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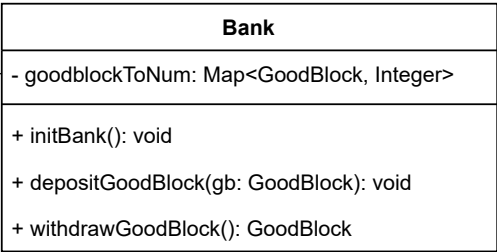
classDiagram
    class Shipboard {
        -forcedToAbandon: boolean
        -chosenToAbandon: boolean
        -daysOnFlight: int
        -color: String
        -nickname: String
        -componentTilesGrid: ComponentTiles[5][7]
        -standbyComponent: ComponentTiles[2]
        -discardedTiles: int
        -pngName: String
        +weldComponentTileShip(ct: ComponentTile, x: int, y: int): void
        +standbyComponentTileShip(ct: ComponentTile): void
        +pickStandByComponentTileShip(index: int): ComponentTile
        +destroyTileShip(x: int, y: int): void
        +checkShipboardShip(): boolean
        +abandonsShip(): void
        +addGoodBlockShip(x: int, y: int, gb: GoodBlock)
        +removeGoodBlockShip(x: int, y: int, index: int): GoodBlock
        +countExposedConnectorsShip(): int
        +isRightSideCannonShip(y: int): boolean
        +isTopSideCannonShip(x: int): boolean
        +isBottomSideCannonShip(x: int): boolean
        +isLeftSideCannonShip(y: int): boolean
        +isLeftSideShieldedShip(): boolean
        +isRightSideShieldedShip(): boolean
        +isTopSideShieldedShip(): boolean
        +isBottomSideShieldedShip(): boolean
        +isBottomSideEngineShip(x: int, y: int): boolean
        +activateComponentShip(x: int, y: int): void
        +deactivateComponentShip(x: int, y: int): void
        +isBottomSideSmoothShip(x: int, y: int): boolean
        +isTopSideSmoothShip(x: int, y: int): boolean
        +isRightSideSmoothShip(x: int, y: int): boolean
        +isLeftSideSmoothShip(y: int): boolean
        +columnEmptyShip(numOfColumn: int): boolean
        +rowEmptyShip(numOfRow: int): boolean
    }
    class ComponentTile {
        +x: int
        +y: int
        +color: String
        +index: int
        +shape: Shape
    }
    class GoodBlock {
        +x: int
        +y: int
        +index: int
        +color: String
        +shape: Shape
    }
    class Tile {
        +x: int
        +y: int
        +color: String
        +index: int
        +shape: Shape
    }
    Shipboard --> ComponentTile : weldComponentTileShip
    Shipboard --> ComponentTile : standbyComponentTileShip
    Shipboard --> ComponentTile : pickStandByComponentTileShip
    Shipboard --> ComponentTile : destroyTileShip
    Shipboard --> ComponentTile : checkShipboardShip
    Shipboard --> ComponentTile : abandonsShip
    Shipboard --> GoodBlock : addGoodBlockShip
    Shipboard --> GoodBlock : removeGoodBlockShip
    Shipboard --> Tile : countExposedConnectorsShip
    Shipboard --> Tile : isRightSideCannonShip
    Shipboard --> Tile : isTopSideCannonShip
    Shipboard --> Tile : isBottomSideCannonShip
    Shipboard --> Tile : isLeftSideCannonShip
    Shipboard --> Tile : isLeftSideShieldedShip
    Shipboard --> Tile : isRightSideShieldedShip
    Shipboard --> Tile : isTopSideShieldedShip
    Shipboard --> Tile : isBottomSideShieldedShip
    Shipboard --> Tile : isBottomSideEngineShip
    Shipboard --> Tile : activateComponentShip
    Shipboard --> Tile : deactivateComponentShip
    Shipboard --> Tile : isBottomSideSmoothShip
    Shipboard --> Tile : isTopSideSmoothShip
    Shipboard --> Tile : isRightSideSmoothShip
    Shipboard --> Tile : isLeftSideSmoothShip
    Shipboard --> Tile : columnEmptyShip
    Shipboard --> Tile : rowEmptyShip

