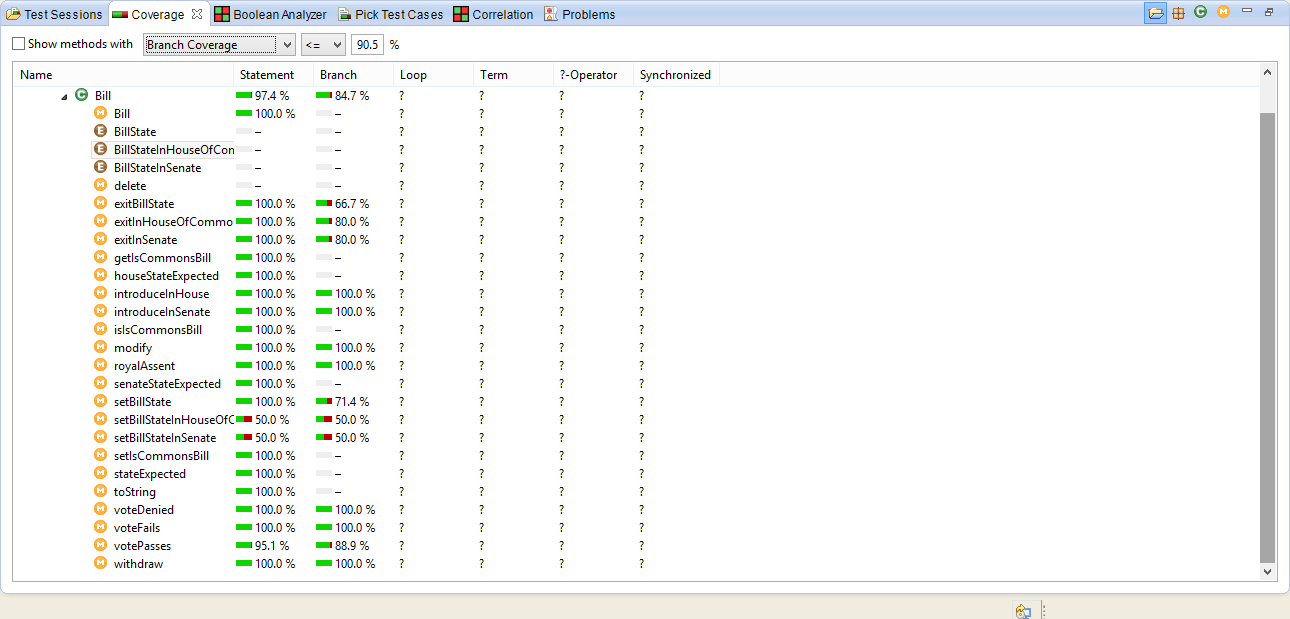


This is expected as the test cases only cover the public methods that are visible from outside the class. The state machine also does not specify all the branches that may be available in the control flow. Some transitions are specified and implemented but not used by the state machine.

**Question 6:**

100% branch coverage is not possible because some branches are not accessible from outside the class. For example, exitInHouseOfCommons() and exitInSenate() cannot execute their default cases because the methods are not visible outside for sneak path test.

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Input** | **Expected output** | **Coverage goal** |
| 78 | billState = withdrawn | billState = inPreparation  wasEventProcessed = true | case withdrawn in modify() |
| 79 | billState = inHouseOfCommons  billStateInHouseOfCommons = firstReading  billStateInSenate = Null | billStateInHouseOfCommons = lastReading  wasEventProcessed = true | case inHouseOfCommons in voteDenied() |
| 80 | billState = inSenate  billStateInSenate = firstReadingS  billStateInHouseOfCommons = Null | billStateInSenate = firstReadingS  wasEventProcessed = true | case inSenate in voteDenied() |
| 81 | billState = inPreparation  billStateInHouseOfCommons = Null  billStateInSenate = Null | billState = inPreparation  billStateInHouseOfCommons = Null  billStateInSenate = Null  wasEventProcessed = false | Case default in voteDenied() |
| 82 | billState = inHouseOfCommons  billStateInHouseOfCommons = thirdReading  isCommonsBill = false | billState = awaitingRoyalAssent  billStateInHouseOfCommons = Null  wasEventProcessed = true | case thirdReading with isCommonsBill = false in votePasses() |
| 83 | billState = inSenate  billStateInSenate = thirdReadingS  isCommonsBill = false | billState = inHouseOfCommons  billStateInSenate = Null  billStateInHouseOfCommons = firstReading  wasEventProcessed = true | case thirdReadingS with isCommonsBill = false in votePasses() |
| 84 | billState = inPreparation  isCommonsBill = true | getClass().getName()@Integer.toHexString(hashCode())[isCommonsBill:true] | toString() |

****

**Question 7:**

See source code

Test case 9 and 19 are expected to fail because they travel the paths on the round-trip path tree that only goes from inHouseOfCommons (test case 9) or inSenate (test case 19) to awatingRoyalAssent. These paths are impossible.

**Question 8:**

Requirement validation would have revealed a trap door as trap door is a hidden functionality of the code that is not included in the specification. By referring back to the requirement, one can determine whether an input should be defined by the system. Each input identified in the requirement shall be recognized by the system. Once all the defined inputs are verified, variations of them can be used to test if the system responds to similar but undefined inputs. If it is not specified in the requirement but is accepted by the system, the implementation has a trap door for that input.