Project4 UML Design

Dungeon «interface»
- + getBegin():CaveImpl
- + getEnd():CaveImpl
- + getPlayer():PlayerImpl
- + getAvailableMove():Set<Direction>
- + playerMove(Direction):void
- + playerTakeTreasure(String):boolean
- + playerTakeArrow():boolean
- + getTreasure():List<Treasure>
- + getArrow():List<ArrowImpl>
- + isGameOver():boolean
- + isWin():boolean
- + shoot(int, Direction):boolean
- + otyughsDistance(int):int

DungeonController «interface»
- + parseCommonLine(String[]):void
- + playerMove(Direction):void
- + playerPickUp(String):boolean
- + playerShoot(int, Direction):boolean
- + getPickup():Map<String, Integer>
- + gameOver():boolean
- + isWin():boolean
- + getAvailableDirection():Set<Direction>
- + getOtyughs():int
- + inCave(): boolean
- + getArrowsCnt():int
- + getBegin():Position
- + getEnd():Position
- + getPlayerInformation():Map<String, Object>
- + startGame(Scanner, Appendable, String[])

Cave «interface»
- + setTreasure(Treasure):void
- + getTreasures():List<Treasure>
- + getPosition():Position
- + getOtyughs():List<OtyughsImpl>
- + setArrows(ArrowImpl):void
- + getArrows():List<ArrowImpl>
- + addOtyughs(OtyughsImpl):void

Otyughs «interface»
- + underAttack():void
- + attack():boolean
- + isDead():boolean
- + getPosition():Position

Tunnel
- + Tunnel(int, int)

Player «interface»
- + getCave():CaveImpl
- + setCave(CaveImpl):void
- + getPosition():Position
- + goNorth():void
- + goWest():void
- + goSouth():void
- + goEast():void
- + takeTreasure(Treasure):void
- + getTreasures():List<Treasure>
- + getArrowCnt():int
- + takeArrow(ArrowImpl):void
- + shoot():void

BaseClass
- - position: Position

DungeonImpl
- - rowCnt:int
- - colCnt:int
- - wrapping:Boolean
- - begin:CaveImpl
- - end:CaveImpl
- - player:PlayerImpl
- - gameover:boolean
- - win:boolean
- - caves:CaveImpl[][]
- - edge:int[][]
- - availableDirection:Set<Direction>
- + DungeonImpl()
- + DungeonImpl(int, int, boolean, int, double, int)
- + getBegin():CaveImpl
- + getEnd():CaveImpl
- + getPlayer():PlayerImpl
- - kruskal(int[][]):int[][]
- - judgeCircle(int[][]):boolean
- + getAvailableMove():Set<Direction>
- + playerMove(Direction):void
- + playerTakeTreasure(String):boolean
- + playerTakeArrow():boolean
- + getTreasure(): List<Treasure>
- + getArrow():List<ArrowImpl>
- + isGameOver():boolean
- + isWin():boolean
- + shoot(int, Direction):boolean
- - getNext(CaveImpl, Direction):CaveImpl
- + otyughsDistance(int):int

DungeonControllerImpl
- - dungeon:DungeonImpl
- - instance:DungeonControllerImpl
- + TERRIBLESMELL:int
- + SLIGHTSMELL:int
- + NOSMELL:int
- + DungeonControllerImpl()
- + getInstance():DungeonControllerImpl
- + parseCommonLine(String[]):void
- + playerMove(Direction):void
- + playerShoot(int, Direction):void
- + playerPickUp(String):boolean
- + getPickUp():Map<String, Integer>
- + gameOver():boolean
- + isWin():boolean
- + getAvailableDirection():Set<Direction>
- + getOtyughs():int
- + inCave():boolean
- + getArrowsCnt():int
- + getBegin():Position
- + getEnd():Position
- + getPlayerInformation():Map<String, Object>
- + startGame(Scanner, Appendable, String):void

CaveImpl
- - treasures:List<Treasure>
- - arrows:List<ArrowImpl>
- - otyughs:List<OtyughsImpl>
- + CaveImpl(int, int)
- + setTreasure(Treasure):void
- + getTreasures():List<Treasure>
- + getPosition():Position
- + getOtyughs():List<OtyughsImpl>
- + setArrows(ArrowImpl):void
- + getArrows():List<ArrowImpl>
- + addOtyughs(OtyughsImpl):void

OtyughsImpl
- - blood:int
- + OtyughsImpl(Position)
- + underAttack():void
- + attack():boolean
- + isDead():boolean
- + getPosition():Position

Treasure
- - taken:boolean
- + Treasure(Position)
- + getType():String
- + takeTreasure():void
- + isTaken():boolean

PlayerImpl
- - arrowCnt:int
- - cave:CaveImpl
- - treasures:List<Treasure>
- + PlayerImpl(Position, CaveImpl)
- + getCave():CaveImpl
- + setCave(CaveImpl):void
- + getPosition():Position
- + goNorth():void
- + goWest():void
- + goSouth():void
- + goEast():void
- + takeTreasure(Treasure):void
- + getTreasures():List<Treasure>
- + getArrowCnt():int
- + takeArrow(ArrowImpl):void
- + shoot():void

ArrowImpl
- - isTaken:boolean
- + ArrowImpl(Position)
- + take():void
- + isTaken():boolean

Arrow «interface»
- + take():void
- + isTaken():boolean

Rubies
- + Rubies(Position)
- + getType():String

Diamonds
- + Diamonds(Position)
- + getType():String

Sapphires
- + Sapphires(Position)
- + getType():String