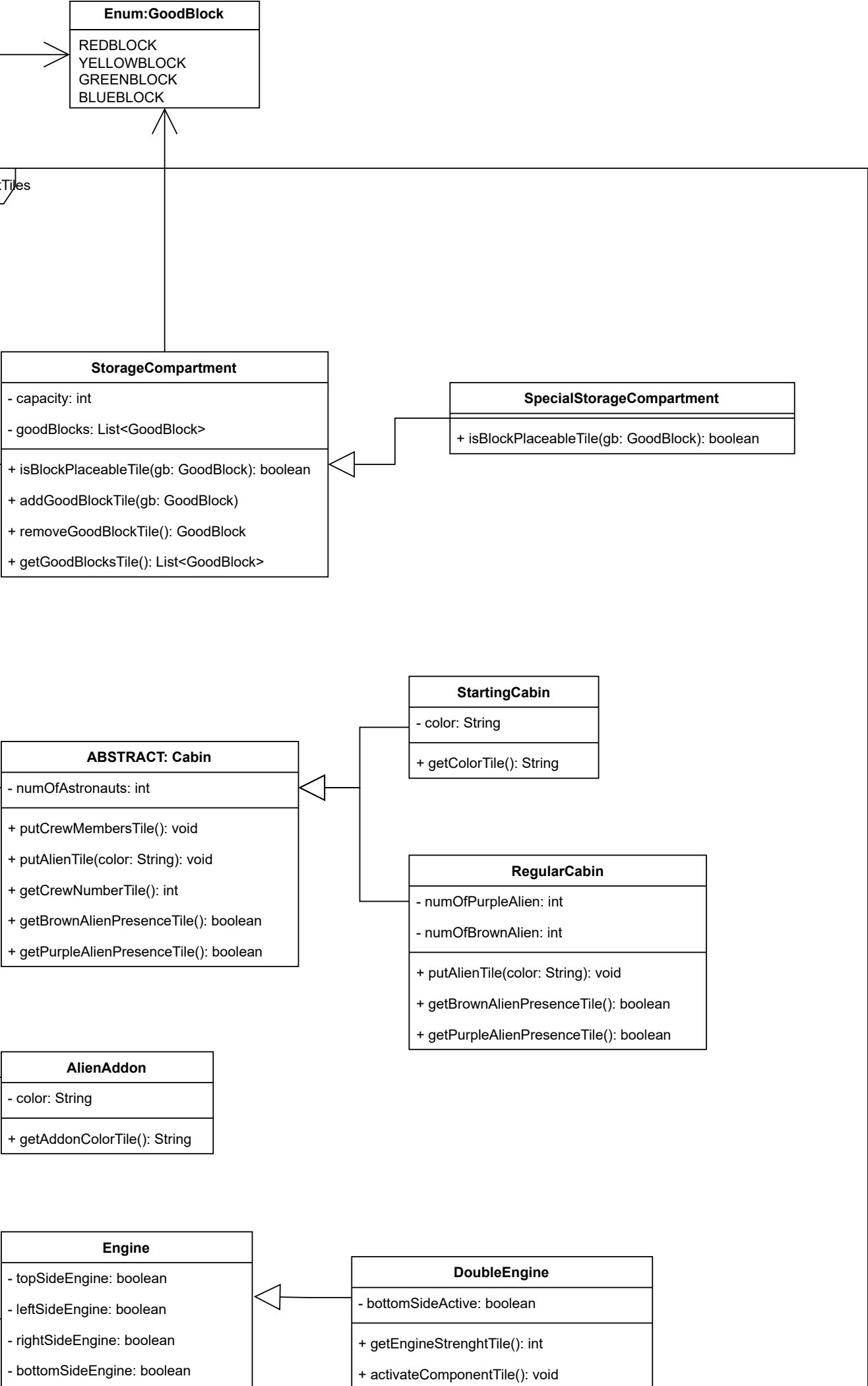
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The diagram illustrates the following classes and their methods:

