PotentialPaths

- coordinates:List
- paths:List
- leftPaths:List
-
- random:RandomNumberGeerator

+ PotentialPaths()
+ setCoordinate()
+ generatePaths()
- getCoordinate()
+ generateRandomPath()
+ updatePaths()
+ getRandomLeftPath()

KruskalAlgoriithm

- coordinateList:List
- setList:List
- paths:List
- edges:List

+ KruskalAlgorithm()
- generateSets()
+ unionSet()
+ findSet()
+ applyKruskal()
- addInterconnectivity()
+ getSetList()
+ getCoordinateList()

RandomNumberGenerator

- random:int

+ RandomNumberGenerator()
+ randomGenerator()
+ generateRandom()
+ generateProbability()

BreadthFirstSearch

- caves:Map
- visited:Map
- distance:Map

+ applyBfs()
- calculateShortestPath()
- generateCavesMap()
- getCave()
+ findMonsterNearby()

<<interface>> PlayerInterface

+ getPlayerDescription()
+ getName()
+ setTreasure()
+ getTreasure()
+ addArrow()
+ getArrows()
+ updateArrows()

<<interface>> DungeonInterface

+ getGrid()
+ addTreasure()
+ createPlayer()
+ movePlayer()
+ pickTreasure()
+ getPlayerDescription()
+ describeLocation()
+ displayDungeon()escrition()
+ getDirection()
+ setTreasure()
+ setLocation()
+ addMonster()
+ addArrows()
+ shootArrow()
+ pickArrow()

Player

- name:string
- treasureList:Map
- location:Coordinate

+ Player()

Dungeon

- row:int
- column:int
- interconnectivity:int
- wrap:String
- grid:List
- edges:List
- coordinates:List
- caves:List
- tunnel:List
- start:Cave
- end:Cave
- east:Coordinate
- west:Coordinate
- north:Coordinate
- south:Coordinate
- cavesTreasure:List

+ Dungeon()
- setCave()
- generateTunnel()
- generateCave()
- setLocation()
- countEdges()
- getCave()
- distanceBetween()
- findMonster()
- findDirection()

<<interface>> Cell

+ getTreasure()
+ getEast()
+ getWest()
+ getNorth()
+ getSouth()
+ removeList()
+ printInfo()
+ getCoordinte()
+ addMonster()
+ removeMonster()
+ addArrows()
+ updateArrow()
+ hasMonster()

Coordinate

- x:int
- y:int

+ Coordinate()
+ getX()
+ getY()
+ toString()

Treasure

- treasure:List

+ Treasure()
+ getTreasure()

<<enum>> TreasureType

diamond
sapphire
rubies

Caves

- east:Coordinate
- west:Coordinate
- north:Coordinate
- south:Coordinate
- caveCoordinate:Coordinate
- treasureList:List

+ Cave()

Tunnel

- east:Coordinate
- west:Coordinate
- north:Coordinate
- south:Coordinate
- caveCoordinate:Coordinate
- treasureList:List

+ Tunnel()

Monster

- hits:int

+ Monster()
+ hitMonster()
+ getHits()

Controller

- command:iCommand

+ setCommand()
+ buttonPressed()

Test Cases

1. Test case for adding the monster in the cave and not in the tunnel.
2. Test case for adding arrows in cave and tunnel both.
3. Test case for monsters present in the end cave and not in the start cave.
4. Test case for smell detected nearby.
5. Test case for smell detected at a distance.
6. Test case for no smell.
7. Test case for player having only 3 arrows at the start.
8. Test case for player picking an arrow to shoot.
9. Test case for player not able to shoot when arrow count is 0.
10. Test case for invalid direction for shooting an arrow.
11. Test case for invalid distance for shooting the arrow.
12. Test case for shooting an arrow and missing it.
13. Test case for shooting an arrow and hitting a monster once so that it is injured.
14. Test case for shooting monster dead.
15. Test case for player escaping with a 50 percent probability.
16. Test case for player being eaten by the monster.
17. Test case for player reaching end cave and winning the game.