/\*\*

\* This class represents a single step in a path generated by the A\* pathfinding

\* algorithm. Waypoints consist of a location, the previous waypoint in the

\* path, and some cost values used to determine the best path.

\*\*/

public class Waypoint

{

/\*\* The location of this waypoint. \*\*/

Location loc;

/\*\*

\* The previous waypoint in this path, or <code>null</code> if this is

\* the root of the A\* search.

\*\*/

Waypoint prevWaypoint;

/\*\*

\* This field stores the total previous cost of getting from the starting

\* location to this waypoint, through the chain of waypoints. This is an

\* actual cost of following the path; it does not include any estimates.

\*\*/

private float prevCost;

/\*\*

\* This field stores an estimate of the remaining cost of traveling from

\* this waypoint to the final destination.

\*\*/

private float remainingCost;

/\*\*

\* Construct a new waypoint for the specified location. A previous waypoint

\* can optionally be specified, or the reference can be <code>null</code> to

\* indicate that the waypoint is the start of the path.

\*\*/

public Waypoint(Location loc, Waypoint prevWaypoint)

{

this.loc = loc;

this.prevWaypoint = prevWaypoint;

}

/\*\* Returns the location of the waypoint. \*\*/

public Location getLocation()

{

return loc;

}

/\*\*

\* Returns the previous waypoint in the path, or <code>null</code> if this

\* is the start of the path.

\*\*/

public Waypoint getPrevious()

{

return prevWaypoint;

}

/\*\*

\* This mutator allows both the previous cost and the remaining cost to be

\* set in one method call. Normally these values will be set at the same

\* time anyway.

\*\*/

public void setCosts(float prevCost, float remainingCost)

{

this.prevCost = prevCost;

this.remainingCost = remainingCost;

}

/\*\*

\* Returns the actual cost of getting to this point from the starting

\* location, through the series of waypoints in this chain.

\*\*/

public float getPreviousCost()

{

return prevCost;

}

/\*\*

\* Returns an estimate of the remaining cost of traveling from this

\* point to the final destination.

\*\*/

public float getRemainingCost()

{

return remainingCost;

}

/\*\*

\* Returns the total cost estimate for this waypoint. This includes the

\* actual cost of getting to this point from the starting location, plus

\* the estimate of the remaining cost of traveling from this point to

\* the final destination.

\*\*/

public float getTotalCost()

{

return prevCost + remainingCost;

}

}