- Shipboard**:
 - Attributes: `- forcedToAbandon: boolean`, `- chosenToAbandon: boolean`, `- daysOnFlight: int`, `- color: String`, `- nickname: String`, `- componentTilesGrid: ComponentTiles[5][7]`, `- standbyComponent: ComponentTiles[2]`, `- discardedTiles: int`, `- pngName: String`.
 - Operations: `+ weldComponentTileShip(ct: ComponentTile, x: int, y: int): void`, `+ standbyComponentTileShip(ct: ComponentTile): void`, `+ pickStandByComponentTileShip(index: int): ComponentTile`, `+ destroyTileShip(x: int, y: int): void`, `+ checkShipboardShip(): boolean`, `+ abandonsShip(): void`, `+ addGoodBlockShip(x: int, y: int, gb: GoodBlock)`, `+ removeGoodBlockShip(x: int, y: int, index: int): GoodBlock`, `+ countExposedConnectorsShip(): int`, `+ isRightSideCannonShip(y: int): boolean`, `+ isTopSideCannonShip(x: int): boolean`, `+ isBottomSideCannonShip(x: int): boolean`, `+ isLeftSideCannonShip(y: int): boolean`, `+ isLeftSideShieldedShip(): boolean`, `+ isRightSideShieldedShip(): boolean`, `+ isTopSideShieldedShip(): boolean`, `+ isBottomSideShieldedShip(): boolean`, `+ isBottomSideEngineShip(x: int, y: int): boolean`, `+ activateComponentShip(x: int, y: int): void`, `+ deactivateComponentShip(x: int, y: int): void`, `+ isBottomSideSmoothShip(x: int, y: int): boolean`, `+ isTopSideSmoothShip(x: int, y: int): boolean`, `+ isRightSideSmoothShip(x: int, y: int): boolean`, `+ isLeftSideSmoothShip(y: int): boolean`, `+ columnEmptyShip(numOfColumn: int): boolean`, `+ rowEmptyShip(numOfRow: int): boolean`.
- ComponentTile**:
 - Attributes: `+ x: int`, `+ y: int`, `+ color: String`, `+ index: int`, `+ shape: Shape`.
- GoodBlock**:
 - Attributes: `+ x: int`, `+ y: int`, `+ index: int`, `+ color: String`, `+ shape: Shape`.
- Tile**:
 - Attributes: `+ x: int`, `+ y: int`, `+ color: String`, `+ index: int`, `+ shape: Shape`.

