## matrixObject # int location # bool isAlive # bool canMove # int hitsLeft # objectType oType + matrixObject() + matrixObject(int row, int col, objectType objectType) + virtual ~matrixObject() + const int \* getLocation() const + void setLocation(int row, int col) + bool getIsAlive() const + bool getCanMove() const + void takeAHit() + objectType getType() const movingObject # orientation orient # int oldLocation + movingObject(int row, int col, objectType oType, orientation orient) + virtual ~movingObject() + int \* newLocation(int numOfCols, int numOfRows, bool atReverse=false) const + const int \* getOldLocation() const + void setNewLocation(int newRow, int newCol) + orientation getOrientation() const

bullet

+ bullet(int row, int col, orientation orient, objectType oType)

+ ~bullet() override

# int calcMoveRound
# vector< objMove > moves

+ tank(int row, int col, orientation orient, objectType oType)

+ ~tank() override

# int shotsLeft
# int inBackwards

+ void setOrientation(orientation newOrient)

+ bool canShoot() const

# int turnsUntilNextShot

+ void updateTurn()

+ void useShot()

+ int getInBack() const

+ void setInBackwards(int inBack)

+ virtual objMove play(const vector< vector< array< matrixObject \*, 3 > > &gameBoard, const int otherLoc[2], int numOfCols, int numOfRows)=0

+ bool isSafe(int x, int y, const vector< vector< array< matrixObject \*, 3 > > &gameBoard, int numOfCols, int numOfRows, int movesAhead) const

+ vector< objMove > getRotations(orientation start, orientation desired) const

+ bool canSeeOtherTank(const int otherLoc[2], const vector< vector< array< matrixObject \*, 3 > > \* &gameBoard, int numOfRows, int numOfCols) const

tank

+ bool hasBullets() const

+ int getNumOfShotsLeft() const

p1Tank

+ p1Tank(int row, int col, orientation orient)

+ objMove play(const vector< vector< array< matrixObject \*, 3 > > \$gameBoard, const int otherLoc[2], int numOfCols, int numOfRows) override

+ vector< objMove > playCalc(const vector< vector< array< matrixObject \*, 3 > > &gameBoard, const int tank2Loc[2], int numOfRows, int numOfCols)

p2Tank

+ p2Tank(int x, int y, orientation orient)

+ objMove play(const vector< vector< array< matrixObject \*, 3 > > &gameBoard, const int otherLoc[2], int numOfCols, int numOfRows) override

+ pair< int, int > getNeighborPointGivenOrient(int orient, int numOfROws, int numOfCols)

+ pair< objMove, int > determineNextMove(int currentOrientation, int targetOrientation)

+ array< int, 4 > searchForBullets(const vector< vector< array< matrixObject \*, 3 > > &gameBoard, int inRows, int inCols)