Yogi Bear

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Task:

Yogi Bear wants to collect all the picnic baskets in the forest of the Yellowstone National Park. This park contains mountains and trees, that are obstacles for Yogi. Besided the obstacles, there are rangers, who make it harder for Yogi to collect the baskets. Rangers can move only horizontally or vertically in the park. If a ranger gets too close (one unit distance) to Yogi, then Yogi loses one life. (It is up to you to define the unit, but it should be at least that wide, as the sprite of Yogi.) If Yogi still has at least one life from the original three, then he spawns at the entrance of the park. During the adventures of Yogi, the game counts the number of picnic baskets, that Yogi collected. If all the baskets are collected, then load a new game level, or generate one. If Yogi loses all his lives, then show a popup messagebox, where the player can type his name and save it to the database. Create a menu item, which displays a highscore table of the players for the 10 best scores. Also, create a menu item which restarts the game.

UML Diagram:

Game

-gameLevels : HashMap
-gameLevel : GameLevel
-dataBase : Database
-isbetterHighScore :boolean
-numLive = 3 : int
-rangers : List
-dir : int
-time : int

+Game()
+loadGame(Game gameID)
+restart()
+step(Direction d)
+check() : boolean
+move()
-readLevels()
-addNewGameLevel(GameLevel g)
-readNextLine(Scanner sc) : String
-readGameId(String line) : GameID

GameID

-difficulty : String
-name : String
-level : int

+GameID(String diff, int level)
+GameID(String name, String diff, int level)
+hashCode : {Override}
+equals : {Override}

GameLevel

+gameID
+rows, cols : int
+level : LevelItem[][]
+player: Position
+numBoxes, numBoxesInPlace, numSteps : int

+GameLevel(ArrayList gameLevelRows, GameId gameID)
+GameLevel(GameLevel g)
+isGameEnded : boolean
+isValidPosition : boolean
+isFree :boolean
+isBox : boolean
+movePlayer :boolean
+moveBox(Direction d) : boolean

HighScoreWindow

-table : JTable

+HighScoreWindow(ArrayList highscores, Jframe parent)

HighScoreTable

+highScore : ArrayList
+colName : String[]

+HighScoreTable(ArrayList highScore)

LevelItem

Enum
BASKET('$'), RANGER('.'), RANGERV('V'), WALL('#'),
EMPTY(' '), MOUNTAIN('M'), TREE('T'), PLAYER('@');
+representation : char

+LevelItem(char c)

Board *****

-game : Game
-box, destination, player : Image
-wall, empty, mountain, tree : Image
-scale : double
-scale_size : int
-tile_size : int
-timer : Timer
-time : int

+Board(Game g)
+startTimer()
+setScale(double scale) : boolean
+refresh : boolean
+paintComponent {Override}

MainWindow

-game : Game
-board : Board
-gameStateLabel : JLabel
+timer : Timer

+MainWindow()
+refreshGameStateLabel()
+createGameMenuLabel()
+createScaleMenuItems(JMenu menu, double
from, double to, double by)
+main()

ResourseLoader

+loadResourse(String resName) :InputStream
+LoadImage(String resName) :Image

DataBase

-tableName : String
-conn : Connection
-highScores : HashMap

+DataBase()
+storeHighScore(GameId gameID, int newScore)
+getHighScore() : ArrayList
-loadHighScore()
-mergeHighScores() : boolean
-storeToDataBase() : int

HighScore

-difficulty : String
-name : string
-level, steps : int

+HighScore(GameID, gameID, int steps)
+HighScore(String name, difficulty, int level, steps)
+hashCode : {Override}
+equals : {Override}
+toString: {Override}