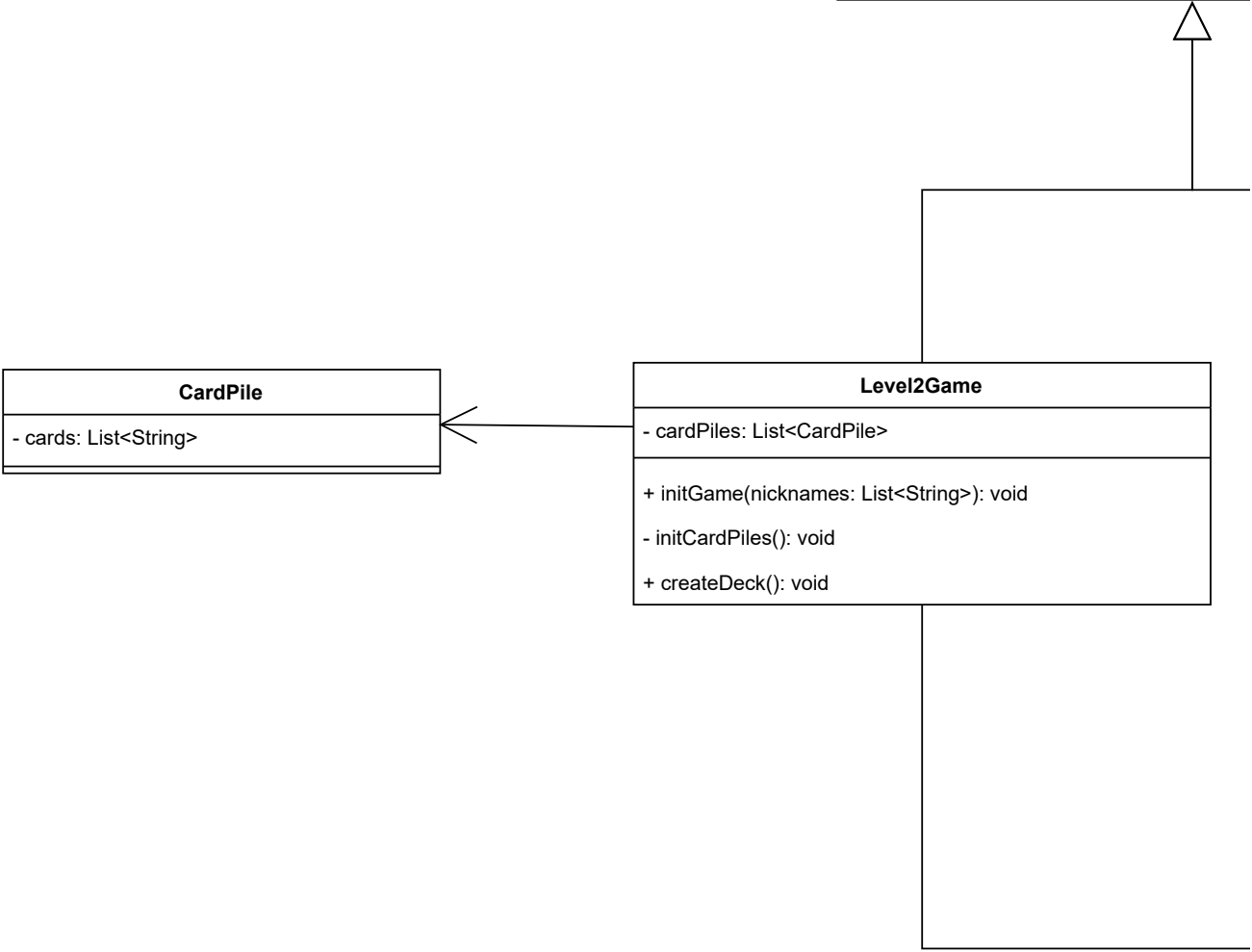
Relationships are shown as directed associations from **Shipboard** to each of the other three classes.





