## Testing of the SiedlerGame.java class

## **Equivalence Partitionings**

#### Negative

- 1 Illegal placement position
- 3 Build with not enough resources
- 6 Trade where player does not have enough resources
- 7 Trade where bank does not have enough resources
- 8 No player has won game
- 11 Robbery no player has more than 7 resources
- 14 Thief placement at field with no settlements around
- 16 Resources are payed out
- 17 No Resources are payed out
- 19 player has no structures left to build

#### **Positive**

- 2 Legal placement position
- 4 Build with enough resources
- 5 Trade where player and bank have enough resources
- 9 One player has won game
- 10 More than one player has won game
- 12 Robbery one player has more than 7 resources
- 13 Robbery more than one player has 7 resources
- 15 Thief placement at field with one settlement around
- 18 Player strucutres left to build
- 20 initialize board
- 21 player switch to next player
- 22 player switch to previous player

## Test log

default testcases	Expected	Eqivalence Partititoning	Result
requirementPlayerSwitching	True		Passed
requirementSetupTestBoardUsedWithTheTests	True	20	Passed
requirementResourcePayoutAndReturnValueForDiceThrow	True		Passed
requirement Place Initial Settlement In Country Side No Payout	True	2, 21	Passed
requirementPlaceInitialSettlementInWaterNoPayout	False	1, 21	Passed
requirementPlaceInitialSettlementNextToWaterNoPayout	False	1, 21	Passed
requirementPlaceInitialSettlementValidPositionWithPayout	True	2, 20	Passed
requirementPlaceInitialRoadCorrectPlacement	True	2	Passed
requirementPlaceInitialRoadCorrectPlacementStartWithEndPoint	True	2	Passed
requirement Place Initial Road No House Adjacent	False	1	Passed
requirement Place Initial Road No Own House Adjacent	False	1	Passed
requirement Place Initial Road Place Already Used	False	1	Passed

requirementPlaceInitialRoadPositionInWater	False	1	Passed
requirementPlaceInitialRoadInvalidStartAndEnd	False	1	Passed
requirementBuildSettlementValidPosition	True	2,4, 22, 20	Passed
requirementBuildSettlementNoResources	False	3	Passed
requirementBuildSettlementNoSettlementsLeftToBuild	False	23	Passed
requirementBuildSettlementNoAdjacentRoad	False	1	Passed
requirementBuildSettlementAdjacentRoadFromOtherPlayers	False	1	Passed
requirementBuildSettlementInWater	False	1	Passed
requirementBuildSettlementOponentSettlementAdjacent	False	1	Passed
requirementBuildSettlementOwnSettlementAdjacent	False	1	Passed
requirementBuildSettlementPositionAllreadyUsed	False	1	Passed
requirementBuildCityValidPosition	True	2,4, 22	Passed
requirementBuildCityAlreadyBuildCityAtPosition	False	1	Passed
requirementBuildCityNotEnoughResources	False	3	Passed
requirement Build City Invalid Position	False	1	Passed
requirementBuildCityNoCitiesLeftToBuild	False	23	Passed
requirementBuildRoadValidPositionAdjacentSettlement	True	2,4, 22	Passed
requirement Build Road No Roads Left To Build	False	23	Passed
requirement Build Road Valid Position Adjacent Road	False	1	Passed
requirement Build Road Valid Position Adjacent Road Only From Other Player	False	1	Passed
requirement Build Road Valid Position No Adjacent Settlement Or Road	False	1	Passed
requirement Build Road Valid Position Adjacent Road No Resources	False	3	Passed
requirement Build Road Valid Position Adjacent Settlement No Resources	False	3	Passed
requirement Build Road In Water Has Adjacent Settlement	False	1	Passed
requirement Build Road In Water Has Adjacent Road	False	1	Passed
requirement Build Road Other Road Already Build	False	1	Passed
requirement Trade With Bank Four To One Player And Bank Have Resources	True	7	Passed
requirement Trade With Bank Four To One Player And Bank Have Resources Same	True	7	Passed
Resources			
requirement Trade With Bank Four To One Bank Has Not Resource	False	8	Passed
requirement Trade With Bank Four To One Player Has Not Enough Resource	False	9	Passed
requirementGetWinnerWithNoWinner	No	10	Passed
roquiromentCet\Ninner\NithOne\Ninner\NithCities	Winner Winner	11	Passed
requirement Get Winner With One Winner With Cities requirement Get Winner With One Winner	Winner	11	Passed
		12	
requirementGetWinnerWithMultipleWinner	First Winner	12	Passed
	VVIIIICI		
requirement Place Thief And Steal Card No Player Has More Than Seven Resources	True	13	Passed
requirementPlaceThiefAndStealCurrentPlayerHasMoreThanSevenResources	True	14	Passed
		14	Passed
reguirementPlaceThiefAndStealCurrentPlaverHasFightResources	Lirue		. 35564
requirementPlaceThiefAndStealCurrentPlayerHasEightResources requirementPlaceThiefAndStealCurrentPlayerHasSevenResources	True		Passed
requirementPlaceThiefAndStealCurrentPlayerHasSevenResources	True	13	Passed
requirement Place Thief And Steal Current Player Has Seven Resources requirement Place Thief And Steal Two Has More Than Seven Resources	True True	13 15	Passed
requirement Place Thief And Steal Current Player Has Seven Resources	True	13	

requirementPlaceThiefAndStealOneSettlementFromOtherPlayer	True	18	Passed
$requirement Place Thief And Steal One Settlement From Other Player With No Resset Theorem \cite{And Steal One Settlement} and the property of the property o$	True	18	Passed
ources			
requirement Place Thief And Steal One Settlement From Other Player With No Mount From Other	True	18	Passed
reResources			
requirementPlaceThiefAndStealNoSettlementsAroundThiefField	True	17	Passed
requirementPlaceThiefAndStealSetThiefOnSameField		1	Passed
requirementThrowDiceThiefIsSetNoResourcesPayedOut	True	20	Passed
requirement Throw Dice Thiefls On Other Field Set Resources Payed Out	True	21	Passed

