Hillbert Prototype

Rules

Gameplay

The game is played in turns. At each turn, the following steps are taken:

1. Populate the board (see *Initial Hill Generation*) and place the Small Hillbert token in the central cell of the first row (cell number 4).
2. Hillbert moves according to the movement rules (see *Hllbert Movement Rules*).
3. Collisions with obstacles have to be solved according to the rules presented in *Obstacles Rules*.
4. If Hillbert eats food, Hillbert size is changed according to *Eating, Growing, and Shrinking Rules*.
5. The whole board is shifted up as necessary and new contents are generated, according to *Procedural Hill Generation Rules*.
6. If in the last 3 turns Hillbert has not eaten and his size was small, then the game ends (see *Ending Condition*). Otherwise, go back to Step 2.

Hillbert Movement Rules

The movement of Hillbert depends on his size.

- Small Hillbert (1x1). On every turn, Hillbert obligatorily moves 1 cell forward, and then it can move up to 3 cells sideways.
- Medium Hillbert (2x2). On every turn, Hillbert obligatorily moves 2 cells forward, and then it can move up to 2 cells sideways.
- Big Hillbert (3x3). On every turn, Hillbert obligatorily moves 3 cells forward and then it can move up to 1 sideways.

Hilbert can decide to jump if he hasn't jumped in the previous turn. If he does, he lands at the destination cell, avoiding all the cells in the middle; i.e., those cells are not touched. Also the jumping capabilities of Hillbert depend on his size.

- Small Hillbert can jump up to 3 consecutive cells per turn.
- Medium Hillbert can jump up to 2 consecutive cells per turn.
- Big Hillbert can jump up to 1 cell per turn.

VERY IMPORTANT!!! EVERY TIME HILLBERT MOVES BY 1 CELL (IN EVERY DIRECTION), HIS TOKEN HAS TO BE ROTATED BY 90º CLOCKWISE.

Eating, Growing, and Shrinking Rules

Every time Hillbert traverses a cell containing food, the food is eaten by Hillbert. The food token is removed from the board.

Hillbert grows at the end of a turn where he ate food. Hillbert can only increase his size once per turn, therefore eating more than 1 food item does not affect Hillbert.

Hillbert shrinks at the end of a turn where he didn't eat any food.

Obstacles Rules

Three obstacle sizes: small obstacle (1x1), medium obstacle (1x2), big obstacle (2x2).

When Hillbert visits a cell with an obstacle, his movement is affected according to the following table.

Hillbert \ Obstacle	*Small*	*Medium*	*Big*
Small	Obstacle is not affected. Hillbert is stopped.	Obstacle is not affected. Hillbert is stopped.	Obstacle is not affected. Hillbert is stopped.
Medium	Obstacle is destroyed. Hillbert is not affected.	Obstacle is destroyed. Hillbert is stopped.	Obstacle is not affected. Hillbert is stopped.
Big	Obstacle is destroyed. Hillbert is not affected.	Obstacle is destroyed. Hillbert is not affected.	Obstacle is not affected. Hillbert is stopped.

Ending Condition

The game is over if in the last 3 turns Hillbert has not eaten and his size was small.

Procedural Hill Generation Rules

At the end of the turn, the whole board content is shifted up one row at the time, until some part of Hillbert stand in the top-most row of the board. All the tokens that exit the board as a result of the shifting are removed.

Every time the board is shifted up by 1 row, the player is awarded 1 point and the content of the bottom-most row has to be generated.

Roll 1d8 (a eight-faced die) to define the position for a new obstacle:

- 1 – 7, a random obstacle is located in the corresponding cell. In case of medium or big obstacle, the cell identifies the left or the top-left corner of the obstacle. Note that the medium obstacle is always placed horizontally. In case the cell is already occupied, do not place the obstacle.
- 8, locate two random obstacles. Throw 2d8 to determine their location. An 8 or an occupied cell mean that the obstacle should not be placed.

Once the obstacle(s) has been placed, roll another 1d8 to define the position for a new food. Use exactly the same rules as per the obstacle.

Initial Hill Generation

Execute the rules explained in *Procedural Hill Generation Rules* for every row in the table, starting from the second one.