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+ rowEmpty(nickname: String, numOfRow: int): boolean
+ columnEmpty(nickname: String, numOfColumn: int): boolean
+ isLeftSideSmooth(nickname: String, x: int, y: int): boolean
+ isRightSideSmooth(nickname: String, x: int, y: int): boolean
+ isTopSideSmooth(nickname: String, x: int, y: int): boolean
+ isBottomSideSmooth(nickname: String, x: int, y: int): boolean
+ activateComponent(nickname: String, x: int, y: int): void
+ deactivateComponent(nickname: String, x: int, y: int): void
+ destroyTile(nickname: String, x: int, y: int): void
+ findShipWreck(nickname: String): int[][]
+ isBottomSideEngine(nickname: String, x: int, y: int): boolean
+ isLeftSideShielded(nickname: String): boolean
+ isRightSideShielded(nickname: String): boolean
+ isTopSideShielded(nickname: String): boolean
+ isBottomSideShielded(nickname: String): boolean
+ isLeftSideCannon(nickname: String, y: int): boolean
+ isRightSideCannon(nickname: String, y: int): boolean
+ isTopSideCannon(nickname: String, x: int): boolean
+ isBottomSideCannon(nickname: String, x: int): boolean
+ countExposedConnectors(nickname: String): int
```

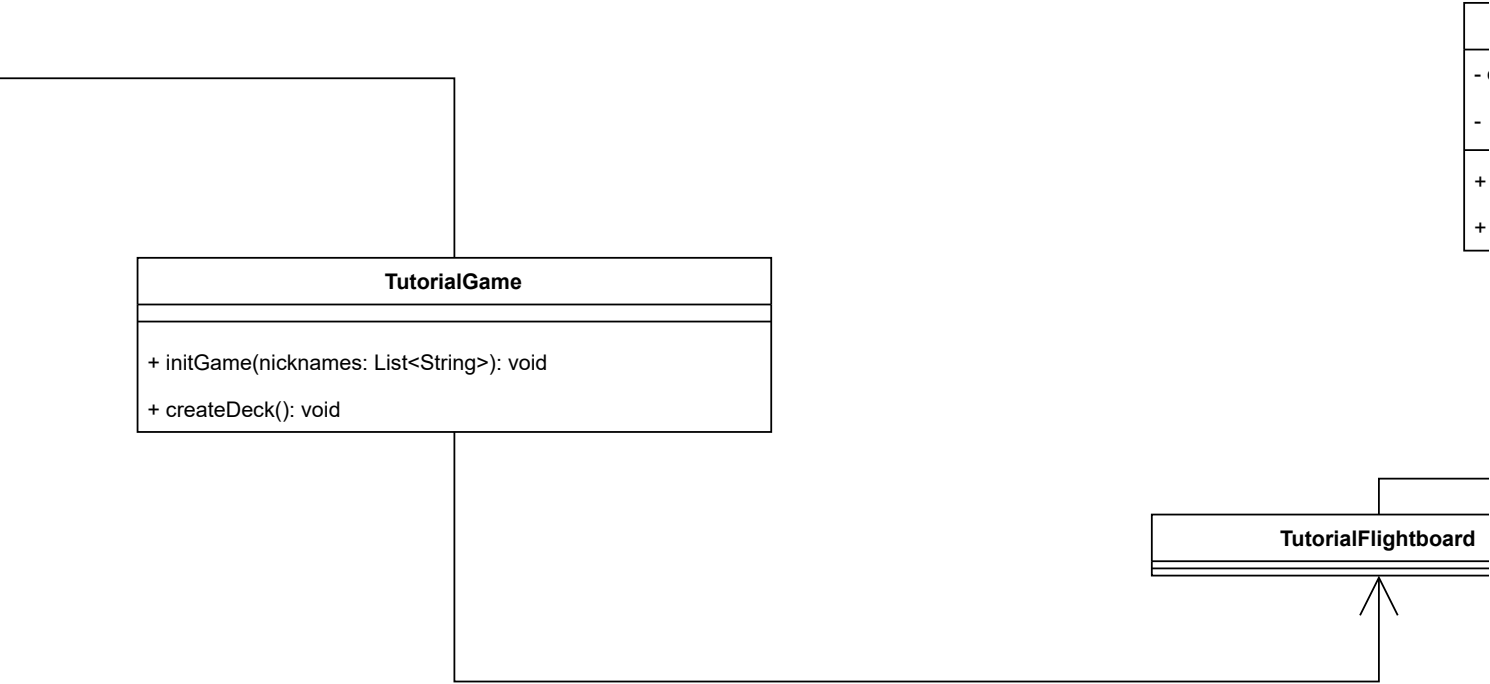
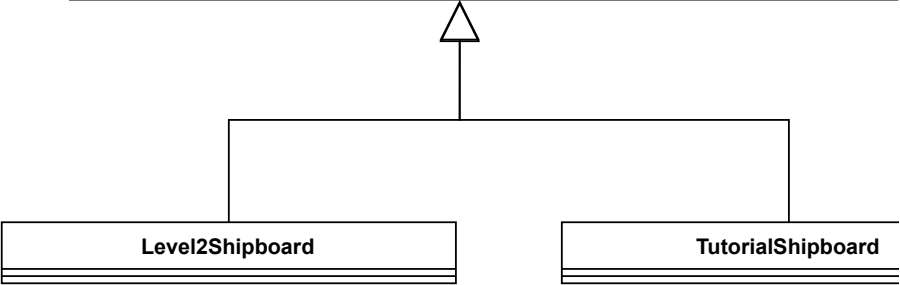
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+ removeBatteryToken(nickname: String, x:
+ getCannonStrenght(nickname: String): doi
+ getEngineStrenght(nickname: String, x: int
+ rowEmpty(nickname: String, numOfRow: i
+ columnEmpty(nickname: String, numOfCo
+ isLeftSideSmooth(nickname: String, x: int,
+ isRightSideSmooth(nickname: String, x: int
+ isTopSideSmooth(nickname: String, x: int,
+ isBottomSideSmooth(nickname: String, x:
+ activateComponent(nickname: String, x: ir
+ deactivateComponent(nickname: String, x
+ destroyTile(nickname: String, x: int, y: int):
+ findShipWreck(nickname: String): int[][]
+ isBottomSideShielded(nickname: String): l
+ isTopSideShielded(nickname: String): boo
+ isRightSideShielded(nickname: String): bc
+ isLeftSideShielded(nickname: String): boo
+ isBottomSideEngine(nickname: String, x: i
+ isLeftSideCannon(nickname: String, y: int)
+ isBottomSideCannon(nickname: String, x:
+ isTopSideCannon(nickname: String, x: int)
+ isRightSideCannon(nickname: String, y: in
+ countExposedConnectors(nickname: Strin
```