# Screenshots

v 🖥	■ Sie	edlerGameTest [Runner: JUnit 5] (0.250 s)
	J	requirementTradeWithBankFourToOneBankHasNotResource() (0.053 s)
	J	requirementPlaceThiefAndStealPositionOnWater() (0.005 s)
	J	$requirement TradeWith Bank Four To One Player And Bank Have Resources () \ (0.005 \ s)$
	J	requirementBuildSettlementOponentSettlementAdjacent() (0.003 s)
	J	$requirement Build Road Valid Position Adjacent Road Only From Other Player () \ (0.004\ s)$
	JE:	$requirement Place Thief And Steal Two Has More Than Seven Resources () \ (0.006 \ s)$
	JE:	requirementPlaceThiefAndStealInvalidThiefPosition() (0.003 s)
	JE I	$requirement Place Thief And Steal Current Player Has More Than Seven Resources () \ (0.004 \ s)$
	J <sub>=</sub>	$requirement Place Thief And Steal One Settlement From Other Player With No More Resources () \ (0.004 \ s)$
	J	$requirement Throw Dice Thiefls On Other Field Set Resources Payed Out () \ (0.003 \ s)$
	J	requirementGetWinnerWithMultipleWinner() (0.008 s)
	<b>√</b> ≡	requirementResourcePayoutAndReturnValueForDiceThrow() (0.009 s)
	<b>√</b> ≣	requirementBuildRoadValidPositionAdjacentRoadNoResources() (0.003 s)
	<b>√</b> ≡	requirementThrowDiceThiefIsSetNoResourcesPayedOut() (0.003 s)
	J	requirementPlaceInitialSettlementInCountrySideNoPayout() (0.003 s)
	J	requirementBuildSettlementValidPosition() (0.008 s)
	J	requirementBuildCityInvalidPosition() (0.004 s)
	JE:	requirementPlaceThiefAndStealCurrentPlayerHasEightResources() (0.003 s)
		requirementBuildRoadValidPositionAdjacentSettlementNoResources() (0.002 s)
	_	requirementBuildSettlementPositionAllreadyUsed() (0.002 s)
	JE:	requirementPlaceThiefAndStealNoSettlementsAroundThiefField() (0.003 s)
		requirementPlaceInitialRoadPlaceAlreadyUsed() (0.003 s)
		requirementBuildSettlementNoSettlementsLeftToBuild() (0.001 s)
	_	requirementBuildRoadValidPositionAdjacentSettlement() (0.002 s)
		requirementGetWinnerWithOneWinnerWithCities() (0.005 s)
		requirementPlaceInitialSettlementValidPositionWithPayout() (0.003 s)
		requirementPlaceInitialRoadInvalidStartAndEnd() (0.003 s)
	_	requirementTradeWithBankFourToOnePlayerHasNotEnoughResource() (0.002 s)
		requirementPlaceThiefAndStealOneSettlementFromOtherPlayerWithNoResources() (0.001 s)
		requirementPlaceThiefAndStealCardNoPlayerHasMoreThanSevenResources() (0.002 s)
		requirementPlaceThiefAndStealSetThiefOnSameField() (0.002 s)
	J	requirementBuildSettlementNoResources() (0.002 s)

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requirementBuildRoadOtherRoadAlreadyBuild() (0.002 s)
requirementBuildSettlementNoAdjacentRoad() (0.002 s)
requirementPlaceInitialRoadCorrectPlacement() (0.002 s)
requirementPlaceInitialSettlementInWaterNoPayout() (0.002 s)
requirementPlaceInitialRoadPositionInWater() (0.002 s)
E requirementPlaceInitialRoadNoOwnHouseAdjacent() (0.001 s)
requirementPlayerSwitching() (0.002 s)
Figure 1. In the content of the property of
requirementSetupTestBoardUsedWithTheTests() (0.004 s)
requirementPlaceInitialRoadNoHouseAdjacent() (0.004 s)
requirementBuildCityAlreadyBuildCityAtPosition() (0.002 s)
requirementBuildSettlementAdjacentRoadFromOtherPlayers() (0.003 s)
requirementGetWinnerWithOneWinner() (0.002 s)
requirementBuildRoadValidPositionAdjacentRoad() (0.002 s)
requirementPlaceInitialSettlementNextToWaterNoPayout() (0.002 s)
requirementBuildSettlementOwnSettlementAdjacent() (0.004 s)
requirementPlaceThiefAndStealOneSettlementFromCurrentPlayer() (0.002 s)
requirementBuildSettlementInWater() (0.002 s)
requirementBuildCityValidPosition() (0.003 s)
requirementBuildRoadNoRoadsLeftToBuild() (0.004 s)
FrequirementBuildRoadValidPositionNoAdjacentSettlementOrRoad() (0.003 s)
requirementGetWinnerWithNoWinner() (0.002 s)
# requirementPlaceInitialRoadCorrectPlacementStartWithEndPoint() (0.001 s)
requirementBuildCityNoCitiesLeftToBuild() (0.002 s)
requirementBuildRoadInWaterHasAdjacentRoad() (0.001 s)
requirementBuildRoadInWaterHasAdjacentSettlement() (0.003 s)
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requirementBuildCityNotEnoughResources() (0.002 s)

# requirementPlaceThiefAndStealCurrentPlayerHasSevenResources() (0.001 s)

🖟 requirementTradeWithBankFourToOnePlayerAndBankHaveResourcesSameResources() (0.018 s)