int, y: int): void
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t, y: int): int
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, y: int): boolean
nt, y: int): boolean
, y: int): boolean
int, y: int): boolean
nt, y: int): void
: int, y: int): void
: void

boolean
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boolean
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int, y: int): boolean
: int): boolean
nt): boolean
ng): int

+ getEngineStrenghtShip(x: int, y: int): int
+ getBrownAlienPresenceShip(): boolean
+ getCannonStrenghtShip(): double
+ getPurpleAlienPresenceShip(): boolean
+ removeBatteryTokenShip(x: int, y: int): void
+ removeMostValuableGoodBlocksShip(): void
+ addCosmicCreditsShip(credit: int): void
+ removeCrewMemberShip(x: int, y: int): void
+ putCrewMembersShip(x: int, y: int): void
+ isAlienPlaceableShip(x: int, y: int, color: String): boolean
+ isBlockPlaceableShip(x: int, y: int, gb: GoodBlock): boolean
+ putAlienShip(x: int, y: int, color: String): void
+ getCrewNumberShip(): int
+ shiftRocketShip(steps: int)
- getGoodBlocksShip(x: int, y: int): List<GoodBlock>
+ forcedToAbandonShip(): void



+ getEngineStrenghtTile(): int
+ rotateCounterClockwiseTile(): void
+ rotateClockwiseTile(): void
+ activateComponentTile(): void
+ deactivateComponentTile(): void
+ isBottomSideEngineTile(): boolean

+ deactivateComponentTile(): void

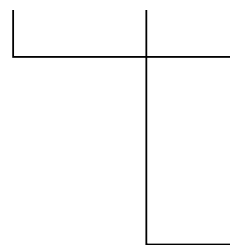
Cannon
- topSideCannoned: boolean
- bottomSideCannoned: boolean
- rightSideCannoned: boolean
- leftSideCannoned: boolean
+ getCannonStrenghtTile(): double
+ activateComponentTile(): void
+ deactivateComponentTile(): void
+ rotateCounterClockwiseTile(): void
+ rotateClockwiseTile(): void
+ isLeftSideCannonTile(): boolean
+ isRightSideCannonTile(): boolean
+ isTopSideCannonTile(): boolean
+ isBottomSideCannonTile(): boolean



DoubleCannon
- topSideActive: boolean
- bottomSideActive: boolean
- leftSideActive: boolean
- rightSideActive: boolean
+ getCannonStrenghtTile(): double
+ rotateClockwiseTile(): void
+ rotateCounterClockwiseTile(): void
+ activateComponentTile(): void
+ deactivateComponentTile(): void

StructuralModule

ShieldGenerator
- topSideShieldable: boolean
- rightSideShieldable: boolean
- leftSideShieldable: boolean
- bottomSideShieldable: boolean
- topSideShielded: boolean
- bottomSideShielded: boolean
- leftSideShielded: boolean
- rightSideShielded: boolean
+ rotateCounterClockwiseTile(): void
+ rotateClockwiseTile(): void
+ activateComponentTile(): void
+ deactivateComponentTile(): void
+ isBottomSideShieldedTile(): boolean
+ isTopSideShieldedTile(): boolean
+ isRightSideShieldedTile(): boolean
+ isLeftSideShieldedTile(): boolean



BatteryComponent
- numOfBatteries: int
+ removeBatteryTokenTile(): void